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Co-optimism for the Future of Farming

To ask “What is the future of agriculture?” is really to ask “What is the future?” To answer it fully one must describe not only the farm and garden of the future, but also future dinner tables, household budgets, fiscal priorities, public health challenges, technologies, and landscapes. Will we buy all our food from Amazon? Will restrictive immigration policies speed the coming of the robot age? Will we try to outsmart climate change by growing things on the moon? (The Chinese have already managed to sprout cotton seeds there, but the seedlings froze on a chilly lunar night: anyone who’s ever set her tomatoes out too early knows how that goes.)

Most farmers and gardeners share an almost pathological optimism. It’s a necessary trait if we are going to reseed the tomatoes after squandering six weeks of care and a bag of potting soil. This doesn’t mean we don’t see challenges: optimism sees hope against the odds (otherwise it’s just logic). The people we’ve profiled in this catalog don’t deny the threats of pollution, go-betweens, technology, convenience, or profit — but the seedlings froze on a chilly lunar night: anyone who’s ever set her tomatoes out too early knows how that goes.

I am an ex-farmer: my own optimism has taken some hits, but it hobbles on. I am talking to more growers these days who recognize that agriculture to survive and thrive into the next century. Few of the back-to-the-landers in the 20th century had much desire to earn their living on the farm: they either had family money or outside careers to fall back on, or they wished to drop out of the monetary economy as thoroughly as possible. My own cooperative, small and in the early ‘90s, had business ambitions, but we each lived out the values of agricultural diversity and farm-to-consumer sales independently on our own farms. It turns out this is exhausting: vertical and horizontal integration are both tools that the big guy can wield more easily than the little guy.

I am talking to more growers these days who recognize that just because they value diversified agriculture and a direct connection to their customers doesn’t mean they personally have to grow broccoli and apples and chickens and wheat and take on all the marketing and transportation costs. Growers are pooling their production to enjoy the advantages of larger growers without losing their individual character or much of their autonomy. This approach holds promise for growers’ profits and quality of life, land use efficiency, and retail pricing, a win-win-win.

Individually and in cooperation with neighbors, we are all building the future of agriculture every day. What will you eat today? And what seeds will you plant?

– Alice Coyle, OGS Coordinator

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NEW! for 2020

Potatoes, Onions & Exotics:
7500 Patterson Onion: We hear the pitter-patter of a Copra replacement!
7519 Yellow Granex Onion: select success for southerners!
7520 Walla Walla Onion: Walla you grow the biggest onions?
7997-7999 Sweet Potato Slips: Easier to grow, in orange, white or purple!
7600 Austrian Crescent Potato: Buttery as a croissant, but not as flaky!
7130 Banana Organic Potato: Same fat fingers, now with better karma!
7640 Algoinquin Potato: Early and beautiful!
7265 Gold Rush Russet Organic Potato BACK! We struck it rich again!
7705 Reds: Blight-resistant and beautiful!
7875 Gensecce: Creamy and beautiful!

Cover Crops & Supplies:
8175 BioOrganics Endo: Permaculturists can have their mycorrhizae, too!
8180 Mammoth P: For mammoth buds!
8189 Monster Plant Mojo: The new MPM!
8193 Custom Mixing: We’ll stir it up, little darling!
8195 Aragonite: BACK! For our oyster shell aficionados!
8240 Hum- Amend Max: Max out your humus!
8307 Sleepytime Garden Blend: Bedtime stories for your soil!
8317 3G Greener Garlic Shovel: Boost your garlic reception!
8348 Biochar: No basalt, no nonsense—just straight-up char!
8351 Superworm Frass: Bug poop grows great bud!
8646 Cooling Moth Traps: Trap and lure in one convenient package!
8709 Monty Complete Disease Control: Control everything! Everything!!!
8710 Cease: Like a legal injunction against fungal disease!
8876 Coertan: There’s a new row cover in town!
8961-8963 BeeHut & Bee Bags: Affordable housing for native pollinators!
8969 Tree Staking Kit: Keep your trees straight!
9195 Punch N Cut: Improve your irrigation, or your boxing skills!
9340 Cloth Produce Bags: Jump on the plastic-free bandwagon!
9353 Sun Sugar Berry Boxes: Cuter (more sustainable) produce packaging!
9433 Fedco Hoodie: Sassy & fashionable!
9435-9454 DinoMelon Shirts: Who’s Your Daddy?

You’re the Apple of Our Eye

Are you one of the 5,000 people who ordered trees and shrubs from Fedco last year? Protect your investment and ensure bountiful harvests of delicious organic fruit for generations with our lineup for the holistic orchard.
8175 BioOrganics Micronized Endomycorrhizal Inoculant NEW!
8194 Orchard Soil Testing Service
8266 Kelp-It Seaweed Powder
8324 Hole- Icistic Spring Planting Mix
8330 Fruition Mix for bearing fruit trees
8333 Fall Fruit Tree Prep Mix
8336 Ancients Rise Mix: for revitalizing old trees
8624 Tree Tanglefoot Insect Barrier
8625 BugBarrier Tree Bands
8636 Apple Pest Kit
8646 Cooling Moth Trap Kit NEW!
8657 Holistic Orchard Spray Kit
8660 Neem Oil: Paint trunks, prevent borers!
8684 Microsulfured Sulfur
8690 THAT Liquid Sulfur
8711 Styilet Oil
8714 ThermX 70
8717 Nu Film P
8720 Surround WP
8723 Deer Stopper
8726 MoleMax deters voles
8862 Orchard Netting
8865 Deer X Fencing
8961-3 BeeHuts & Reeds for Native Pollinators! NEW!
8965 Tree Guards
8968 Limb Spreaders
8969 Tree Staking Kits NEW!
8971 Grafting Kits: Bench or Topworking!
8974 Parafilm Tape & 8977 PVC Grafting Tape
8980 Rubber Grafting Strips
8998 World’s Best Fruit Picker w/ telescoping handle and padded head
9001 Deluxe Fruit Picking Bucket w/ Harness
9004-9013 Felco Pruners
9037-9038 Felco Saws
9040-9049 Silky Pruning Saws: excellent quality Japanese saws
9064 Sharpener for Dummies: sharpen tools without headaches
9104 Orchard Irrigation Kit (If you’re hip to the drip?)
9122-9125 Emitter Tubing: easy orchard irrigation

Web only items: 8648 Yellow Sticky Strips, 8639 Phemerone Wing Trap and 8645 Codling Moth Lure
So Many Ways to Save!
If our list prices or shipping charges look high at first glance, please take another look. Fedco is a big believer in the powers of planning and cooperation to save our customers money and we offer many opportunities to do so:

**Volume Discounts** - Our volume discounts start at 5% off orders of $100+ and go up from there. Our volume discount chart is displayed throughout this section. Most commercial customers can easily qualify for our bulk pricing program, which kicks in for orders with a retail value of $2500+ and offers discounts of 20-30% off retail.

**Rolling Discounts** - We love our repeat customers! You don’t have to buy everything at once. Once you place a Growers Supply order of at least $100, we calculate your volume discount based on the total of your orders over a rolling 12-month period.

**Group Ordering** - You can team up with your friends and neighbors to earn higher discounts! Group orders can also share a pallet to reduce shipping costs. We make it easy and painless. For instructions, please visit fedcoseeds.com/ogs/groups.htm.

**Truck Shipping** - For orders that weigh more than a couple hundred pounds, shipping on a pallet instead of in a box can be very economical. See page 166 for more info.

**Depot Shipping** - We have farms and storefronts throughout the Northeast lined up to accept monthly pallet shipments of Growers Supply goods so our customers can pick up their orders close to home at shipping costs up to 80% lower than UPS rates. See page 166.

**Special Ordering** - Many of our soil amendments are available in bulk totes or full truckloads. We can also offer very reasonable prices on items special-ordered from our suppliers if we have enough lead time and don’t need to warehouse the items for you. Contact us at ogs@fedcoseeds.com

ORGANIC CERTIFICATION
We are a MOFGA-certified organic repacker and handler of seed and feed. Organically produced items (with Organic in the name) are certified by USDA-approved agencies. We have on file each grower’s certificate; our products are labeled and handled in ways to ensure their integrity. The receipt with your order has our certification number and is your certificate that what you purchased is organic. Please keep it for your records.

Conventionally grown seed is either untreated or coated with OMRI-listed coatings and inoculants. Certified-organic growers may be able to use such seed: consult with your certifier.

We sometimes have short crops and failed lots. We do occasionally substitute conventional varieties unless you note otherwise. Please see our substitution policy on the right.

Agricultural inputs used on a certified-organic farm must be listed in your Organic System Plan and approved by your certifier. This does not necessarily mean that the inputs themselves are certified organic. We label the inputs we carry as follows:


MOFGA: Reviewed and approved by the Maine Organic Farmers & Gardeners Association Certification Services.

WSDA: Listed by the Washington State Department of Agriculture’s Organic Certification division.

Nat’l List: One-ingredient products on the NOP List of Allowed Substances

AYC: Ask your certifier. Has not been reviewed by a certifier, but the active ingredient is allowed.

Not Allowed: Has a place in sensible agriculture; may be used when certification is not an issue.

This information is correct to the best of our knowledge at press time. We cannot be responsible for errors or changes; changes are posted to our website as we become aware of them. In order to be certain that a product is allowed, check with your certifier.

POTATOES, ONIONS & EXOTICS
SPRING PLANTING STOCK
The items on pages 110-115 ship in spring only.
Product availability is updated regularly at fedcoseeds.com. You’ll find more ordering info on page 160. For mail orders, use the form on page 163.

- **Potatoes and onion/shallot sets** ship in April.
- **Onion plants and sweet potato slips** are shipped based on zone; see next page.
- **Ginger and Turmeric** ship in early March.

**Ordering Deadlines for Potatoes, Onions & Exotics**

<table>
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<th>by February 24</th>
<th>For ginger and turmeric; for best selection of potatoes; or to guarantee availability of early April shipping dates.</th>
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<td>by April 6</td>
<td>For potatoes, onion sets &amp; plants, and sweet potato slips.</td>
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<td>after April 6</td>
<td>Limited inventory. 50# bags of potatoes (size E) at clearance prices. Availability is regularly updated online.</td>
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What is Certified Potato Seed?
All certified seed potatoes start as disease-free clones and are sold to seed growers as minitubers. In Maine, seed potato growers are allowed to replant for six years before they need to start again with disease-free stock. Each year during the growing season farmers seeking certification have their fields inspected for viral and bacterial diseases. After harvest the farmers must submit a sample of each variety for disease testing at the Maine Potato Testing Lab. To be labeled and sold as certified potato seed, lots need to be 100% free of certain pathogens and at least 95% free of others. We sell only certified potato seed.

We also offer many varieties that are certified organic. Their growers have met both the standards of potato seed certification and the standards of organic production.

None of our varieties are genetically engineered. See page 107 for Fedco’s policy on GMOs.

**Substitutions**
Because potatoes are subject to crop limitations, we run out of some varieties. Most people prefer getting potatoes to getting a refund. **Unless you indicate that you will not accept substitutions, we’ll follow this protocol:**

For conventionally grown varieties -
- We will substitute a variety of similar color and season.

For organically grown varieties -
- We will substitute conventional stock of the same variety and refund the price difference.
- If that’s not available, we will substitute certified organic stock of a similar variety.

**Bulk Prices**
If you are ordering more than 1000#, call or write for a bulk price list. Or find it online at fedcoseeds.com.
Allium cepa

Onions and shallots are day-length sensitive—to produce large bulbs, plant in spring as soon as soil is workable. Most of our sets and plants are long-day varieties, suitable for northern growers. Shallow rooted, onions and shallots require rich weed-free soil and consistent water. Try our B318 Tears of Joy Onion Kit (below) to increase your odds for success. Plant onions 3” apart in rows 1” apart and thin to 6” as they grow. (If you don’t want to thin, plant them 4-6” apart.) Mulch when they are 1” tall. Plant shallots 4” apart in rows 1” apart. During the season, pull any plants that begin to bolt and use them as scallions. It’s a good idea to sidedress once or twice a season, especially close to summer solstice. Clean and grade before storage. Eat double-bulbed and thick-necked onions first because they won’t keep. Ideal storage conditions are temperatures at 32° with humidity of 60–70%. If you can’t do that, work to get a total number of 100. For example, at temperatures from 50–55°, humidity should be 45–50%.

For onion seed and more cultural information, see pages 47–49.

SETS

Approx. 200 onion sets per pound. Approx. 15 shallot bulbs per pound. We ship sets with potato orders in April.

Stuttgarter Onion Sets These small to medium-size semi-flat firm bulbs will store until June if cured properly. Be sure to plant out your Stuttgarter early, water if necessary, and fertilize liberally throughout the season. Try them in creamy onion dip, or sliced on camas asada, or our favorite: cornmeal and beer-battered onion rings.

Yellow Moon Dutch Shallots Also called Multiplier Onions, these beefy yellow bulbs feature the unique flavor of the shallot sisterhood. Skip the trouble of months of seedling tending for these Dutch-grown shallot sets. These pups can grow as big as small onions, and have unsurpassed flavor. Fancy chefs covet shallots, and home gardeners love an allium that stores through to the next July.

Tears of Joy Onion Kit All you need to grow a bountiful healthy crop of onions, whether you’re starting with onion sets or plants or growing your own seedlings. Includes 5# of NutriVeg for season-long release of nutrients; a pint of fish hydrolysate with kelp to get your transplants off to a good start; 50# of white-on-black plastic mulch to stop weeds, retain moisture, and keep the soil comfortable for cool-loving alliums; a quart of Garlic Barrier to deter fungus and insect pests; 25 mesh bags to store the roots of your labor; and growing instructions. All inputs MOFGA.

ONION PLANTS

All set with sets? Try onion plants! All other factors being equal, onions grown from seedlings will grow bigger and resist disease better than set-grown onions. Just tease apart the bundles and transplant the bare-root seedlings directly into spring garden beds. Onion plants are drop-shipped Priority Mail directly to you from our Texas supplier, so shipments can arrive from January through April according to your planting zone. (See chart.) You may also request a shipping week when placing your order. Onions are dug as live plants from the field; shipping schedule may be delayed by a week or two due to weather conditions or other variables. You will be notified via email when your order has shipped.

Planting instructions (for conventional growing) will arrive with your shipment. See our website for organic fertilization recommendations.

Gardener’s Onion Plant Medley 50 plants each of 3 varieties of onion plants: Patterson, Redwing and Yellow Sweet Spanish. If you want an assortment of onions but don’t have space for a hundred of each, try this package deal.

Patterson (104 days) F-1 hybrid. Long-day. Blocky-globed rusty-bronze–skinned Patterson have emerged as Copra’s worthy heir. Large, uniform size, thin necks for easy curing, and excellent storage potential. Available as seed on page 48.

Redwing (116 days) F-1 hybrid. Long day. Best red storage onion for northern growers. Hard deep purple-red glossy 3–4” globes store almost as well as old fave Copra. Very high yield potential.

Yellow Granex (125 days) F-1 hybrid. Short day. For northern growers, better planted south of the NC-VA border. This is the variety that growers in Vidalia, GA, use to grow their world-famous sweet onions. You can’t call them Vidalia onions unless that’s where you live, but you can still grow some mighty sweet onions. Will store for a couple months if well-cured.

Walla Walla (125 days) Open-pollinated. Long day. These large onions are renowned for their mild flavor as soon as they come out of the ground. Said to have originated in the French island of Corsica and been brought to Washington by a French soldier, this onion became famous in the Pacific Northwest for its juicy sweet flavor and has been in commerce since around 1900. In WA it can be wintered over. In our harsher zone it must be sown in the spring for fall harvest. They do not store. Available as seed on page 47.

Yellow Sweet Spanish (100 days) Open-pollinated. Long to intermediate day. A wonderful OP variety that makes large globe-shaped uniformly sweet bulbs. Will store great fresh, but will store up to 4 months with proper curing.

When You Order:

* When you see the star, this item and every other item in your order of Potatoes, Onions and Exotics qualifies for a volume discount. Orders over $100 deduct 5% Orders over $300 deduct 10% Orders over $600 deduct 15% Orders over $1200 deduct 20%
- Ginger and turmeric ship in early March, or as soon as weather permits.

**GINGER & TURMERIC**

Approx. 10-15 seed pieces per pound.

If you can't begin sprouting right away, ginger and turmeric stock can be stored for several weeks. At above 65°. Definitively start sprouting them by mid-April.

For New England, we recommend growing ginger and turmeric in hoophouses. They need the heat. To sprout your stock, spread 3’ of good potting soil in a crate, arrange rhizomes so they aren't touching, and add soil to cover by a few inches. Our seed ginger is already cut into planting sized pieces; for turmeric, snap off some of the larger “fingers” and plant the main rhizome with a few of the smaller “fingers” still attached. Keep the crate at 80° in summer, and keep soil moist but not water-logged. They are sensitive to overwatering, but most sprouting failures are due to low or fluctuating temperatures. After last frost, plant out at 5” apart, in a fertile 6" deep trench down a hill during the season. Harvest before frost.

These beautiful potatoes have unequalled flavor and culinary qualities.

**AmaRosa - Red skin, red flesh.** These plants cranked out such monster tubers we felt funny charging fingerling prices at market. Classically plump fingerlings with a unique skin shape with a scarlet red skin and creamy red flesh with excellent color retention, AmaRosa made the grade for high yields, and they’re tasty as heck. Leave the skins on when cooking, as they have a high vitamin C and mineral content. Good keepers and good sellers. Scab resistant, and also some resistance to late blight. PVP.

**Austrian Crescent - Yellow skin, pale yellow flesh.** As lovely as the rising crescent moon on a summer’s eve, with unearthly yields. Forgive fingers: some sources mention Austrian Crescent tubers as long as 10”. Also called kipfel, the German word for a croissant. Croissants have the butter baked in, but we recommend slathering your roasted fingerlings with butter. Combine with Magic Molly and AmaRosa for a rainbow potato salad. BACK!

**Banana - Yellow skin, yellow flesh.** Sometimes called Russian Banana. Nutty and waxy, Bananas are renowned for their heavy yields of giant fingers. Makes terrible smoothies, but you will spend nights dreaming of long strips of roasted Bananas, simmering in the crackles and pops of the lightest olive oil, with a slight crunch of sea salt and a dash of balsamic vinegar. Resistant to scab, but susceptible to late blight, leafroll and verticillium wilt.

**Banana Organic**

**French Fingerling - Dark rose-red skin, yellow flesh with pink lines.** This fine fingerling, a spad of lore and song, is more than just a fancy fad. You’ll want to pick these sweet little potatoes on the early side to fully revel in their tenderness, before they embark on their more awkward and bulky phase and develop growth cracks. The skin, though it softens easily in the packing shed, is worth the extra care, as it stays smooth to the touch, tender and awful juicy. The yellow flesh features a stunning pinkish webbing. Tall spreading plants with wide-set tubers. Resistant to leaf hopper and scab.

**French Fingerling Organic**

**La Ratte - Yellow-netted skin, yellow flesh.** The name translates to The Rat, which describes the shape well—they are plumper than most fingerlings—but belies their appetizing flavor! This little pet is versatile in the kitchen and the most consistent fingerling in shape and size. You’ll welcome these rosettes into your packing shed for their ease of sale and “perfect texture,” says Heron Breen. Kept in cold storage, La Ratte stores beautifully and maintains its fine quality to sustain you through the winter.

**Potato Bags**

Heavy paper bags for storing or marketing your own spuds. To avoid moisture build-up, 5# and 20# sizes have a mesh vent in front and 50# size has punched airholes.

**Burlap Bag**

Untreated, holds 50# of potatoes. Also works well in market displays: soak thoroughly to keep produce damp and cool.

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MORE FINGERLINGS

**Magic Molly** - Deep purple skin, deep purple flesh. This rockstar potato just won’t stop—pick them as sweet little fingerlings early or hold out for larger potatoes later in the season. A rich purple, so deep it’s almost black, from skin to center. Distinctive earthy flavor and pleasantly firm waxy texture. A fantastic addition to a dish of roasted mixed vegetables. Jan Jerolmack of Stonecipher Farm in Bowdoinham, ME, has Molly fans among his restaurant accounts; they incited a small riot after his Mollies had been bought up. Vigorous plants, high yields and few diseases. We love Magic Molly so much it inspired the creation of our 2017 cover art superhero. Magic Molly the superhero is invincible.

**Magic Molly Organic**
- 7140: B: 2# for $12.00
d: 25# for $80.00
- 7625: B: 2# for $9.00
d: 25# for $60.00

**Magic Molly Conventional**
- 7180: B: 2# for $8.00
d: 50# for $99.00
- 7628: B: 2# for $9.00
d: 25# for $60.00

**Pinto** - Red and yellow skin, yellow flesh. Don’t call Pinto a pony—this potato is a real workhorse. With striking bicolor skins, they practically sell themselves at market. High yields with up to 28 tubers per plant. You’ll think an Easter Bunny left you a sweet pile of yellow-spotted pink eggs when you harvest! Btery and decadent with a creamy texture. In our trials Pinto shows resistance to blight, drought and scab; the leaflepper didn’t bother it a bit. Bred by the University of Maine.

**Pinto Organic**
- 7142: B: 2# for $12.00
d: 25# for $80.00
- 7625: B: 2# for $9.00
d: 25# for $60.00

**Pinto Conventional**
- 7180: B: 2# for $8.00
d: 50# for $99.00
- 7628: B: 2# for $9.00
d: 25# for $60.00

**Red Thumb** - Red skin, pale red flesh. Standing up to early blight is no small task for any potato, not to mention the delicate fingerling class, but the Thumbs do it. Slice one in half at farmer’s market to show customers the unique flesh: cream streaked with a light red pigment. Dig early for that classic petite fingerling, or wait for skins to set to secure some lunkers.

**Red Thumb Organic**
- 7630: B: 2# for $9.00
d: 25# for $60.00

**Red Thumb Conventional**
- 7670: B: 2# for $5.00
d: 10# for $20.50

**Rose Finn Apple** - Pinkish-beige skin, light yellow flesh. An heirloom in this over-developed world of plant science, Rose Finn displays some of the prettiest hues of all the fingerlings. Waxy with a dreamy creaminess as unforgettable as its name. Watering unevenly may lead to branching. Susceptible to rhizoctonia, but resists scab—plus its top-notch flavor and appearance will always make it worth growing.

**Rose Finn Apple Organic**
- 7170: B: 2# for $12.00
d: 25# for $80.00
- 7635: B: 2# for $9.00
d: 25# for $60.00

**Turbo-Tuber** (Approx. 7-2-9, plus 2% Cu and 3.5% S) Magic Molly, our potato superhero, is the fastest girl in town; her jack-ed up hybrid hatchback runs on our high-test organic fertilizer, formulated to meet the nutrient requirements of potatoes. Blended in-house from fish meal, feather meal, soybean meal, sulfate of potash, dolomitic lime, pasteurized poultry manure and K-mag. On balanced soils, apply at 5#/25 row feet, 50#/250 row feet, or 200#/acre and work into the soil to planting depth. MOFGA

**Colorado Rose** - Not available in 2020.

**Dark Red Norland** - Dark red skin, white flesh. Great for new potatoes! For the best potato salad in the world, combine freshly dug young Norlands, homemade mayonnaise, and shivered garlic and fresh sage sifted in butter (plus coarse salt and cracked pepper to taste). Makes good home-fries, too. Easy-to-grow high-yielding early red. Medium-to-large plants with purple flowers. Fair storage. Resistant to growth cracks, early blight, hollow heart, scab and rhizoctonia. Dig before late blight is a concern.

**Dark Red Norland Organic**
- 7190: B: 2# for $8.00
d: 10# for $20.50
- 7670: B: 2# for $5.00
d: 10# for $11.25

**Natascha** - Yellow skin, yellow flesh. A higher-yielding alternative to Anumsha and Augusta. You’ll be delighted by the multitude of deep yellow, perfectly smooth and amazingly blemish-free potatoes that tumble from the hills at harvest. My favorite early yellow. Excellent flavor with smooth and creamy texture. I like them boiled and buttered, but they are also really nice and creamy whipped with an immersion blender. Resistant to scab, bruising, rhizoctonia, black leg, PVY and tuber rots. PVP.

**Natascha Organic**
- 7695: B: 2# for $5.00
d: 10# for $10.50

**Red Gold** - Pink skin with red eyes, yellow flesh. Red Gold will usher in the summer and knock out any spring seldrums. The bright gold flesh shines like the July sun under which you’ll be harvesting. One of the most stunning potatoes in our lineup. Plant close together for a ton of tasty little ovals or farther apart for a heavier yield. With creamy sweetness roasted or fried, Red Gold has a reputation for the hands-down best taste of all the early varieties. Not a great storer. Will stand up against too-wet soil and even some blight.

**Red Gold Organic**
- 7700: B: 2# for $5.00
d: 10# for $10.50

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**EARLY 65-80 days**

**Algonquin** - White skin, white flesh. Large smooth oval tubers size up early and are largely free from internal and external defects. High yielding and scab resistant. Our grower in New York says, “I’ve grown it for 11 years, and have never been disappointed with it, which is a rare quality for a potato. I don’t think you can go wrong with it.” Released by Cornell in 2017. The Algonquin people, native to southern Quebec and eastern Ontario, have a much more venerable history. Modern Algonquins have been politically active to defend their resources against commercial wild rice harvesting ventures, the lumber industry and mining companies. **PVP, NEW!**

**Algonquin Organic**
- 7640: B: 2# for $5.00
d: 10# for $10.50
- 50# for $29.00

**Chieftain** - Pinkish-red skin, white flesh. Rounded oblong tubers with pinkish-red and slightly netted skin. Shallow eyes for easy peeling. Matures later than most earlies. A Maine red-potato staple for our Aroostook growers, its floury fluffiness is complemented by heaping spoonfuls of butter, garlic and a generous pour of raw cream. Organic stock grown by the hardworking folks at Campbell Family Farm in Littleton, ME, who put their wholesome business practices and sturdy work ethic into high-quality organic seed. The Campbells aren’t too busy with their 600+ acres of potatoes to milk a family cow—they know spuds are better buttered. Medium spreading plant with lilac flowers. Scab, net necrosis, stem-end blushing and late blight resistant.

**Chieftain Organic**
- 7180: B: 2# for $8.00
d: 10# for $20.50
- 50# for $77.00

**Chieftain Conventional**
- 7650: B: 2# for $5.00
d: 10# for $10.50
- 50# for $22.00

**Dark Red Norland Conventional**
- 7190: B: 2# for $8.00
d: 10# for $20.50
- 50# for $77.00

**Great for new potatoes!**

**Dark Red Norland Organic**
- 7670: B: 2# for $5.00
d: 10# for $11.25
- 50# for $26.00

**Natascha - Yellow skin, yellow flesh.** A higher-yielding alternative to Anumsha and Augusta. You’ll be delighted by the multitude of deep yellow, perfectly smooth and amazingly blemish-free potatoes that tumble from the hills at harvest. My favorite early yellow. Excellent flavor with smooth and creamy texture. I like them boiled and buttered, but they are also really nice and creamy whipped with an immersion blender. Resistant to scab, bruising, rhizoctonia, black leg. PVP, NEW.

**Natascha Organic**
- 7695: B: 2# for $5.00
d: 10# for $10.50
- 50# for $35.00

**Red Gold - Pink skin with red eyes, yellow flesh.** Red Gold will usher in the summer and knock out any spring seldrums. The bright gold flesh shines like the July sun under which you’ll be harvesting. One of the most stunning potatoes in our lineup. Plant close together for a ton of tasty little ovals or farther apart for a heavier yield. With creamy sweetness roasted or fried, Red Gold has a reputation for the hands-down best taste of all the early varieties. Not a great storer. Will stand up against too-wet soil and even some blight.

**Red Gold Organic**
- 7700: B: 2# for $5.00
d: 10# for $10.50
- 50# for $31.00

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PVP stands for Plant Variety Protection Act. See page 4.
Redsen - Very bright red skin, white flesh. If you miss Sangre as much as we do, try Redsen, a cunning all-purpose early potato. Fry whole new Redsens in olive oil: the fluffy nuggets will accompany your July lobster bake beautifully. The best part? It’s highly resistant to race 0 late blight! Also moderately resistant to scab. Susceptible to fusarium. The tender skin bruises easily, so give them plenty of time to cure in the field; handle carefully during harvest and as you put them in storage. NEW! 7705 B: 2# for $5.00 C: 10# for $10.50 E: 50# for $29.00

Satina - Organic - Yellow skin, yellow flesh. They say farming leaves you wicked haggard, so polish up your style for city market with these stunningly chic Satinas. The soft buttery flesh and yellow skin are smooth as silk. Ian of Stonecipher Farm says, “This ain’t no Mickey D’s fry trash. Satinas are the sparkplug in our skillet.” When dug, each plant has one or two thick stalks with a string of large round tubers dangling beneath. Satina store well and are resistant to common scab. PVP.

7225 B: 2# for $8.00 C: 10# for $20.50 E: 50# for $56.00

Yukon Gem - Yellow skin with pink eyes, yellow flesh. A modern take on old familiar Yukon Gold, with higher yields and better PVP and scab resistances. Stocked with the latest in plant-vigor innovation, the Gem has surpassed its predecessor in popularity. In 2006, plant pathologists from the Agricultural Research Service in Aberdeen, ID, deemed Yukon Gem ready for the fresh market because of its resistance to costly infections of late blight and dry rot. Matures about 10 days later than Yukon Gold, but worth the wait. Late-blight resistant. PVP.

Yukon Gem Organic 7228 B: 2# for $8.00 C: 10# for $25.50 E: 50# for $97.00

Yukon Gem Conventional 7735 B: 2# for $5.00 C: 10# for $10.50 E: 50# for $22.00

Yukon Gold - Yellow buff skin with pink eyes, yellow flesh. For keeping it classic, you can’t beat Yukon Gold’s tasty butter flavor and marketable appearance. This Gold, bred to suit Idaho’s potato conditions, broke mainstream culture of just white potatoes and we are forever grateful. Yukons are susceptible to potato virus Y and late blight. Also infamous for poor emergence and low yields, which may be partly remedied by planting uncut seed. Yet aficionados of this classic claim its flavor surpasses that of the more utilitarian Yukon Gem. Released by AgCanada in 1980.

Yukon Gold Organic 7230 B: 3# for $8.00 C: 10# for $20.50 E: 50# for $58.00

Yukon Gold Conventional 7740 B: 2# for $5.00 C: 10# for $10.50 E: 50# for $22.00

Blue Gold - Organic - Blue skin, yellow flesh. Also known as Peter Wilcox and, although named for Peter C. Wilcox, a professor in the Spiritual and Pastoral Care Program at Loyola College, these yields are ungodly. Round sponge balls with stunning gold flesh proclaim large amounts of tubers with a sinfully flashy appearance. Lavender flowers. Tubers set high, so hill well. Space at 10–12”. Scab and nematode resistant, susceptible to a daunting degree of scurfs, wilts and blights.

7255 B: 2# for $8.00 C: 10# for $25.50 E: 50# for $97.00

Adirondack Blue - Blue skin, blue flesh. Maintains its color after boiling, roasting or frying. Walter de Jong and his potato-genetics buddies at Cornell released Addie Blue in 2003. They also developed and released modern all-stars Adirondack Red and Keuka Gold, all huge successes in the Northeast, promoting growth in the specialty potato market and providing decent prices for wholesale growers. This blue spud is packed with anthocyanins, powerful antioxidants that can lower risks of heart and neurological diseases. The plants are ostentatious with sprawling blue-tinted foliage. Although tuber dormancy is short and Blue is susceptible to scab, scurf and CPV, appearance is awfully festive. Note: storage life is short, so seed may be ugly when it arrives. Plant them anyway—odds are they’ll be just fine.

Adirondack Blue Organic 7240 B: 2# for $8.00 C: 10# for $25.50 E: 50# for $97.00

Adirondack Blue Conventional 7745 B: 2# for $5.00 C: 10# for $10.50 E: 50# for $35.00

Adirondack Red - Red skin, pinkish flesh. These rubies will have your cast iron glowing. Intense bright skin, moist firm flesh that’s rich in antioxidants, refuting those who knock potatoes’ nutritive qualities. Positive feedback from Stonecipher Farm was flattering but, alas, unprintable. Released by Cornell in 2008 to restore vigor to the red fresh potato scene and qualified as “heirlooms-to-be” by Gourmet. Resists scinning, hollow heart, internal defects and growth cracks.

Adirondack Red Organic 7245 B: 2# for $8.00 C: 10# for $22.50 E: 50# for $84.00

Adirondack Red Conventional 7750 B: 2# for $5.00 C: 10# for $10.50 E: 50# for $22.00

Adirondack Blue Organic 7240 B: 2# for $8.00 C: 10# for $25.50 E: 50# for $97.00

Adirondack Blue Conventional 7745 B: 2# for $5.00 C: 10# for $10.50 E: 50# for $35.00

Adirondack Red - Red skin, pinkish flesh. These rubies will have your cast iron glowing. Intense bright skin, moist firm flesh that’s rich in antioxidants, refuting those who knock potatoes’ nutritive qualities. Positive feedback from Stonecipher Farm was flattering but, alas, unprintable. Released by Cornell in 2008 to restore vigor to the red fresh potato scene and qualified as “heirlooms-to-be” by Gourmet. Resists scinning, hollow heart, internal defects and growth cracks.

Looking Ahead with 2020 Vision: Bryan O’Hara

Aktan spoke to Bryan O’Hara, an organic vegetable farmer in Lebanon, CT, and expert on no-till and Korean Natural Farming. Watch for his forthcoming book from Chelsea Green. Here is Aktan’s account of their conversation:

What are three changes you would like to see in food production?

After pointing out that many many things need to change, Bryan said that first he would like to see people valuing quality food again. He contrasted our country’s lack of cultural integrity with Europe’s stronger cultural connection to food production, where local demand does not allow industry to value efficiency and profit over traditional quality. (He used cheese-making in Europe as an example.) Once we establish this value base, Bryan proposed, our food-production systems will not be as susceptible to the whims of capitalism.

Second, Bryan demands food sovereignty: a government “that respects the right of all people to provide and consume the food of their choice.” Government goes to great lengths to control and regulate the food markets, mostly for the benefit of a few players. He gave the example of raw milk and talked about the fear factor government employs to justify regulations that consolidate power. Bryan went on to talk about a “must change.” We need “government policies that do not support and perpetuate the production of poisonous foods.” Of course, the subsidies that keep those foods cheap must also end. Pointing to the lack of “true-cost analysis” in the so-called free-market economy, Bryan touched on labor issues and talked about herbicides displacing an entire work force that “loved” crops. He proposed taxing synthetic materials and the use of machinery instead of taxing those who employ human labor.

How do we remediate degraded/contaminated landscapes and maintain the “organic” integrity of plants and animals we eat?

“Earth is ready to detoxify itself.” And according to Bryan, humans can greatly help with this by adopting/adapting earth-friendly farming practices. When soil is healthy, biologically active, and the natural systems are functioning properly, the abundant compounds can bind toxins and insulate the toxic materials from the chemical exchanges of living forms in the soil, therefore keeping them out of the cycling of elements. Bryan calls on us to figure out ways to enhance these natural processes at every level.

What will be the key features of a future garden and/or a small farm?

Bryan referred to F. H. King’s seminal book Farmers of Forty Centuries, which details the farming techniques of cultures of the Far East and portrays a way of life in which everything is re-used and recycled. Instead of giving specific features, Bryan prescribed a guideline with “an emphasis on effective and careful recycling of all organic materials of human life.” Going back to this way of growing food will become a necessity in the future because of its effectiveness and resilience.

How do we adapt to the rapid decline of animal species that humans depend on for food, especially pollinator insects?

“Bees are gone. Katydids are gone. There are no more sap moths in our sap buckets. Far fewer frogs singing at night.” After listing more die-offs that he personally has been taking note of in CT, Bryan characterized this shift in biodiversity as “Nature’s compassion.” He said that parts of Nature are “sacrificing themselves in order for humans to learn how to effectively function in a more balanced relationship with all the other species.” He concluded that achieving this balance will require nothing less than a “spiritual shift.”

What makes you hopeful?

Even though the “system” in place now, the model of exploitation and defiance, is “wiping out the ability of natural forces to keep feeding humans,” Bryan finds hope in the way people respond. He talked of his own experience at the farm and how practices such as “no-till” came from pressures of environmental change. Bryan predicts we will see a widespread return to small farms. We will see an abandonment of machinery, of systems of destruction, of reductionism. He hopes this will lead us to holism and openness. As a final note, Bryan gave a positive piece of advice: “Everybody help each other, on a personal basis. Build community and watch it ripple out.”

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Caribou Russet - Russeted skin, white flesh. It’s been more than 100 years since herds of woodland caribou grazed the state of Maine. At least we can still claim the potato. Named after the city of Caribou in Aroostook County, this 2015 UMaine release was bred for cool climates, which could be especially handy if we decide to follow those caribou herds up to Canada. Vigorous plants produce good yields of large oblong russet potatoes. Using organic practices, we’ve grown really big Caribou. Great mashed, fried or baked. Has an exceptionally low instance of hollow heart, a common problem of most russets. Moderately resistant to scab and verticillium wilt. PVP.

Caribou Organic
7259 B: 2# for $8.00 C: 10# for $20.50 E: 50# for $77.00

7765 B: 2# for $5.00 C: 10# for $10.50 E: 50# for $29.00

Carola - Yellow skin, yellow flesh. Fedco employees can agree on Carola as the best-tasting potato more than we can agree on anything else. These potatoes are rarely uniform but have that charming old-fashioned potato look. Firm and waxy, with flavor loved by all. Great prepared on the grill, wrapped in foil with sliced onion and sea salt. However, Carola isn’t the best performer in the patch—watch out for dreary weather that could wallop your Carolas with fungal blights. Decent scab resistance partially compensates for this weakness. Often fails winter virus test, so availability is unstable. Medium spreading plants with white flowers.

Carola Organic
7260 B: 2# for $8.00 C: 10# for $25.50 E: 50# for $97.00

Carola Conventional
7770 B: 2# for $5.00 C: 10# for $14.00 E: 50# for $45.00

Daisy Gold - Organic. Availability uncertain at press time. Check the web!

Gold Rush Russet - Organic - Russeted skin, white flesh. You’ll feel rich when you start filling your crates with these hulking tubers. A perfect baking potato, and it fries up like a champ, too. The discovery of a gold deposit in New England. In 2009, the strawberry Papaw, but fulfills the needs of 98% of the red-potato customers. Super-sweet moist flesh. Order your extra crates now to accommodate staggering yields to come. Excellent dormancy retention in winter storage. Scab resistant. Reddish-purple flowers, semi-upright dark green vines. Also known as NY-129.

7305 B: 2# for $8.00 C: 10# for $25.50 E: 50# for $97.00

7327 B: 2# for $8.00 C: 10# for $25.50 E: 50# for $97.00

Salem - Buff skin, white flesh. Midseason sister of Elba. Loved dearly by storage-crop connoisseur Tim Libby. Generously impressive yields on these plants will have your bushel baskets brimming with dependable all-purpose potatoes. They store well into the winter, and their roundish-oblong shape and earthy flavor make them an exceptional roasting potato. Bred at Cornell as NY-84 and released unofficially in Salem, NY. The plants emerge quickly and bulk up fast. Resistant to golden nematode.

7800 B: 2# for $5.00 C: 10# for $10.50 E: 50# for $22.00

7820 B: 2# for $5.00 C: 10# for $14.00 E: 50# for $45.00

7840 B: 2# for $5.00 C: 10# for $10.50 E: 50# for $29.00

Strawberry Papaw - Organic - Bright red skin, white flesh. Developed specifically for blight and scab resistance, the merit of these bright fuchsia gems goes beyond reliably healthy crops. Their flashy display is a fantastic addition to your potato cornucopia. With generally good yields and medium-to-large size, their flesh is firm, sweet and moist. Scab resistant. Becoming known for their vigorous nature and good storage. Also known as NY-136. PVP.

7327 B: 2# for $8.00 C: 10# for $25.50 E: 50# for $97.00

Vivaldi - Organic - Pale yellow skin, pale yellow flesh. This medium-early oval potato got a lot of press in the UK as a “slimming potato.” As some lab tests have shown it contains roughly three-quarters the calories and carbohydrates of the average potato. Fedco staff commented on its mildly sweet flavor and creamy velvety texture in a warehouse kitchen oven-fry bake-off; we found it worthy of honoring with a violin concerto, and certainly worthy of listing in our catalog. Holds shape well during cooking. High yields of large tubers, but little disease resistance. PVP.

7330 C: 10# for $25.50 E: 50# for $97.00

If you order more than 1000 lbs, download or call for our bulk price list.

When you see the star, this item and every other item in your order of Potatoes, Onions & Exotics qualifies for a volume discount.

Orders over $300 deduct 10%
Orders over $100 deduct 5%
Orders over $300 deduct 10%
Orders over $600 deduct 15%
Orders over $1200 deduct 20%

* Staple red potato.
* Clothing red potato.
* Medium-early russet.
* Firm and waxy, with flavor loved by all. Great prepared on the grill, wrapped in foil with sliced onion and sea salt. However, Carola isn’t the best performer in the patch—watch out for dreary weather that could wallop your Carolas with fungal blights. Decent scab resistance partially compensates for this weakness. Often fails winter virus test, so availability is unstable. Medium spreading plants with white flowers.

Orders over $100 deduct 5%
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Orders over $100 deduct 5%
Orders over $300 deduct 10%
Orders over $600 deduct 15%
Orders over $1200 deduct 20%

If you order more than 1000 lbs, download or call for our bulk price list.
LATE more than 90 days

Bintje - Yellow skin, yellow flesh. Or Miss Bintje, named after a pupil of the Dutch schoolteacher who released this variety in 1905. (Dutch pronunciation is something like BIN-tyeh, but it’s been Americanized to BEN-jee.) The most widely grown yellow-fleshed potato in the world because of its storability, prolific growth habits and adaptability to a wide range of soil types. Large clusters of smooth golden-fleshed tubers will appear beneath these quickly germinating, vigorous plants. Exquisite flavor; the Dutch know a thing or two about breeding desirable potatoes. Space at 16–18”.

7860  B: 2# for $5.00  C: 10# for $14.00  E: 50# for $45.00

Desiree - Rose skin, yellow flesh. She has a satiny rose-red skin and creamy yellow flesh with a distinct flavor. Bred in the Netherlands, these large and long oval tubers will satisfy. High yielding in fertile soil, the plants are rugged and will tolerate drought, also show resistance to late blight, potato virus Y and skin spot. Moderately susceptible to scab. Late-blight resistant.

7865  B: 2# for $5.00  C: 10# for $14.00  E: 50# for $45.00

Elba - Organic - Buff skin, white flesh. Elba’s dreamy yield will strike out your summer’s carried-over debts. Delicious Elba keeps solidly all winter long, despite slow spring emergence. Dan Corey, who grows much of our unique conventional potato stock says, “Elba is hard to screw up, even for the organic guys.” Apparently he had so much faith in our organic growers’ abilities that he stopped growing this variety, so we are offering only organic seed this year. Bulky standard round white storage potatoes can survive in less-than-optimal conditions. First pick for avoiding fungal blights, including scab and even late blight. Late-blight resistant.

7345  B: 2# for $8.00  C: 10# for $20.50  E: 50# for $77.00

Genesee - Bright white skin, white flesh. Mid-sized round to oblong tubers, largely free from internal and external defects. Slow to emerge and slow to mature, but worth the wait: the flesh is as creamy as the ale produced by Genesee Brewing Company in Rochester, NY. 1992 Cornell release. Resistant to early blight and scab. NEW!

7875  B: 2# for $5.00  C: 10# for $10.50  E: 50# for $22.00

German Butterball - Lightly russeted yellow skin, yellow flesh. These plants produce delectable buttery balls that are hands-down the best-tasting roasting potato in the winter. With flesh just dry enough for a fry or a hash, the Butterball has high yields, good storage qualities and shows some virus resistance. Susceptible to rhizoctonia. Large prostrate vines with few white flowers.

German Butterball Organic

7360  B: 2# for $8.00  C: 10# for $20.50  E: 50# for $58.00

German Butterball Conventional

7880  B: 2# for $5.00  C: 10# for $14.00  E: 50# for $45.00

Green Mountain - Buff skin, white flesh. This 1885 heirloom hails from the Green Mountains of Vermont but was made famous by Maine farmers. A true potato lover’s potato, baked or boiled. Fedco customer Norman Blake planted a 2-lb bag last season as a favor to his uncle. “He said that his father, my grandfather, esteemed them above all others and was quite vocal about it...I bought a 50 lb bag of wollastonite and sprinkled it into the rows as I went along and the Green Mountains, which have a reputation for low yield, did commend the fertilizer but I still got a small bag of good enough potatoes, over 3 lbs, and that was after discarding some that I had damaged during hilling. My uncle stated that he had never seen so many large Green Mountains as well.

I used a lot of composted horse manure, but I do every year. The only thing different was the wollastonite.” Medium-sized round tubers with unparalleled fluffiness and an authentic earthy flavor that doesn’t fade in long storage. An excellent storage variety. Resistant to fusarium storage rot, black leg and verticillium wilt. Susceptible to viral diseases.

7890  B: 2# for $5.00  C: 10# for $10.50  E: 50# for $22.00

Katahdin - Buff skin, white flesh. Released in 1993 by the USDA and Maine, it is the standard to which all storage potatoes are compared. Mount Katahdin (Maine’s tallest peak at 5,267 feet) is famous for its vertigo-inducing “Knife Edge” trail. Whether you’re hungry from hiking or gardening, set a kitchen knife’s edge to Katahdin the potato and fill your belly with its warm comforting goodness. Very well suited to a Maine growing season, spreading plants can produce some lunkers. The tubers tend towards the soil’s surface, so hill well. Resistant to mild mosaic, but not spindle tuber or leafroll. Medium-to-large spreading plant with many large light purple flowers.

7900  B: 2# for $5.00  C: 10# for $10.50  E: 50# for $22.00

Lehigh - Yellow skin, light yellow flesh. A late-season yellow that produces high yields of large tubers. Released jointly in 2007 by Cornell, U Penn and UMaine and named after Lehigh County in PA, where the field trials were conducted. Has produced consistently high yields across diverse growing regions and conditions. Excellent storage potential. Holds its shape well when boiled, making it ideal for soups and stews, but also great mashed or fried. Resistant to blackspot bruise.

7905  B: 2# for $5.00  C: 10# for $10.50  E: 50# for $35.00

Red Pontiac - Red skin, white flesh. Red Pontiacs yield large round potatoes with attractive red skin and succulent white flesh that keeps moist all winter long. These multipurpose potatoes are great for the fresh market as they show few defects and continue to store. The plants tolerate drought but are susceptible to most common potato diseases.

7910  B: 2# for $5.00  C: 10# for $10.50  E: 50# for $22.00

Russet Burbank - Russet skin, white flesh. Known to most as the Idaho Potato, the dry mealy texture makes it a trusty old favorite. A great baking or mashing potato; you’ll have the whole winter and spring to experiment in the kitchen. Its reliably high yields mature late in the season, and the plants show resistance to scab, black leg and fusarium. This dependable standard requires heavy feeding and regular moisture for exceptional performance.

Russet Burbank Organic

7370  B: 2# for $9.00  C: 10# for $25.50  E: 50# for $97.00

Russet Burbank Conventional

7930  B: 2# for $5.00  C: 10# for $10.50  E: 50# for $26.00

Potato Collections

Having trouble deciding which variety to choose? We put together collections to help. We choose the varieties in the spring when we better know about availability, and we guarantee a diverse selection in every collection. All varieties will be individually packaged and labeled. We might even include one that is not listed in the catalog.

Specialty Organics A well-rounded spud medley from our favorite organic growers covers the seasonal potato spectrum. We’ll choose 5 varieties to provide early and late, reds, yellows and whites. Taste the difference that organic production can make. 2# of each variety.

7080  A: 10# for $28.50

Fantastic Fingerlings A sparkling tapas plate including 3 diverse varieties of gourmet potatoes. If you find a favorite, you can grow it next year. Sample the many colors and shapes that these tasty cuties provide. 2# of each variety.

7085  A: 6# for $24.75

Classic Keepers Yes, we like to eat potatoes during the growing season, but most importantly, we must feast through the winter. This collection of 5 time-tested winter-storage potatoes will keep your stove crackling and bellies full right through spring parsnip digging. Reds, yellows and whites for full baskets in your root cellar. 2# of each variety.

7090  A: 10# for $17.50

Potato Sampler Encouraged by writer Joan Dye Gussow, we’ve created a collection for limited space and expansive palate. This collection of 3 varieties includes 2# each of an early, midseason and fingerling potato. “It never ceases to amaze me what even a small piece of land lovingly tended can produce,” Gussow writes in This Organic Life: Confessions of a Suburban Homesteader.

7095  A: 6# for $15.00

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### POTATOES AT A GLANCE

<table>
<thead>
<tr>
<th>Variety</th>
<th>OG</th>
<th>CS</th>
<th>Maturity</th>
<th>Skin Color</th>
<th>Flesh Color</th>
<th>Shape</th>
<th>Texture</th>
<th>Yield</th>
<th>Storage</th>
<th>Scab Resistance</th>
<th>Certifier</th>
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**Chart Key**

- **OG**: Organically Grown
- **CS**: Conventional Seed
- **Maturity**: VE = very early, E = early, M = midseason, L = late, VL = very late
- **Shape**: R = round, L = long, Ob = oblong, Ov = oval, F = fingerling
- **Yield**: M = medium, H = high
- **Storage**: F = fair, G = good, E = excellent
- **Scab Resistance**: M = moderate, G = good, H = high
- **State**: ME = Maine, CO = Colorado, NY = New York, WV = West Virginia

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**SCATTERSEED PROJECT**

Will Bonsall moved to Industry, ME, in 1971 to live simply and self-sufficiently. He runs Khadigah Farm with his partner Molly Thorkildsen. Will’s Scatterseed Project hosts and preserves thousands of genetically diverse crops well-suited to Maine’s seasons and soils. The project focuses on a few vegetable families and makes a valiant effort to keep viable a healthy selection of genetics. One of Will’s main focuses is clonally propagated tubers with more than 700 varieties of potatoes and the most extensive Jerusalem artichoke collection in North America. Scatterseed is beyond heroic, maintaining 1200 pea varieties as well as other legumes: chickpeas, fava and runnerbeans.

Because two-season, or biennial, crops are hard to overwinter or store in our Maine climate, there are few growers in New England saving seed for crops such as rutabagas, leeks or turnips. However, Will tends a magnificent collection of these as well, concentrating on those crops that excel in our challenging climate.

To round out his collection and to emphasize self-sufficiency, Will plans to add what he considers the easier crops to his seed-saving work, like beans, tomatoes and grains. The vital work of seed-saving doesn’t leave much room or time for raising market crops. Will earns little revenue from his crusade. Scatterseed may be the only place on the planet where some of these varieties are still alive. To learn about Will’s growing methods, check out his recent book: *Will Bonsall’s Essential Guide to Radical, Self-Reliant Gardening* (9819 in the book section.)
GROWING POTATOES

Upon Arrival
Inspect your order as soon as it arrives. Seed potatoes may not look appetizing: that’s ok! Sprouting, shriveling, wrinkles and minor blemishes are normal and will not affect the performance of your potato patch. If your seed potatoes are mushy, weeping or very moldy, please contact us at ogs@fedcoseeds.com. If you are not going to plant within two weeks, store seed in a dark cool (around 40˚) fairly humid place. Do not remove growing sprouts; these are your new plants.

Chitting or Green Sprouting
You may use chitting to encourage early growth, speed development of marketable tubers, and perhaps increase yields. Warm tubers to 65˚ in the dark for about two weeks, then spread them out with most of the eyes facing up in a warm place (60˚-70˚) with medium light intensity for about two weeks. This stimulates strong stubby sprouts at the bud end that are not easily broken off.

Soil Preparation
Potatoes grow in any well-drained fertile soil. Work in compost or aged manure, or try our house-blended 8315 Turbo-Tuber fertilizer, specially formulated to meet the needs of the potato plant. Using uncomposted manure, lime or wood ash the year of planting will increase the incidence of scab. Turn new ground the year before and plant with a rye/vetch cover crop. Rotate potatoes (and other Solanaceae family members: tomatoes, peppers and eggplants) with other plant families in at least 3-year or, preferably, a 4-year rotation.

Cutting Seed
Small tubers planted whole are less sensitive to seed piece decay than cut pieces. You can cut large tubers into pieces of 2 or more, about the size of an egg, with at least two eyes. Many varieties have eyes clustered at one end, so be sure to distribute eyes evenly when cutting. Fingerling eyes spiral the length of the tuber so you may cut them into discs or wedges. Consider treating cut seed with 8173 Myco Seed Treatment. To reduce the risk of seed piece decay, either cut and plant in one operation or condition the cut seed pieces at 55-60˚ and 90% humidity for 3-4 days. Covering pieces with damp burlap bags or towels is a way to maintain humidity levels.

Spud Pests
Like most crops, potatoes are affected by various insects and diseases. The Colorado potato beetle and the potato leafhopper are the most damaging insects. Some diseases such as late blight (see right) can also be harmful; others are mostly cosmetic, like common scab. Leafhopper damage, or hopperburn, can be mistaken for late blight. Consult your local Cooperative Extension office for help with spud problems.

Colorado Potato Beetle Control
Here are several steps that help in the battle against CPB.
Soil health - Healthy soil produces healthy plants, and healthy plants experience less insect and disease pressure.
Crop rotation - Rotating plant families in 3-5 year rotations really helps to control insect and disease problems.
Field scouting - In home gardens, as plants emerge, handpick beetles and larvae; drop them into a container of soapy water. Look under the leaves for orange egg masses and squash them.

Planting later than normal - Takes plant emergence out of sync with beetles’ cycle and helps reduce CPB’s early egg laying.
Spraying - If your area is too large for handpicking, you could consider:
  • Surround (8720), a kaolin clay formulation, forms a barrier on leaves.
  • Entrust (8759 on our website), a spinosad insecticide active on several orders of insects.
  • Monterey Garden Spray (8762), a spinosad for home gardens.
  • Pyganic (8765) or Bug Buster-O (8768), broad-spectrum pyrethrum insecticides.
Walking the field - Several days after spraying, handpick larvae that the spray missed.

As always, vigilance is the watchword. Please send us your feedback: what worked or didn’t work for you?

If you are trying to identify a pest, or need to send an insect or plant sample to a lab for diagnosis, go to extension.umn.edu/ipm/ppdl/, a useful website of the plant disease diagnostic laboratory, or contact your local Cooperative Extension Service.

Certified-organic Growers
We list several products for certified-organic growers but be aware that no pest- or disease-control product is allowable without filing a plan for its use under the NOP. See pages 109 and 137 for more information.

Planting
Plant when the soil is 55-60˚ and dry enough to work easily, about when dandelions bloom. Planting in cooler soil slows emergence and increases the chance of seed piece decay. Planting in hot dry soil also increases the risk of seed piece decay. Plant in furrows 4-6˚ deep, in rows that allow for your style of hilling. Space new potatoes and fingerlings at 8” for maximum tuber set. Space later-season varieties at 10-12” for maximum size. One pound of seed will usually plant 5-8 row feet, depending on the variety; 10# will usually plant 50 row feet. 2 oz seed pieces 12” apart with 40” row spacing, requires approximately 1600# (or 1000# fingerlings) per acre.

Cultivation and Hilling
Cultivate shallowly as needed during early growth. Hill when plants reach 6” and again at 12-15”. After the second hilling, plants will whiten and outcompete weeds. Don’t cover plants completely when hilliing. Be gentle so as not to damage the roots. Hilling gives the plants room to develop potatoes between the seed piece and the soil surface; it also warms the roots, stimulating growth. Mulching plants after the second hilling helps to retain soil moisture, control weeds and reduce incidence of sunburn.

Irrigation
Potato plants are sensitive to small changes in soil moisture because of their shallow (12-15”) root systems. Tuber yield and size are directly related to the amount of water available during two critical growth stages: tuber initiation and tuber bulking. Tuber initiation is a 10-14 day period when tubers form at stolon tips. For most varieties, the end of this stage coincides with early flowering. Tuber bulking follows and continues until plants are mature. Lack of water tends to increase incidence and severity of scab, and will affect yield and overall size of the potatoes. If growth cracks, hollow heart and second growth. Ensure 1” of water weekly from plant emergence until two weeks before harvest.

Harvest and Storage
Early harvest or “robbing the plant” can be done anytime you can find potatoes, approximately 60 days after planting or 30 days after flowering. These are new potatoes to be eaten; they will not store well.

Potato plants are mature when the vines start to senesce, die back and fall over. You may cut, mow, flame-kill or allow them to die naturally. Leave tubers in the ground for 14-21 days after the vines are dead before digging to give the skin time to “set,” and to prevent transmission of blight spores from foliage to tubers. Harvest in cool dry weather if possible. After a brief drying, out of direct sunlight, lightly brush off excess dirt but don’t wash potatoes intended for storage. Hold at 55-60˚ for several weeks to allow harvest injuries and bruising to heal; then store only sound tubers at 38-40˚ with 85-90% relative humidity in complete darkness.

Yields
An average yield is 10# harvested to 1# planted (10:1). Less than 6:1 probably indicates a problem, likely caused by low fertility, lack of water, or excessive disease or insect pressure. Yields as high as 20:1 are exceptional, but can be achieved.

Late Blight
Late blight is a fungal disease that attacks the foliage, fruit and tubers of tomatoes and potatoes. The fungus Phytophthora infestans (genus translates as “plant destroyer”) flourishes in cool, wet conditions and can wipe out robust plants. Traveling by air (though it can be seed-borne in potatoes as well), the spores swiftly proliferate in wet conditions between 60˚ and 80˚. Infected plants develop greyish-black lesions on leaves and stems, often accompanied by fuzzy white fungal growth. Late uncontrolled, the blight can spread to the tubers as well.

Here are a few tips for healthy crops:
  • Plant only seed that is certified disease-free (that’s us).
  • Consider planting late-blight resistant varieties. If a variety shows field resistance to late blight, we mention it in the description.
  • Consider beginning the season with preventive measures. Regalia (8693), formulated with an extract from giant kowtweed, induces systemic resistance to Phytophthora and other pathogens. With translaminal action, spraying the tops of leaves extends coverage to the bottoms as well. Spray every 7-14 days to protect new growth. Cease (8710) and Actinovate (8702) colonize leaf surfaces with beneficial bacteria that inhibit the growth of predatory fungus. Also consider Monterey Complete Disease Control (8709). Cueva copper soap (8675 on our website) can be applied as a preventative spray.
  • As a last resort, if lesions appear, apply Badge X2 copper hydroxide (8681 on our website).
  • Avoid overhead irrigation just before dusk, as prolonged wet vegetation is a prime target for the blight.
  • Hill potatoes well to reduce the transmission of infection from leaf to tuber. Growing potatoes in plastic mulch may help.
  • Do not compost any infected plant material. Freezing kills spores; be sure plant tissue is thoroughly frozen. The best method to sterilize your field for next year may be to leave sick plants on the surface to freeze.

Stay up-to-date by watching MOFGA’s bulletins (Go to mofga.org, choose Publications, then Pest Reports) or contact your local Cooperative Extension Service for more information.

PO POTATOES

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### FARM SEED AT A GLANCE

<table>
<thead>
<tr>
<th>Item Type</th>
<th>Best Uses</th>
<th>Planting Time</th>
<th>Optimum pH</th>
<th>Seeding Rate</th>
<th>Nitrogen Fixation</th>
<th>Organic Matter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alfalfa, all types</td>
<td>hay, pasture, N-fix, OM, bees</td>
<td>3+ weeks before FF</td>
<td>6.5-7.0</td>
<td>15-25 sq ft</td>
<td>high</td>
<td>medium</td>
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<tr>
<td>B&amp;B Mix</td>
<td>WC, OM</td>
<td>Early Summer</td>
<td>6.0-7.5</td>
<td>25-50 sq ft</td>
<td>high</td>
<td>medium</td>
</tr>
<tr>
<td>Winter Wheat</td>
<td>WC, food, SC-N, feed</td>
<td>Spring, soil at least 55°F</td>
<td>6.0-7.5</td>
<td>100-125 sq ft</td>
<td>high</td>
<td>medium</td>
</tr>
<tr>
<td>Bell Bean</td>
<td>N-fix, OM, food, feed</td>
<td>Spring or Fall</td>
<td>6.0-7.0</td>
<td>150-200#</td>
<td>high</td>
<td>medium</td>
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<tr>
<td>BMR Sorghum/Sudangrass</td>
<td>soil over 60°F</td>
<td>6.0-7.5</td>
<td>30-150#</td>
<td>medium</td>
<td>low</td>
<td></td>
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<tr>
<td>Buckwheat, common</td>
<td>food, bees</td>
<td>80-90 days before FF</td>
<td>6.0-6.5</td>
<td>40-60#</td>
<td>low</td>
<td>medium</td>
</tr>
<tr>
<td>Chicory, Forage pasture</td>
<td>WC, SC-P</td>
<td>LF to 4 weeks before FF</td>
<td>6.0-6.5</td>
<td>30-150#</td>
<td>medium</td>
<td>low</td>
</tr>
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<td>Clover, Forage pasture</td>
<td>Soil over 55°F</td>
<td>5.5-7.5</td>
<td>1/4#</td>
<td>80-125#</td>
<td>low</td>
<td>medium</td>
</tr>
<tr>
<td>Clover, Yosemite Sweet</td>
<td>N-fix, OM, bees</td>
<td>Spring &amp; Summer</td>
<td>6.0-8.0</td>
<td>2-10#</td>
<td>high</td>
<td>medium</td>
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<tr>
<td>Corn, all types</td>
<td>feed, silage, food</td>
<td>Soil over 60°F</td>
<td>6.0-7.0</td>
<td>15-20#</td>
<td>high</td>
<td>medium</td>
</tr>
<tr>
<td>CR Lawn Mix</td>
<td>lawn, orchard groundcover</td>
<td>LF to MS</td>
<td>6.0-7.0</td>
<td>100-150#</td>
<td>medium</td>
<td>low</td>
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<tr>
<td>Magic Carpet Mix</td>
<td>OM, WC, bees, SC, EC</td>
<td>Early to Mid-Spring</td>
<td>6.0-7.0</td>
<td>1/2#</td>
<td>high</td>
<td>medium</td>
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<tr>
<td>Millet, Japanese</td>
<td>WC, OM, silage, hay, pasture</td>
<td>2 weeks before LF, to MS</td>
<td>5.5-6.0</td>
<td>25-50#</td>
<td>high</td>
<td>medium</td>
</tr>
<tr>
<td>Millet, Pearl</td>
<td>OM, SC, silage, hay, pasture</td>
<td>2 weeks before LF, to MS</td>
<td>5.5-6.0</td>
<td>2-10#</td>
<td>high</td>
<td>medium</td>
</tr>
<tr>
<td>Mustard</td>
<td>PC, SC</td>
<td>Spring to FF</td>
<td>3.5-8.3</td>
<td>15-25#</td>
<td>medium</td>
<td>low</td>
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<tr>
<td>NOFA Cocktail</td>
<td>OM, SC, WC</td>
<td>MS to FF</td>
<td>5.5-7.5</td>
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<tr>
<td>Oats, all types</td>
<td>WC, OM, straw, feed</td>
<td>Soil over 50°F, Spring to FF</td>
<td>5.5-6.5</td>
<td>100-150#</td>
<td>medium</td>
<td>high</td>
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<tr>
<td>Orchard Grass</td>
<td>pasture, hay</td>
<td>Late Winter to Late Summer</td>
<td>5.8-7.5</td>
<td>1/2#</td>
<td>high</td>
<td>medium</td>
</tr>
<tr>
<td>Pasture Mix</td>
<td>pasture</td>
<td>Mid-Spring to Late Summer</td>
<td>6.0-7.0</td>
<td>40-50#</td>
<td>low</td>
<td>high</td>
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<tr>
<td>Pea, Field/Forage</td>
<td>pasture, silage, N-fix, WC</td>
<td>Spring, soil over 45°F</td>
<td>6.0-7.0</td>
<td>2-5#</td>
<td>high</td>
<td>medium</td>
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<tr>
<td>PVO Mix</td>
<td>OM, N-fix, WC</td>
<td>Mid-Spring to Late Summer</td>
<td>6.0-7.0</td>
<td>150-200#</td>
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<td>medium</td>
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<tr>
<td>Radish, Tillage</td>
<td>SC, EC</td>
<td>Late Summer to LF</td>
<td>6.5-7.5</td>
<td>5-10#</td>
<td>medium</td>
<td>high</td>
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<tr>
<td>Rye, Winter</td>
<td>OM, WC, SC, food, EC</td>
<td>2 weeks before to 2 weeks after FF</td>
<td>5.0-7.0</td>
<td>100-200#</td>
<td>low</td>
<td>high</td>
</tr>
<tr>
<td>Rye/Vetch Mix</td>
<td>N-fix, OM, WC, EC</td>
<td>2 weeks before FF to FF</td>
<td>6.0-7.0</td>
<td>75-100#</td>
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<td>low</td>
</tr>
<tr>
<td>Ryegrass, Annual</td>
<td>OM, WC, EC, SC-N</td>
<td>Soil over 50°F</td>
<td>6.0-7.0</td>
<td>15-50#</td>
<td>high</td>
<td>medium</td>
</tr>
<tr>
<td>Ryegrass, Perennial</td>
<td>pasture, OM, EC, SC-N</td>
<td>2 weeks before LF, to FF</td>
<td>5.2-8.0</td>
<td>30-60#</td>
<td>high</td>
<td>medium</td>
</tr>
<tr>
<td>Sunn Hemp</td>
<td>OM, N-fix, PC</td>
<td>Soil over 60°F, to Late Summer</td>
<td>5.0-7.5</td>
<td>30-50#</td>
<td>medium</td>
<td>medium</td>
</tr>
<tr>
<td>Timothy</td>
<td>hay, pasture</td>
<td>Mid-Spring to Late Summer</td>
<td>5.7-9.0</td>
<td>10-15#</td>
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<td>low</td>
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<tr>
<td>Vetch, Hairless</td>
<td>N-fix</td>
<td>Mid-Spring to FF</td>
<td>6.0-7.0</td>
<td>20-30#</td>
<td>low</td>
<td>medium</td>
</tr>
<tr>
<td>Wheat, Spring</td>
<td>OM, food</td>
<td>Soil over 50°F</td>
<td>6.0-7.0</td>
<td>100-125#</td>
<td>medium</td>
<td>medium</td>
</tr>
<tr>
<td>Wheat, Winter</td>
<td>OM, WC, food, feed</td>
<td>2 weeks before FF to FF</td>
<td>6.0-7.0</td>
<td>100-125#</td>
<td>medium</td>
<td>medium</td>
</tr>
</tbody>
</table>

**Chart Key:**
- **ff =** and following

- **bees:** provides bee forage for honey production
- **feed:** produces a grain or bean suitable for animal consumption
- **food:** produces a grain or bean suitable for human consumption
- **hay:** maintains nutritional quality when dried
- **lawn:** suitable for heavy traffic areas, withstands mowing
- **N-fix:** green manure fixes nitrogen, available to subsequent crops when tilled into soil
- **OM:** organic matter—soil builder; green manure produces fibrous biomass and improves soil structure
- **PC:** pest control—reduces insect, disease, or nematode pressure
- **SC:** scavenger crop—quickly takes up nutrients from soil, preventing their loss to erosion or leaching
- **N:** nitrogen, P: phosphorus
- **WC:** weed control—physically out-competes or chemically inhibits weeds

**Planting Time:**
- **LF =** Last Frost in spring
- **FF =** First Frost in autumn
- **MS =** Midsummer

**Seeding rates are based on drilled seed in organically managed fields. Seeding rates vary depending on crop use, timeliness of planting, method of seeding, weed pressure, soil conditions, seed size, and whether the crop is planted alone or in a mix.**

- If you need help figuring out what seeding rate to use, please give us a call.
- For most seed, use the smaller amount in mixes and the larger amount solo.
- For corn, use the smaller amount for grain and the larger amount for forage.
- For broadcasting, increase 20–25%.
- For use in precision planters, decrease 10–50%.
- For late planting, increase 20–50%.
- For forage or weed control uses, decrease 30–50%.

**Nitrogen Fixation:** Rhizobial bacteria form symbiotic relationships specifically with the roots of leguminous crops to convert atmospheric nitrogen (which is unavailable to plants) to ammonia and nitrates (which are available to plants). Legumes can often furnish nearly all of their own nitrogen needs this way—exactly how much depends on the species, the soil structure, and weather conditions. If the crop is removed from the field, the fixed nitrogen is removed as well, with little or no residual added nitrogen remaining in the soil; however, if the crop is turned in and incorporated into the soil, the fixed nitrogen is added to the soil and is available in slow-release forms to the following crop. Legumes have species varying capacity to fix atmospheric nitrogen.

**Organic Matter, or Biomass:** These ratings reflect relative quantities of fibrous biomass. Succulent biomass makes a rapid contribution to available soil nutrients but does not contribute to the long-term carbon content of the soil. Fibrous biomass helps build humus, which improves soil texture and increases nutrient-holding capacity.

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**Our costs fluctuate with the weather, transportation costs and availability. We will make every effort to honor the prices published in the catalog, but if we have to purchase additional inventory we will adjust prices accordingly. See our website for the most current prices or call 207-426-9900 if you have questions.**

fedcoseeds.com

Where variety is not stated, plant characteristics may vary because we purchase seed from multiple suppliers based on price and availability.
**Pollinator-Friendly Crops**
Planting flowering crops on "idle" ground is a gift to your bees. Choosing a number of different cover crops that bloom at different times of the season will ensure your bees have a constant source of food. Consider alfalfa, buckwheat, clovers, mustard, forage radish and vetch.

**Lawn Seed**
You can't quite plant your entire yard to vegetables, herbs, flowers, berries and fruit trees, because then there would be no place for your reclining lawn chair and bocce tournaments. Try 8061 CR Lawn Mix and Dutch white clover.

**Barley, Robust - Organic**
*Hordeum vulgare*
Annual spring grain. Up to 3' high. Moderately frost-hardy. A widely grown 6-row barley with resistance to spot blotch. Tolerates drought and alkaline or heavy soils. Does not tolerate wet or acidic soils. May be planted later than other spring-sown small grains and maintain good yields. Seed from early May to mid-June at 100#/per acre, 3#/1000 per sq ft.

**Bell Beans - Organic**
*Vicia faba*
Annual or winter annual legume. Up to 5' high. Frost-hardy. Bell beans (aka small-seeded fava beans) are like 8133 Sump Hemp’s tough cousin—the one with the full sleeve tattoos who hikes the Appalachian trail in the winter. Like Sunn Hemp, bell beans boast unusual versatility — by fix nitrogen and building generous amounts of carbonaceous biomass. But while Sunn Hemp is a tropical beauty who crumples at the first sign of frost, hardy bell beans will happily sprout in half-frozen soil and may keep growing even after the first snows. Stiff-stalked plants with fluffy glabrous leaves and pretty purple-tinged white flowers. Tolerates a wide range of soil conditions, though sensitive to heat and drought at flowering. Raw seed; with 8155 Garden Combo or 8161 Field Pea/Vetch inoculant. Seed 2" deep at 150-200#/acre, 5#/1000 sq ft.

**Organic following an item name means the seed is certified organically grown. All our seed is free of fungicide treatments.**
Buckwheat, Common - Organic  *Fagopyrum esculentum* Annual broadleaf. Up to 4' high. Frost-sensitive. Large-seeded Japanese buckwheat with short maturity will tolerate most conditions, including soil pH as low as 4.8. Bees like its abundant nectar. As a cover crop, seed at 80–100#/acre, 3#/1000 sq ft. As a grain crop, seed at 40–80#/acre, 1#/1000 sq ft.  

**As cover crop:** Excellent smother crop. Short maturity allows 2–3 crops per season. Should be mowed short or tilled in before it sets seeds. Responds well tofertility, holding it for subsequent crops. Makes calcium and phosphorus available for the next crop. Loosens clay soils. Responds well to fertility, holding it for subsequent crops. Makes calcium and phosphorus available for the next crop. Loosens clay soils. As a cover crop, it can double the number of blueberries per acre the following year. 

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**T. r.* Rivendell White Clover - Organic  T. r.* Perennial legume. Up to 9". Vigorous clover for cover cropping and bee forage. Stunning crimson spikes make good cutflowers. Biennial, often but not always winter-kill. Seed coated with Surestand an OMRI-approved coating. **

**Alice White Clover**  
Trifolium spp. (except *Yellow Sweet Clover, Melilotus officinalis*)  
The *Trifolium* genus is home to more than 300 species, most of which are native to the northern hemisphere (a few pop up in Africa and South America). Clover is versatile, performs well in Maine’s cool humid climate and acidic soils, fixes atmospheric nitrogen, and attracts pollinators—what more could you ask for? The taller red clovers are better hay plants, as they have a more erect habit and greater biomass, and they dry more easily. Red clover blossoms, fresh or dried, make one of our favorite teas. White clover performs better in pastures and lawns, as they tolerate close mowing (or nibbling) and heavy traffic; it attracts pollinators. Mixed with grasses, clover is a top choice for bee forage. No matter what kind of clover you choose, be sure to plant plenty to increase your chances of finding those lucky four-lobed specimens: botanists estimate 1 in 10,000 clover leaves exhibit this trait! Clover may be planted from late winter through early fall. Seedlings slow to establish and will benefit from a nurse crop of oats. If a crop of annual weeds comes up with your clover, all is not lost: keep the plot regularly mowed and by midseason the clover will have outcompeted the weeds. See our website for additional information about each variety. Most clovers are pre-inoculated, clay-coated with an OMRI-approved coating.

**Crimson Clover**  
T. incarnatum  
Tender biennial legume. Up to 18". Vigorous clover for cover cropping and bee forage. Stunng crimson spikes make good cutflowers. Biennial, often but not always winter-kill. Seed coated with Surestand an OMRI-approved coating. **

**Freedom Red Clover**  
T. pratense  
Short-lived perennial legume. Up to 9". Vigorous red clover for cover cropping and bee forage. Seed coated with Pre-Vail™ inoculant OMRI-listed. Seed at 10#/acre alone, 5#/acre in mixes, 1/4#/1000 sq ft. **

**Mammoth Red Clover - Organic**  
T. p.  
Perennial legume. Up to 6". The lowest-growing red clover available. **

**Medium Red Clover - Organic**  
T. p.  
Short-lived perennial legume. Up to 24". Red clover for underseeding or grazing. Seed coated with Surestand Hydrogreen inoculant (OMRI-listed). Seed 10–20#/acre, 1/4#/per 1000 sq ft. **

**Alice White Clover**  
T. repens  
Perennial legume. Up to 12". Vigorous large-leaved white clover. Readily self-seeds. Seed coated with Organic Nitro-Coat® inoculant (OMRI-listed). Frost-seed at 4–5#/acre, or 2–3# when mixed with grasses, 1/4#/1000 sq ft. **

**Dutch White Clover**  
T. r.  
Perennial legume. Up to 6'. The lowest-growing white clover. Recommended for lawns and living mulch. Shade-tolerant. Seed coated with Pre-Vail™ inoculant (OMRI-listed). Seed at 5–10#/acre, 1/4#/1000 sq ft. **

**Rivendell White Clover - Organic**  
T. r.  
Perennial legume. Up to 9". Small-leaved white clover establishes quickly and withstands traffic and close mowing. Seed coated with Apex™ Green inoculant (OMRI-listed). Seed early at 5–10#/acre, 1/4#/per 1000 sq ft. **

**Yellow Sweet Clover - Organic**  
*Melilotus officinalis*  
Biennial legume. Up to 6. Vigorous taprooted, thick succulent clover for cover cropping and bee forage. Seed coated with Pre-Vail™ inoculant (OMRI-listed). Seed at 10–20#/acre, 1/8#/1000 sq ft. **

**Forage Chicory**  
*Cichorium intybus* Perennial broadleaf. Up to 18" (flower stalks up to 6'). Tap-rooted plant with bright blue flowers suited to well-drained moderately acidic soils. Well-managed stands may persist 5 years or longer, but also valuable in annual stands for pasture or green chop. Chicory is established best by drilling 1/2" deep or broadcasting, then cultivating, into a well-prepared seedbed; it may also be no-till drilled or fould-seeded on established pastures early in the season. Begin grazing when the plant is 8–10" high; graze down to 1–2". Seed at #/acre alone, or #/acre in mixes, 1/4#/1000 sq ft. **

**As annual or perennial forage:** Very high digestibility and protein levels up to 50% higher than alfalfa. Digestibility is reduced if plants are allowed to bolt, but the flowers are very attractive! Research shows reduced parasite loads in animals fed or pastured on chicory. **

<table>
<thead>
<tr>
<th>Item</th>
<th>Price</th>
<th>Description</th>
</tr>
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<tbody>
<tr>
<td>Alfa/Clover Inoculant</td>
<td>$30.00</td>
<td>50# per 1000 sq ft.</td>
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<tr>
<td>Freedom Red Clover</td>
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<tr>
<td>Medium Red Clover</td>
<td>$25.00</td>
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<tr>
<td>Alice White Clover</td>
<td>$25.00</td>
<td>10# per 1000 sq ft.</td>
</tr>
<tr>
<td>Dutch White Clover</td>
<td>$25.00</td>
<td>10# per 1000 sq ft.</td>
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</table>
Wapsie Valley Corn - Organic Zea mays Annual grass. Up to 9’. Frost-sensitive. 85 days to mature grain. Open-pollinated dent corn suitable for forage or grain. This heirloom variety dates back to 1830. Produces both coppery red and dark yellow ears. A favorite with Maine’s organic dairy farmers, from Two Loons Farm in South China to Sheepscot Valley Farm in Whitefield. We tried other corn varieties and Wapsie bested all the competition in our sales numbers. Plant as soon as the soil is warm (at least 60°). While corn will establish poorly in cool soil, late planting decreases yields. Corn requires high fertility (plant after legumes in your crop rotation) and does not like to have wet feet. It competes poorly with weeds and requires frequent cultivation to perform well. Overseed white clover or annual ryegrass after the final cultivation to reduce the risk of erosion and discourage late-germinating weeds.

Corn has gotten a bad reputation because of the environmental damage caused by millions of acres of heavily sprayed corn monocropped in middle America, and the damage to public health caused by out-of-control corn subsidies. But you can grow corn responsibly in an organic rotation; in moderation, it is a valuable part of the human diet; and it can be a boon to livestock growers seeking to meet their animals energy needs on limited acreage.

As food: Starchy dent corn grinds easily to a yellow cornmeal flecked with bran. Great foradmixed dry breads, soups, and sweet treats. When ground into meal, Wapsie corn has tested as high as 10.75%. Open-pollinated corn has 25% more protein than hybrid corn. Wapsie grain and Wapsie silage are available. Wapsie silage is a high-yielding and reliable silage corn. For grain, open-pollinated corn has 25% more protein than hybrid corn. Wapsie grain has tested as high as 10.75%. Seed at 20#/acre. 8067 B: 2# for $8.75 C: 10# for $35.00 E: 50# for $105.00

Wapsie, Pearl Pennisetum glaucum Annual grass. Up to 6’. Frost sensitive. Taller than Japanese millet but with a tighter bunching habit. Tolerates drought and sandy soils. Seed when soil is 60° or warmer at 25–50#/acre, 1#/1000 sq ft.

As a cover crop: Somewhat slower to establish than Japanese millet, and the bunching habit makes it less competitive with weeds, but if organic matter is your goal then pearl millet has a higher biomass production potential over the course of the season.

As annual forage: More productive and more digestible than Japanese millet. Suitable for grazing, silage and dry hay. Harvest before boot stage, at 18–24” high, and leave ample stubble to ensure vigorous regrowth. 8068 B: 2# for $8.00 C: 10# for $31.00 E: 50# for $100.00

Mustard Brassica juncea or Sinapis alba Annual broadleaf. Up to 5’. Frost resistant. Does not tolerate drought. Best as a full-planted cover crop to retain nutrients, suppress weeds, and improve water penetration. Produces large amounts of biomass containing high levels of glucosinates that break down into compounds toxic to nematodes and soil-borne pathogens. A recent lot came in bags featuring a cartoon knight dubbed “The Nematode Slayer.” When plants achieve full flower, chop finely and incorporate into the soil. Allow 2 weeks for decomposition before planting a new crop. Plant 1½” deep in a firm moist bed at 15–25#/acre, 1–2#/1000 sq ft. Note: We cannot ship this item to Oregon’s Willamette Valley. 8070 A: 0.5# (0#) for $5.75 B: 2# for $8.75 C: 10# for $31.50 E: 50# for $110.00

Magic Carpet Mix You told us your dreams, and we designed this ten-way clover-heavy mix as a soil-building living mulch for use under tall-growing competitive crops. Could also be used for other crops if kept neatly trimmed. Suitable in raised beds, containers and high tunnels. Expect a lush carpet of nitrogen-fixing legumes studded with grasses and forbs to contribute biomass and support microbial diversity in your soil. No need for Aladdin’s lamp: all components have some degree of shade tolerance. May be used for a single season, however most components are perennial and the remainder will often self-sow. Whether you are growing tomatoes or “tomatoes,” take this mix for a ride. Seed at 25#/acre, 1#/per 1000 sq ft. 8062 A: 0.5# (0#) for $4.20 B: 2# (0#) for $16.75 C: 10# for $79.50 E: 50# for $265.00

NOFA Cover Crop Cocktail - Organic Complex cover crop blends are trending on the organic ag scene; so what’s all the buzz about? Just as a well-mixed cocktail balances a variety of flavor profiles to create something that is greater than the sum of its parts, planting a well-designed blend of multiple cover crops can accomplish more than planting a single species. With annuals and biennials, grasses and legumes and broadleaves, and roots of all shapes and sizes, this blend mimics natural diversity and encourages a flourishing and balanced microbial population. Another advantage of diverse blends is that if your field condition is not conducive to one or two species in the blend, the others will help take up the slack. Best for long rotations: plant in August or September and allow to grow to midsummer of next season. For shorter windows, try B&B Summer Mix or Vetch/Winter Rye Mix instead.

Eight components including peas, winter grains, spring grains, clover, tillage radish and hairy vetch. Seed at 50–75#/acre or 1–2#/1000 sq ft. 8073 B: 2# for $11.75 C: 10# for $45.00 E: 50# for $145.00

fedoseeds.com 121
OATS Avena spp.

Oats are a real workhorse of a cover crop. They are inexpensive to sow, they’re not fussy about their soil, they build generous amounts of carbonaceous biomass, they’re competitive with weeds, they love cool weather but tolerate warm weather, they get along well with legumes like peas and clover in mixes, and they die over the winter (at least in New England—they’re hardy to 15°) so they don’t cause the spring headache that rye does.

As if their prowess as a cover crop weren’t enough, the grain may be used as food or feed, and oat straw makes some of the finest, softest mulch you’ll ever have the pleasure to kneel on. Try planting oats in early August and then planting your garlic or feed, and oat straw makes some of the finest, softest mulch you’ll ever have the pleasure to kneel on. Try planting oats in early August and then planting your garlic beds will be already mulched come spring. And there’s more! Herbalists favor milky oats (oat heads harvested when they are still green and the kernels exude a milky substance when squeezed) as a gentle restorative tonic.

As cover crop: Exceptionally vigorous seedlings and lush leafy growth make this oat variety especially competitive with weeds. Faster seedling growth than BMR or millet, though these crops will eventually outstrip Everleaf in height. Will build more biomass than common oats.

As forage: If cut in the early boot stage (when the flower head is only just detectable inside the leaf sheath) the hay can achieve protein levels of 19% and the plant will regrow for a second crop. Everleaf oats harvested at the soft-dough stage (when the kernel is developing but still soft enough to cut with a fingernail) achieved dry-matter yields of nearly 4 tons per acre in a 2010 University of Vermont trial. Makes excellent bedding straw. Also suitable for grazing.

Hulless Oats - Organic A. nuda Annual grass. Up to 4’. Moderately frost resistant. Most oats have a clinging hull that requires industrial-grade milling to render them suitable for human consumption. Hulless oats are not, in fact, hulless, but as in wheat the hull sheds easily during the normal threshing process; for best results, delay harvest until the crop is fully mature. May be used as a cover crop like other oats, but hulless varieties tend to be somewhat less vigorous than common oats. Plant in early spring at 100#/acre, 3#/1000 sq ft.

As food grain: To cook, soak in water; what little hull remains will float.

Peas, Field - Organic Pisum sativum var. arvense Annual legume. Up to 40°. Also called Forage Peas. Moderately frost tolerant. Likes cool moist conditions. Will grow in most soil types but prefers well-drained loams. It has come to our attention that some customers are purchasing our field peas for pea-shoot production: not all of the varieties we purchase are suitable for this, so please let us know if you have special plans for your pea seed and we’ll do our best to accommodate! Raw seed: use with 8155 Garden Combo Inoculant or 8161 Field Pea/Vetch Inoculant. For cover crop, seed at 100–200#/acre, 2#/1000 sq ft. For forage, seed early in the season, alone at 200#/acre, 5#/1000 sq ft, or 100#/acre, 2#/1000 sq ft, with oats or barley at 50#/acre, 3#/1000 sq ft.

As cover crop: A weed-smothering workhorse soil builder. Sow alone or with a nurse crop such as oats to help it stand.

As annual forage: Peas have excellent palatability and are highly digestible. Hanne Tierney of Cornerstone Farm conducted a 2009 SARE trial in which she reduced by 50% the grain fed out to hogs pastured on a barley and field-pea mix; the pastured hogs achieved an average slaughter weight not significantly different from the control group, although there was greater variation. Some potential for dry hay as well, though filled pods can be difficult to dry down. Peas may be seeded alone, but a companion crop of small grains will help to prevent lodging.

Use weight in parentheses (#) to calculate shipping charge.
PVO Soil-Building Seed Mix - Organic 71% field peas, 15% common oats, 14% hairy vetch. A superior soil-building cover crop seed mix. For springtime planting: allow for 60–90 days of growth. The oats come up first and are pulled down by the peas, which are eventually pulled down by the smothering vetch. Weeds don’t stand a chance in that jungle. 4' mat of vegetation should be disked or mowed and incorporated in autumn. Seed at 150–200#/acre, 5#/1000 sq ft.

Radish, Tillage - Organic Raphanus sativus var. niger Annual broadleaf. Up to 14". Moderately frost resistant. A cover crop Daikon radish bred for improved taproot performance. Penetrates hardpan and loosens soil down to 30" or beyond. Excellent scavenger crop: takes up available nutrients in the soil and prevents nutrient losses to leaching or runoff. Germinates quickly. Suppresses weeds if planted thickly. Winterkill occurs when several consecutive nights are in the low 20s. Leave plants in the ground all winter and into spring: roots decompose leaving large holes that fill with rainwater, eliminating runoff and improving soil drainage. Decomposed root and leaf matter release nutrients and increase microbial activity in the soil, contributing to increased yields in crops that follow. Plant in early September for maximum benefit. Can be planted as late as October in mid-Atlantic states. Do not plant to increased yields in crops that follow. Plant in early September for maximum benefit. Can be planted as late as October in mid-Atlantic states. Do not plant to increased yields in crops that follow. Plant in early September for maximum benefit. Can be planted as late as October in mid-Atlantic states. Do not plant to increased yields in crops that follow. Plant in early September for maximum benefit. Can be planted as late as October in mid-Atlantic states. Do not plant:

Hairy Vetch/Winter Rye Mix - Organic 78% rye and 22% vetch. Superb cover crop mix for fall planting where mechanical tillage is available in the spring. Excellent choice for a field that will not be planted the following spring. Mow after flowering to kill the plants, then incorporate by tilling, and allow 3–4 weeks for the roes to decompose before replanting. Produces abundant biomass, adds nitrogen to the soil and suppresses weeds. The rye acts as a nurse crop for the vetch, protecting it from frost damage and providing support for the vines, making mowing much easier. Growers working with hand tools should consider a blend of oats and peas instead. Seed at 75–100#/acre, 2–3#/1000 sq ft.

Using Cover Crops to Troubleshoot in the Garden

<table>
<thead>
<tr>
<th>Problem</th>
<th>Easy Cover-Crop Solutions</th>
</tr>
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<tbody>
<tr>
<td>Poor soil drainage or hardpan</td>
<td>Tillage Radish bores drainage holes into the soil with its powerful taproot.</td>
</tr>
<tr>
<td>Low organic matter</td>
<td>BMR Sorghum/Sudangrass produces more biomass than any other cover crop. It is frost-sensitive. Choose cold-tolerant Everleaf Oats for fall or spring planting.</td>
</tr>
<tr>
<td>Low soil nitrogen</td>
<td>Alfalfa and Yellow Sweet Clover are the most capable fixers of atmospheric nitrogen among all the legumes. Be sure to inoculate your seed!</td>
</tr>
<tr>
<td>High weed population</td>
<td>Winter Rye has vigorous growth and is a strong allelopath on small weed seeds. Buckwheat has vigorous seedling growth and competes well against warm-season weeds.</td>
</tr>
<tr>
<td>Soil erosion</td>
<td>Annual Ryegrass quickly forms a dense root mat that holds soil in place.</td>
</tr>
<tr>
<td>Poor pollination</td>
<td>Dutch White Clover can bloom among your crops all season to feed and attract pollinators.</td>
</tr>
<tr>
<td>Soil-borne fungal disease</td>
<td>Mustard residues released isothiocyanates, which may inhibit the growth of Fusarium and other soil-borne fungi.</td>
</tr>
<tr>
<td>Root-knot nematodes</td>
<td>Sunn Hemp roots exude natural nematicides that can significantly reduce nematode populations in the short term.</td>
</tr>
<tr>
<td>Nutrient leaching</td>
<td>Tillage Radish scavenges unused soluble nitrogen from deep in the soil and holds it for later crops.</td>
</tr>
</tbody>
</table>

Rye, Winter - Organic Secale cereale Winter annual grass. Up to 5'. Extremely frost hardy, adaptable and competitive. For cover crop, seed at 100–200#/acre, 5–8#/1000 sq ft. For grain, seed in late September or early October at 100–125#/acre, 10–15#/1000 sq ft.

As cover crop: The most popular winter cover in the Northeast. Deep extensive roots help prevent compaction and improve soil tilth. Turn under early in spring before it gets out of hand. Vigorous growth is best controlled with mechanical tillage: if you are working with hand tools, we recommend oats for fall planting instead. Decomposed rye residue exudes allelopathic compounds that inhibit weed growth; may also inhibit germination and growth of subsequent crops, so incorporate into soil at least 3 weeks before planting. This affects direct-seeded crops with small seeds more than large-seeded crops and transplants.

As food grain: Thresholds easily and produces a flour suitable for blending with wheat in breads. Matures earlier than winter wheat. Susceptible to ergot contamination, so exercise caution and have grain tested before consuming: hallucinations from ergot poisoning are believed to have resulted in the Salem witch trials.

| 8109 | 2# for $5.00 | 10# for $16.50 | 50# for $55.00 |

Hairy Vetch/Winter Rye Mix - Organic 78% rye and 22% vetch. Superb cover crop mix for fall planting where mechanical tillage is available in the spring. Excellent choice for a field that will not be planted the following spring. Mow after flowering to kill the plants, then incorporate by tilling, and allow 3–4 weeks for the rye to decompose before replanting. Produces abundant biomass, adds nitrogen to the soil and suppresses weeds. The rye acts as a nurse crop for the vetch, protecting it from frost damage and providing support for the vines, making mowing much easier. Growers working with hand tools should consider a blend of oats and peas instead. Seed at 75–100#/acre, 2–3#/1000 sq ft.

| 8112 | 2# for $7.00 | 10# for $45.00 | 50# for $150.00 |

Ryegrass, Annual - Organic Lolium multiflorum Annual or winter annual grass. Up to 4'. Exceedingly frost hardy. Widely adaptable to a variety of soils and to all but the hottest climates. Annual rye will establish quickly in cool wet weather, providing a dense stand early in spring before it gets out of hand. Vigorous growth is best controlled with mechanical tillage: if you are working with hand tools, we recommend oats for fall planting instead. Decomposed rye residue exudes allelopathic compounds that inhibit weed growth; may also inhibit germination and growth of subsequent crops, so incorporate into soil at least 3 weeks before planting. This affects direct-seeded crops with small seeds more than large-seeded crops and transplants.

As food grain: Thresholds easily and produces a flour suitable for blending with wheat in breads. Matures earlier than winter wheat. Susceptible to ergot contamination, so exercise caution and have grain tested before consuming: hallucinations from ergot poisoning are believed to have resulted in the Salem witch trials.

| 8109 | 2# for $5.00 | 10# for $16.50 | 50# for $55.00 |

Ryegrass, Perennial - Organic L. perenne Short-lived perennial grass. Up to 2'. Often used in grass seed mixtures. Extremely palatable forage grass with good early spring and fall growth in the perennial pasture; slows in the heat of summer. Germinates quickly and grows rapidly, suppressing weeds and allowing slower-growing companions to establish themselves. Perennial ryegrass holds up under heavy traffic and has good insect and disease resistance. Seed at 15–50#/acre, 1–2#/1000 sq ft.

| 8124 | 2# for $25.00 | 10# for $100.00 | 50# for $350.00 |

Sunn Hemp Crotalaria juncea Annual legume. Up to 6'. Frost sensitive. This rock star cover crop builds organic matter, fixes atmospheric nitrogen, controls harmful nematodes, and still finds time to be beautiful. Grows vigorously in good conditions, but is unlikely to reach its full size potential up here in the tundra. Effectively shades out weeds. In just 60 days it can produce more than 5000#/acre biomass and fix 140#/acre of nitrogen. At this stage it will have just started producing its lovely yellow flowers. Used as a fiber crop in India since prehistoric times; with enough heat, plants can grow 6' high with stems 2" thick! Some varieties are suitable for livestock forage, but our seed comes to us "variety not stated" so we do not recommend it for that purpose. Tolerates dry conditions. Raw seed; inoculate with

| 8155 | Guard-N Garden Combo Inoculant. | 123 |

If shipping weight in parentheses is (0#), the item qualifies for free shipping!
Timothy - Organic *P*leum *p*ran*ens*e Perennial grass. Up to 3'. A popular perennial hay species that provides good yields, resists lodging and is easily cut and cured. Harvest early, in the boot stage, to avoid stemmy hay. Leave plenty of stubble; timothy stores its energy reserves for regrowth in a corn at the base of the stem, which may be damaged by close cutting or heavy grazing. Very winter hardy. Best adapted to clay or loam soils with lots of moisture. Does not tolerate heat or drought. In the fall, seed alone or with winter wheat; in spring, seed with red clover or alfalfa. Grows to 3’/. Seed at a rate of 12-15#/acre alone or 10#/acre when mixed. 1/2#/1000 sq ft.

**8136** B: 2# for $15.00 C: 10# for $60.00 E: 50# for $180.00 **

**Vetch, Hairy - Organic** *V*icia *v*illos*asa* subsp. *villosa* Annual or winter annual legume. Up to 2’ high; vines up to 8’ long. Moderately frost resistant. Vigorous cover crop generates copious amounts of organic matter. Excellent for erosion control. *Medicago* is its common name, especially in the home garden; the tangled vines can clog even large mowers. Later planting allows for better control. Sometimes it will overwinter in Maine, sometimes it will die back; you have to prepare to deal with it in the spring. Use a flail mower or scythe to cut it back in fall and incorporate the stubble in the spring before the plant becomes unmanageable. Tolerates acidic soils and low fertility, but not poor drainage. Raw seed; use with inoculant. Store inoculant in a cool, dry place out of direct sunlight. We recommend using fresh inoculant each time you plant a legume even if you have planted inoculated seed in the same spot before. Fresh inoculant ensures an immediate increase in bacterial populations. When you are ready to put the seed in the ground, moisten it with water, pour the inoculant over it and mix. Plant immediately if planting by hand; by machine, you'll need to let seed dry to prevent clogging, but plant as soon as the seed has dried.

Our inoculants do not contain genetically modified materials.

Guard-N Garden Combination Inoculant For peas, beans, limas, fava beans, soybeans, sweet peas, cowpeas, lentils and peanuts. OMRI

**8155** A: treats 8# (0#) for $6.00

**8156** B: treats 50# (0#) for $10.00

**N-Dure Alfalfa and Clover Inoculant** For alfalfa, sweet clover and all the *Trifolium* clovers we list. OMRI

**8158** A: treats 50# (0#) for $8.50

**Field Pea and Vetch Inoculant** Use for our PVO soil-building mix and wheat/rye mix. Also treats peas, lentils, fava beans. MOFGA

**8161** A: treats 50# (0#) for $8.50

**Humic Acids SP** A dry soluble powder with humic acid concentration of 85%. Derived from the mineral leonardite. Please see below for the manifold functions of humic acids in the soil. Best used as a foliar feed in combination with **8170** Fulvic Acid, the other soluble component of humus. Can also be applied directly to roots or in the soil before seeding or planting. Humic acids are only soluble in alkaline diluents, so test the pH of your solution before applying. Caution: Higher than recommended concentrations of humic substances in soil can be inhibitory to plant growth. Don’t overdo it! See chart on page 128 for application rates. MOFGA

**8167** A: 1# (0#) for $11.50 B: 55# for $339.00

**Humic acids** are the wild-card molecules of soil physics and chemistry, performing complex functions by way of several different electrical and chemical reactions. Both powerful chelators and bind-all stabilizers, humic acids can prevent leaching of trace minerals into subsoil and increase uptake rate of micronutrients. They neutralize soil pH and reduce the toxicity of heavy metals. With a water-holding capacity of seven times their volume, they contribute greatly to soil structure and indirectly buffer soil temperature. They stimulate growth of foliage and roots significantly. Humic acids also have the ability to retain soil carbon for more than 1,000 years, especially in conjunction with farming practices that prevent their decomposition, such as minimal or no tillage, cover cropping and mulching. These same practices increase the microbial populations responsible for new humus formation and cycling.

**Fulvic Acid Liquid** Fulvic acid is a powerful antioxidant and chelator: one molecule can transport 60 or more minerals into plant cells for a more efficient and effective fertilization program. Beneficial to plants growing in low-light conditions. Consider using in combination with **8167** Humic Acids. Unlike humic acids, fulvic acids are soluble at any pH. 2% fulvic acid water-extracted from leonardite and filtered through a 200-mesh screen to eliminate clogging of drip tape and sprayers. See chart on page 128 for application rates. MOFGA

**8170** A: 1 gal (10#) for $50.00 B: 2.5 gal (25#) for $85.00

**Myco Seed Treat** A blend of microorganisms and mycorrhizal fungi to provide protection and growth enhancement for potatoes, corn, legumes, grasses and vegetables. Highly recommended if you cut your seed potatoes or corn to get your corn and beans in the ground during a chilly spring. 1–2 oz treats 100# of potato seed pieces, 4–8 oz/100# of other seed. MOFGA

**8173** A: 1 oz (#) for $7.75 B: 1# (0#) for $67.50
BioOrganics™ Micronized Endomycorrhizal Inoculant: Mycorrhizae form beneficial relationships with the roots of most plant species; they boost plant growth by improving the roots’ ability to take up nutrients, water, and oxygen, and by improving soil structure. The world of beneficial microbial products is vast, with innovations and acquisitions: this formulation comes from a smaller independent company that promises never to sell out. We can only hope! Contains a blend of 9 top types of endomycorrhizal spores (Glomus aggregatum, G. etunicatum, G. claroideum, G. deserticola, G. intraradices, G. pallidaria, G. fasciculatum, G. desertorum, and Paraglomus brasiliense.). Spore count guarantee is a minimum of 30 spores per cubic centimeter. Water-soluble formula may be applied as a drench to turf or perennial plantings. Use 1 Tbsp in 1 gal water per 30 sq ft. May also be blended into potting soils at 2 Tbsp/sq ft and sprinkled into planting rows at a rate of 1 tsp per linear ft. Do not use with fertilizers high in soluble phosphorus or with soil-drench fungicides. *OMRI NEW!*

8175 A: 1# (24) for $49.00

MycoApply Endo/Ecto: Nine species of endomycorrhizal fungi (30,000 endomycorrhizal propagules per lb), 7 species of ectomycorrhizal fungi (140,000 mycorrhizal propagules per lb) and 3 species of beneficial bacteria in a base of slow-release 3-1-1 organic fertilizer. About 95% of plant species form beneficial relationships with at least one of these microorganisms. Mycorrhizal filaments expand total root mass by up to 50 times; the larger surface area increases plants’ access to nutrients, water and oxygen. Compounds produced by mycorrhize bind soil particles into clumps, which improves porosity to encourage water penetration, root growth and aeration. Add to seedbeds when sowing, work into the soil around your trees and shrubs, or incorporate into soil mix for container-grown plants to boost root growth, nutrient uptake, and the health of your plants and soils. When seeding use 1 tsp/l; in beds mix in 2# per 100 sq ft. When transplanting bare-root trees, use 1 oz/inch of stem caliber. For container planting, use 1 oz per gallon of pot capacity. For restoring fields, broadcast 40#/acre before or during planting. A-size MOFGA; B-size OMRI.

8176 A: 1# (0#) for $24.75

8176 B: 40# for $580.00

Mammam P: Active Microbials Nutrient Liberator: Invented by a team of Colorado State University PhD soil microbiologists with a passion for soil health and sustainable agriculture. They used directed microbial phenotyping to create a concentrated blend of Pseudomonas putida, Comamonas testosteroni, Citrobacter freundii and Enterobacter cloacae, which act as tiny bioterrorists, constantly emitting enzymes that liberate soil-bound phosphorus and micronutrients. Cannabis growers using Mammam P see bud yields 16% higher than in untreated plants, as well as stronger plants less susceptible to lodging. Use may be restricted to the bloom stage, but for best results use throughout the growth cycle (even during flowering). Also useful after field applications of Calphos or Tennessee Brown Phosphate to speed phosphorus release. Mix at 0.6 mL/gallon water: 120 mL bottle treats 12 plants from clone to harvest; 500 mL treats 50 plants. *This is a live product: color changes and sediment are normal.* It’s a bit stinky but will help you grow more stinky buds. As they say in the distinctively scented paper-mill towns around here, “It smells like money.” *OMRI NEW!*

8180 A: 120 mL (0#) for $50.00

8180 B: 500 mL (0#) for $150.00

Dr. Higa’s Original EM-1: Microbial Inoculant Concentrated Effective Microorganisms®. Active microbial life in the soil and on plants is a better solution than synthetic chemical fertilizers. A liquid combination of yeasts, actinomycetes and two kinds of bacteria, photosynthetic and lactic, which promotes plant health and growth and improves nutrient absorption and soil fertility. Endomycorrhiza formation (“activation”) of EM-1 increases the volume of microbes, but you can also just use it straight out of the bottle. The late Adam Tomash sprayed his tomatoes several times with activated EM-1 and they made it into September with no significant blight damage. Instructions for activating EM-1 can be found at fedcoseeds.com/sex (search for “EM-1”). Our cannabis-growing friends can’t do without it. *OMRI NEW!*

8185 A: quart (3#) for $35.00

8185 B: gal (10#) for $100.00

Recommended uses for “activated” EM-1:
• As a component of the Holistic Orchard Spray (see p. 136).
• As a drench for transplants: make a 4% solution (1 part activated EM-1 to 24 parts water) and apply it to the furrow or hole.
• As a foliar spray: use 1/2–3 gal/acre or 4–9 lbs/1000 sq ft, mixed with enough water to provide coverage.
• As a soil treatment: apply 40 gal/acre over the course of a year.
• To help break down crop residue: spray 1–5 gal/acre on fields after harvest.
• To add compost to speed up the breakdown and digestion of plant material.

Essential® Plus 1-0-1: Derived from potassium humate, amino acids, enzymes, simple and complex carbohydrates, vitamins, kelp extracts, hydrolyzed organic proteins, a natural wetting agent and natural bio-stimulators. Designed to stimulate root-hair growth for improved plant vigor and nutrient uptake. Increases seed coat permeability, improving germination rates and speeding germination time even in seeds that are difficult to germinate. Popular for rooting clones: a safe and natural alternative to IBA or NAA. Reduces transplant shock in plants of all kinds. Also gaining traction with lawn-care companies to keep new growth even in drought conditions. See chart on page 128 for application rates. *OMRI*

8190 A: quart (3#) for $22.50

BioNutrients™ Soluble AG: (8-1-9) Provides a quick boost of plant nutrients fortified by humic acid and kelp extract plus 671 billion beneficial bacteria endospores (including two strains of Bacillus subtilis, plus B. amyloliquefaciens, B. licheniformis and B. pumilus) and 90 billion yeast spores per lb. Contains a yucca-based wetting agent that encourages absorption. Suitable for all crops. Especially popular with tomato growers. See chart on page 128 for application rates. *WSDA*

8192 A: 8 oz (0#) for $3.75

Monster Plant Mojo: (4-4-0.5) We were devastated by the demise of well-loved MPM (Microbial Plant Mix) foliar fertilizer, the proprietary blend of a manufacturer who’s closed shop. As a close substitute, we recommend applying this new product in conjunction with activated EM-1. Contains fish hydrolysate, kelp extract, humic and fulvic acid, and a dash of chilean nitrate to boost the nitrogen levels for rapid vegetative growth. Chilean nitrate has a shandy reputation (because it is mined and high in soluble salts), but it sure gets the job done. Pending additional rule-making, certified organic operators using Chilean nitrate that demonstrate they’re using it in a way that maintains or improves the natural resources of the operation (including soil and water quality) and complies with nutrient and soil fertigation requirements. Dilute 2–4 oz per gal of water for fertigation, or 2 oz/gal for foliar feeding; apply monthly. Avoid foliar applications in the heat of the day. Do not store open. *OMRI NEW!*

8189 A: 1 gal (10#) for $25.00

8189 B: 5 gal (50#) for $100.00

Looking Ahead with 2020 Vision: Dawson Julia

Alice interviewed Dawson Julia, CEO of East Coast CBDs LLC, in Unity, ME; a founding member of MOFGA’s “Certified Clean Cannabis” program, and administrator of the Maine Cannabis Coalition.

*Where do you see the cannabis industry heading in the next 20 years?*

“I see a lot of Walmart-style cannabis businesses lining up to do business in Maine. We use regulatory processes to restrict small-business competition. Our small cannabis farmers will need to build a strong grassroots union to counter that. But high quality cannabis will win the consumer every time, and the highest quality is usually grown by small craft growers. Small craft beer is doing it in Maine and small craft cannabis is positioned to do the same—if we can keep the regulations affordable.

*What are some opportunities and challenges that the emerging legal cannabis industry holds for independent growers?*

Maine’s hemp program is a huge opportunity for the small grower. The regulations and fees are reasonable and the opportunity to retail direct from farm to shelf is very real. You can sell in almost every state and US hemp sales are forecasted to go from $590 million in 2017 to $22 billion by 2022. Bulk, requiring a CBD content of at least 10%, is also much in demand.

The biggest challenge will be keeping CBD/THC ownership out of the hands of Big Pharma or Big Tobacco/Alcohol.

*Natural soils? Supersoil in containers? Or hydroponic? Why?*

We focus on microbial and root uptake. We make lactic acid bacteria with rice, make [compost] teas and propagate live willow tree root microbials. We use small amounts of organic nutrients and save money compared to using premixed fertilizers and soils. Outside of one or two tea feedings per plant cycle we only water our plants.

In one sense, cannabis growers are just another kind of farmer. Yet it’s a very different industry from food agriculture. What are some parallels and differences you see between food and growing cannabis?

Corn, rye, and even wheat are sometimes grown for alcohol production, making these crops some of the deadliest in our country. But it’s the non-legal cannabis plant that has the stigma attached to it! Plus we’re farming a Schedule 1 drug, according to the Feds. Unlike the corn farmer, we are heavily taxed, limited as to what we can do, and why we can do it, and qualified for no federal subsidies.

All farmers share the universal passion to pass down knowledge and skills to the next generation. One thing is for certain: the next generation has its full attention fixed on the cannabis farmer’s magical new opportunities.
SOIL AMENDMENTS & FERTILIZERS

Thriving sustainable agriculture is built on the ground of healthy soil. In fact, organic certification requires a soil management plan. Do a soil test to determine your soil’s needs before embarking on a program of soil improvement. Check with your local Cooperative Extension for testing in your area, or consider our testing and recommendation service listed below right.

Soil amendments used with a program of crop rotation, composting and cover cropping can enhance fertility, improve soil tilth, promote disease resistance, and support beneficial soil microorganisms. Application rates vary depending on soil type and results of soil tests.

Fertilizers provide nitrogen and other nutrients in a form that is readily available to plants. Organic fertilizers can provide both an immediate boost and additional long-term fertility, feeding both the plants and the organisms that maintain soil health. We also offer soil amendments that have limited available plant nutrients but help to remineralize the soil, improve soil structure, or provide a long-term slow-release source of plant nutrients. Foliar sprays get nutrients directly to the leaves and can increase resistance to disease and to insect infestation.

Analyses provided here are those provided by the manufacturers, or, if none are available, from a Maine state lab test performed on our most recent lot; there is some variability in the nutritional analysis of natural fertilizers, so view these numbers as guides, not gospel. Fertilizers should be used as a supplement to, not a replacement for, the nutrients provided by healthy soil. Sustainability requires developing a long-term plan of cover cropping, green manuring and composting.

CALCIUM SOURCES

Aragonite (94% CaCO₃) When the price of aragonite spiked a few years ago, we tried to steer growers toward the chemically identical 8198 Calcitic Limestone, but they were having none of it. The internet forums said to use calcium carbonate from oyster shells, not from pulverized rock, so oyster shells they must have! We are acquiring and listing aragonite again. Aragonite is even lower than calcitic lime in magnesium, so it’s the ideal choice for soils with excessive magnesium. Mined from the deposits that create the white sand beaches of the Bahamas—more expensive than calcitic lime, but less expensive than a tropical vacation. Feed quality. MOFGA BACK!
8195 A: $ for $6.75
B: $24.00
C: pallet 40 bags (2000#) for $750.00

Pro Pelleted Calcitic Limestone Pro-Select Prill (87% CaCO₃, 7% MgCO₃). Cal Carb Equivalent 95.8%. The most common and most frequently used soil conditioner, Calcitic is the fancy name of the product we used to call Hi-Cal lime. It’s recommended for soils with excess magnesium: contains just 1/3 the amount of magnesium carbonate as dolomitic lime. Aragonite and Calcitic are both calcium carbonate, just with a different crystalline structure and from different sources: Calcitic is mined rock, while aragonite is derived from marine shells. Calcitic contains marginally more magnesium than aragonite. Prilled with 2% sodium salt lignin, an NOP-allowed synthetic, as a binding agent. A-size MOFGA; B/C sizes OMRI
8198 A: $ for $5.50
B: $10.00
C: pallet 40 bags (2000#) for $350.00

Pro Pulverized Dolomitic Limestone (53% CaCO₃, 42% MgCO₃). Cal Carb Equivalent 102.9%. Use to sweeten soil (raise pH) and provide calcium where excess magnesium is not a problem. A-size MOFGA; B/C sizes OMRI
8201 A: $ for $5.00
B: $20.00
C: pallet 40 bags (2000#) for $250.00

Gypsum, pelleted (70% CaSO₄, 2H₂O. 24% Ca, 14% S) Gypsum is a good source of calcium when the pH is at a desired level. The sulfur in gypsum reacts with water to form a weak sulfuric acid solution that frees the calcium in the soil. Pilled with 2% sodium salt lignin. MOFGA
8204 A: $ for $6.00
B: $24.00
C: pallet 40 bags (2000#) for $610.00

Wollastonite (48% CaO and 52% SiO₂). Cal Carb Equivalent 76.0%. Soluble-grade and at least 95% pure (may contain trace amounts of iron, magnesium, and manganese). Silicon is not traditionally considered a limiting cofactor for plant growth, but researchers are finding that despite ample amounts of silicon in most soils, plants supplemented with silicon often yield better. Silicon strengthens cell walls, which reduces lodging and improves resistance to insects and disease; stimulates immune response pathways (possibly increasing production of resin and terpenes); and reduces transpiration (improving drought resistance). May be applied as a foliar spray to build resistance to powdery mildew; for yield benefits, incorporate into the soil. Pelletized and recommended for cannabis, orchard crops, cucurbits, sweet corn, grains and forage crops. Customer Norman B. of West Baldwin, ME, credits wollastonite for his exceptional potato crop last year (see page 115). Most soil tests do not offer recommended application rates for silicon, one approach is to use wollastonite to correct your soil pH. Dusty! Wear a mask when handling. MOFGA
8207 A: $ for $6.00
B: $24.00
C: pallet 40 bags (2000#) for $1100.00

MORE MINERALS

Azomite Named for its A-to-Z of Minerals including Trace Elements; contains over 67 minerals beneficial to plants and animals. Broadcast at 300–600# an acre, approximately 1–2#100 sq ft. In use in potting soil and compost. We have two grades:

Coarse A mix of particle sizes from ½” to powder. Less dusty and more easily spread with a broadcast spreader. For slow-release long-lasting applications. A-size MOFGA; B/C sizes OMRI
8213 A: $ for $7.00
B: $32.25
C: pallet 50 bags (2200#) for $1350.00

Micronized Very fine powder passed through a 200-mesh screen. Provides a quick release of nutrients and is also recommended as a foliar feed; allows the heaviest portion to settle before adding to the sprayer. As a liquid fertilizer add 1 tsp/gal. A good free-choice trace mineral supplement for livestock when used in addition to a balanced mineral premix. A-size MOFGA; B/C sizes OMRI
8216 A: $ for $7.00
B: $32.25
C: pallet 50 bags (2200#) for $1350.00

Understanding Calcium and pH Gardeners tend to worry first about the N-P-K levels of their soil, neglecting the soil’s calcium. Without adequate calcium, all the fertilizer in the world will do little good. Calcium benefits soil and plants by improving the soil’s physical structure, raising the pH of the soil and directly contributing to the plants’ nutritional needs.

Soil Structure: Calcium increases soil porosity, which means more oxygen in the root zone and better water penetration.

Effects on pH: When lime is applied to acidic soil it increases the pH of the soil and directly contributing to the plants’ nutritional needs.

Plant Nutrition: Calcium helps plants build strong cell walls, for bigger healthier plants with better disease resistance. It also helps plants metabolize other nutrients and cope with heat stress. Fruiting plants deficient in calcium may suffer blossom end rot or other quality problems.

How much lime should you apply? Don’t even try to answer this question without a professional soil test. The quantity will depend not only on the current pH and calcium levels of your soil, but also on your soil’s cation exchange capacity (CEC) and perhaps on what crops you plan to grow. Even on very acidic soils, most experts recommend that applications not exceed 3 tons per acre per year (about 1400/1000 sq ft).

When and how should you apply lime? Liming should coincide with a term plan of cover cropping, green manuring and composting.

Sustainability requires developing a long-term plan of cover cropping, green manuring and composting.

Soil Testing & Organic Fertilizer Recommendation Service for Garden, Farm and Orchard

Don’t guess—test! Applying fertilizers and soil amendments without the guidance of a professional soil test is like driving downtown with your eyes shut. You’ll run too much or too little of one nutrient can tie up others and wreak havoc on your soil biology. But even with test results in hand, which fertilizer do you choose and how much do you apply? Fedco to the rescue! We’ll send you a soil test kit and sampling instructions, plus a postage-paid box to return your sample and form to the Maine State Soil Lab. You’ll learn your soil pH, organic matter percentage, phosphorus, potassium, magnesium, calcium, sulfur, boron, copper, manganese, zinc, and available nitrogen, plus we’ll offer customized recommendations for how to correct any deficiencies or imbalances in your soil. Order 8194-A for annual vegetable crops and, 8194-B for fruit tree orchards. If you order the orchard version, please let us know in your order notes whether you are establishing a new orchard or if your orchard is already planted; wheth-er or not your trees are bearing fruit. For best results, take samples during the growing season while the soil is warm. Please be patient! We are at the mercy of how busy the soil lab is at any given time.

8194 A: for annual vegetable crops ($4.00)
B: for orchards ($4.00)

126 questions@fedcoseeds.com

Use weight in parentheses (#) to calculate shipping charge.
20 Mule Team Borax Solubor (Sodium Tetraborate, 20.5% B) Soluble borate for fluid fertilizers and nutrient sprays. Boron is essential for all stages of tree growth and fruit set. Alfalfa, clover, brassicas, carrots, celery, corn, lettuce, onions, beets, tomatoes, strawberries, and tree fruits are particularly sensitive to boron deficiency. May be used in certified organic settings only to correct a documented boron deficiency. Excess boron is toxic to plants. Dry flowable powder, mixes easily into spray solutions. Or, mix into a larger quantity of fertilizer for ground applications. A-size MOFGA; B-size OMRI.

BrixBlend Basalt (49.3% SiO2, 13.3% Al2O3, 9.2% CaO, 5.7% MgO, plus trace minerals) A paramagnetic stone powder from the Pioneer Valley of Massachusetts for remineralization and enhancing the general foundational fertility of the soil. Latest magnetic susceptibility reading is 2400 cgs units. Till in 1–10 tons/acre, 5–50#/100 sq ft or broadcast at 1–3 tons/acre, 5–25#/100 sq ft. For compost, add 20–25#/cubic yard of raw material. Use up to 5% by volume in potting mixtures. Nat’l List.

Calphos (0-3-0, 20% Total P, 20% Ca, trace minerals) This soft-rock phosphate is an excellent choice for calcium-deficient soils as plants will take up the calcium first, freeing the phosphorus to be taken up in turn. Don’t apply lime at the same time lest plants take calcium from the lime, leaving the phosphate not yet available. Colloidal phosphate contains fine clays that help sandy soils retain water and nutrients. Our current supply is prilled for ease of application, giving it a granular appearance: the granules readily break down in solution to fine colloidal particles. Buckwheat is especially talented for sandy soils. Our current supply is prilled for ease of application, giving it a granular appearance: the granules readily break down in solution to fine colloidal particles. Buckwheat is especially talented in handling these particles: the granules readily break down in solution to fine colloidal particles. Buckwheat is especially talented in handling these particles:

Monterey Epsom Salts (9.8% water-soluble Mg, 12.9% S) Magnesium helps strengthen plants’ cell walls, improving crop quality, disease resistance, storage capacity. Magnesium availability for sugar and starch production. Granular meal contains 5% sulfur and potatoes like its quick boost of potassium. If you are looking for an allowed Sul-Po-Mag, this is it. A-size MOFGA; B/C sizes OMRI.

Hum-Amend Max is an excellent choice for calcium-deficient soils as plants will take up the calcium first, freeing the phosphorus to be taken up in turn. Don’t apply lime at the same time lest plants take calcium from the lime, leaving the phosphate not yet available. Colloidal phosphate contains fine clays that help sandy soils retain water and nutrients. Our current supply is prilled for ease of application, giving it a granular appearance: the granules readily break down in solution to fine colloidal particles. Buckwheat is especially talented in handling these particles: the granules readily break down in solution to fine colloidal particles. Buckwheat is especially talented in handling these particles:

Granite Meal Contains about 5% potassium in very slow-release form. Plants need potassium for sugar and starch production. Granite meal can be added to the soil in large amounts without altering the pH. Greatly enhances soil structure and promotes healthier plants. Application rates are 2000–4000#/acre or 50–100#/1000 sq ft. MOFGA.

Hum-Amend Max is an excellent choice for calcium-deficient soils as plants will take up the calcium first, freeing the phosphorus to be taken up in turn. Don’t apply lime at the same time lest plants take calcium from the lime, leaving the phosphate not yet available. Colloidal phosphate contains fine clays that help sandy soils retain water and nutrients. Our current supply is prilled for ease of application, giving it a granular appearance: the granules readily break down in solution to fine colloidal particles. Buckwheat is especially talented in handling these particles: the granules readily break down in solution to fine colloidal particles. Buckwheat is especially talented in handling these particles:

Custom Mixing Fedco has a new baby! We adopted a soil mixer from our friends at the Maine Cap N’ Stem Mushroom Co. It’s round and red and adorable, and we are so proud of how much faster it blends fertilizers and potting mixes than the tiny old cement mixer we used to rely on. We’ve been using it for a year on our own mixes and are ready to offer custom blending to the masses. Buy ingredients from us or bring your own. To estimate volume requirements for products sold by weight: dense products like rock powders are about 1 yd/t, while fluffier products like shrimp meal are about 2 yds/ton. To convert other volume measurements: there are 27 cu ft or about 700 dry qt per cu yd. Our rates assume mixes contain ten or fewer ingredients; we may charge more for complex mixes or materials that are particularly difficult to handle. Please allow at least two weeks for completion. Questions? Contact us at cgs@fedcoseeds.com. NEW!

Custom Mixing Fedco has a new baby! We adopted a soil mixer from our friends at the Maine Cap N’ Stem Mushroom Co. It’s round and red and adorable, and we are so proud of how much faster it blends fertilizers and potting mixes than the tiny old cement mixer we used to rely on. We’ve been using it for a year on our own mixes and are ready to offer custom blending to the masses. Buy ingredients from us or bring your own. To estimate volume requirements for products sold by weight: dense products like rock powders are about 1 yd/t, while fluffier products like shrimp meal are about 2 yds/ton. To convert other volume measurements: there are 27 cu ft or about 700 dry qt per cu yd. Our rates assume mixes contain ten or fewer ingredients; we may charge more for complex mixes or materials that are particularly difficult to handle. Please allow at least two weeks for completion. Questions? Contact us at cgs@fedcoseeds.com. NEW!). If shipping weight in parentheses is (0), the item qualifies for free shipping!
SOIL AMENDMENTS

North Country Organics® Natural Sulphate of Potash (0-0-51) The most economical source of available potassium. A-size MOFGA; B/C sizes OMRI

8246 A: 5# for $11.00 B: 50# for $60.00 C: pallet 40 bags (2000#) for $2000.00 ★

Tiger 90CR Organic Sulfur 90% elemental sulfur, 10% bentonite clay. Use to lower soil pH (make it more acidic). Often helpful for both lowbush and highbush blueberries, and for potatoes. Lowering pH of gravel paths will help control weeds. Not fine enough to be spread as fungicide; comes in small pastilles like yellow button candy. (Fungicidal sulfur is B/G.) Even in soils with correct pH, small amounts of sulfur are necessary for chlorophyll formation, the metabolism of nitrogen, and the synthesis of oils. Application rates for pH correction are typically 500–1500#/acre (depending on current pH, target pH and soil type), with no more than 1000#/acre applied at once. To address nutritional deficiency of sulfur, apply 10–30#/acre, thoroughly blended into a larger quantity of fertilizer for even application. Sulfur oxidizing bacteria are inactive below 55˚—don’t trust soil test results showing “sulfur deficiency” from samples taken early or late in the season. Wait to apply until soil temp is at least 60˚. A-size MOFGA; B/C sizes OMRI

8249 A: 5# for $7.25 B: 50# for $28.50 C: pallet 40 bags (2000#) for $900.00 ★

Tennessee Brown Rock (0–4–0, 23% total P₂O₅) The consistency of rich soils. Comes from the washing piles left behind when high-grade ore was extracted to produce superphosphate in the early 20th c. Lowest concentration of heavy metals of any phosphate source. Recommended by soil gurus Phil Callahan and Mark Fulford. A-size MOFGA; B/C sizes OMRI

8252 A: 5# for $6.00 B: 50# for $17.00 C: pallet 40 bags (2000#) for $560.00 ★

ZeoMax Garden Aid Zeolites are aluminosilicate lattices, derived from volcanic ash, that hold up to 55% of their weight in water in the small cavities of their crystal structure. If one tablespoon of zeolite crystals were unfolded, they would cover an entire football field! Negatively charged, the lattices hold the cations of essential elements. Zeolites can improve the productivity of any texture of soil, improving water and mineral retention in sandy soils, and improving aeration and minimizing compaction in heavier soils. Added to compost, zeolites retain ammonium ions and prevent their transformation to ammonia gases, keeping the nitrogen from escaping into the air. Add 2–3#/10# of potting soil. Apply to the soil at 15–200# per acre and incorporate 6” deep. Water thoroughly after application so zeolites will adsorb the moisture, holding it in a thin film on their surfaces until needed. MOFGA

8255 A: 5# for $8.00 B: 25# for $20.00 C: pallet 40 bags (1000#) for $575.00 ★

★ When you see the star, this item qualifies your entire Organic Growers Supply order for a volume discount. Take an additional 5% off December orders! Orders over $100 deduct 5% Orders over $300 deduct 10% Orders over $600 deduct 15% Orders over $1200 deduct 20%

The solution is all in solution! No matter where you are or what you grow, you’ve probably noticed two trends: - Rain is an increasingly unreliable source of water for crops. - A few more diseases and insect pests arrive each year. Gardeners and farmers are having to irrigate when and where they’ve never had to before, and they are having to manage new, unfamiliar diseases and pests. It can be hard to decide whether it’s worth the time and expense to irrigate or spray. If you’re taking the time to water or spray your crop, why not boost the water with some extra nutrients or beneficial organisms? Fertilization means adding water-soluble products to an irrigation system. Foliar sprays can be applied on a small scale with pump sprayers (p. 148.) Check out the chart to learn about all the great things you can use to supercharge your water!

<table>
<thead>
<tr>
<th>Item</th>
<th>Product</th>
<th>Primary function</th>
<th>Fertilization rate</th>
<th>Foliar spray rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>8167</td>
<td>Humic Acid</td>
<td>Chelator</td>
<td>1 oz/50 gal</td>
<td>1 oz/50 gal</td>
</tr>
<tr>
<td>8170</td>
<td>Fulvic Acid</td>
<td>Chelator</td>
<td>0.1–1 fl oz/gal</td>
<td>0.1–1 fl oz/gal</td>
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<tr>
<td>8175</td>
<td>BioOrganics Endo</td>
<td>Mycorrhizal inoculant</td>
<td>1 Tbsp/gal</td>
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<tr>
<td>8180</td>
<td>Mammoth P</td>
<td>Beneficial bacteria</td>
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<td>EM-1</td>
<td>Beneficial bacteria</td>
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<td>8189</td>
<td>Monster Plant Mojo</td>
<td>Macronutrients</td>
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<tr>
<td>8190</td>
<td>Essential Plus</td>
<td>Macronutrients</td>
<td>2 fl oz/gal</td>
<td>1.25–2 fl oz/gal</td>
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<td>8192</td>
<td>BioNutrients</td>
<td>Macronutrients</td>
<td>0.5 fl oz/gal</td>
<td>0.5 fl oz/gal</td>
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<td>8266</td>
<td>Kelp-It</td>
<td>Micronutrients</td>
<td>0.5 tsp/gal</td>
<td></td>
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<tr>
<td>8269</td>
<td>Liquid Kelp</td>
<td>Micronutrients</td>
<td>2 Tbsp/gal</td>
<td>2 Tbsp/gal</td>
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<tr>
<td>8289</td>
<td>Fish Hydrolysate</td>
<td>Macronutrients</td>
<td>4 Tbsp/gal</td>
<td>2 Tbsp/gal</td>
</tr>
<tr>
<td>8292</td>
<td>Fish w/ Kelp</td>
<td>Macronutrients</td>
<td>4 Tbsp/gal</td>
<td>2–3 Tbsp/gal</td>
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<tr>
<td>8663</td>
<td>Karanja Oil</td>
<td>Synergist</td>
<td>2 Tbsp/gal</td>
<td></td>
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<tr>
<td>8702</td>
<td>Actinovate</td>
<td>Biofungicide</td>
<td>0.5–1 tsp/gal</td>
<td></td>
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<tr>
<td>8710</td>
<td>Cease</td>
<td>Biofungicide</td>
<td>1.25 fl oz/gal</td>
<td>1.25 fl oz/gal</td>
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<tr>
<td>8714</td>
<td>ThermX 70</td>
<td>Soil and leaf penetrant</td>
<td>0.5 tsp/gal</td>
<td>0.5 tsp/gal</td>
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<tr>
<td>8717</td>
<td>Nu Film P</td>
<td>Sticker-spreader</td>
<td>4–6 fl oz/100 gal</td>
<td></td>
</tr>
</tbody>
</table>

Fertilizers

PLANT-BASED FERTILIZERS

Alfalfa Meal - Organic (2.8-0.5-3.6) Popular among veganic gardeners, and hands-down the best-smelling fertilizer out there. Gives plants a noticeable quick boost and feeds soil organisms. Blended with a trace quantity of certified organic soybean oil to reduce clumping. MOFGA

8260 A: 5# for $8.50 B: 50# for $38.75 C: pallet 40 bags (2000#) for $1280.00 ★

Kelp Meal - Organic Dried and ground seaweed contains trace minerals, enzymes and amino acids, plus a small dose of N-P-K. Contains sugars that chelate micronutrients, making them more available to plants. A natural source of hormones that stimulate root growth. Mix into the soil at the rate of 300–600#/acre or 1#/100 sq ft. MOFGA

8263 A: 5# for $15.00 B: 50# for $90.00 C: pallet 40 bags (2000#) for $2875.00 ★

Kelp-It Soluble Powder Dehydrated Seaweed Extract Highly concentrated powder makes a fantastic foliar solution containing growth hormones, trace minerals, enzymes and carbohydrates. One package makes 1 gallon of liquid seaweed concentrate. Add the powder and 1/2 tsp of a mild biodegradable soap or non-ionic surfactant (as a wetting agent) to 1 gallon of water, agitating to dissolve the powder. Use the concentrate at a rate of 1 Tbsp/gal. To make a ready-to-use solution, mix 1/2 tsp soluble powder and 1/4 tsp soup to 1 gal water. Reseal package; the powder readily absorbs water. A-size MOFGA; B/C sizes OMRI

8266 A: 10.7 oz (#) for $16.50 B: 44# for $515.00 ★

Liquid Kelp Maine-harvested kelp, Ascophyllum nodosum, is a source of growth-promoting and regulating hormones. Use when starting seeds to improve seed germination and increase root growth. Also useful as a drench to help prevent transplant shock. As a foliar feed, it will increase mineral uptake in leaves and improve photosynthesis. Add 1/2 tsp/gal ThermX™ 70 (8714) as a spreader-sticker to increase coverage and absorption. Can be applied to soil, root or leaf at 2 Tbsp/gal. Use 1/2 qt/50 gal water per acre. MOFGA

8269 A: pint (3#) for $8.00 B: 1 gal (10#) for $25.00 C: 5 gal (50#) for $90.00

Use weight in parentheses (#) to calculate shipping charge.
Neem Cake (6-1-3) Pure full-strength neem cake. The residue of neem seed kernels after the oil has been pressed. Earthworm populations increase when neem cake is added to the soil. Added to the soil a few weeks before planting, neem’s antifungal properties help suppress Fusarium infections. Use in combination with other fertilizers and soil conditioners at 10-15% by weight. Mix into the top 6–8” of the soil or apply as a topdressing around the base of your plants. Smells like old onion bagels. Contains growth-regulating hormones so be cautious using it in potting mix, adding no more than 1% by weight. OMRI

8272 A: 4# for $17.50 B: 44# for $115.00 ★

Soybean Meal (7-1.5-3 avg.) High levels of nitrogen and potassium are released as the soybean meal breaks down, providing fertility over time. Add when first planting or transplanting. For sidedressing, consider fish meal or blood meal. Considered the most effective and economical nitrogen fertilizer for Northeast soils. Certified non-GMO. MOFGA

8275 A: 5# for $8.00 B: 50# for $50.00 C: pallet 40 bags (2000#) for $1300.00 ★

**ANIMAL-BASED FERTILIZERS**

**Blood Meal** (12-0-0) Fastest release time of any organic nitrogen source. Highly recommended for corn. The smell (understandably) freaks out deer. Side-dress 3 weeks after transplanting or 4 weeks after seeding, or till into soil. MOFGA

8280 A: 5# for $16.00 B: 50# for $100.00 ★

North Country Organics® Bone Char (0-16-0, 32% total P₂O₅, approx. 30% Ca) Burned bone meal provides large amounts of readily available phosphorus. The most economical source of P for deficient soils (excepting fresh manure, which is bulkier and stinkier). A-size MOFGA; B/C sizes OMRI

8283 A: 5# for $7.75 B: 50# for $35.00 C: pallet 40 bags (2000#) for $1100.00 ★

**Feather Meal** (13-0-0) Provides a slow and steady release of nitrogen for 3 to 6 months depending on soil pH, moisture levels and biological activity. If you’re playing chicken with low nitrogen levels, apply together with composted poultry manure to speed the rate of release. Apply in the row at planting time for sweet corn, melons, brassicas and other heavy feeders. Not water-soluble; should be worked into the soil. MOFGA

8296 A: 5# for $11.75 B: 50# for $65.00 C: pallet 40 bags (2000#) for $2100.00 ★

**Fish Hydrolysate** (2-5-0.2)

Fish heads, bones, skin and cartilage are finely ground and then enzymatically digested. The resulting gurry is stabilized with phosphoric acid. Liquid goes into solution readily and can be used as foliar feed. Strain before adding to a drip irrigation system to avoid clogging the lines. Concentrated: use 2–4 Tbsp/gal of water for garden application or foliar spray. Use 2/4–6/4 qt/50 gal water per acre. MOFGA

8299 A: pint (3#) for $9.00 B: 1 gal (10#) for $25.00 C: 5 gal (50#) for $90.00 ★

**Fish Hydrolysate with Kelp** (2-5.0-2) All the N, P & K of fish plus the micro-nutrients and growth hormones of kelp. Can be used as a foliar feed, in drip irrigation and for better seed germination and seedling growth. Alice’s preferred drench for onions and other early transplants; provides readily available nitrogen when the microbes are still sluggish in the cold spring soil. Improves plant vigor and stress resistance, increases storage life. Use 4 Tbsp gal water for soil drench. 2–3 Tbsp/gal water for foliar spray. Use 2/4–6/4 qt/50 gal water per acre. MOFGA

8302 A: pint (3#) for $8.00 B: 1 gal (10#) for $25.00 C: 5 gal (50#) for $90.00 ★

**Fish Bone Meal** (6.7-11.4-0.4) Fish scraps (a food industry byproduct) are cooked, screened and milled to a uniform particle size. No stabilizers or additives. Once in the ground the odor fades quickly. Excellent source of nitrogen and phosphorus. Use as a sidedressing or mix into compost to provide added nitrogen and a bacterial boost. MOFGA

8295 A: 4# for $11.00 B: 3# for $75.00 C: pallet 40 bags (2000#) for $2100.00 ★

Seabird Guano (12-11-2) Etymologically, the word guano is derived from the (indigenous Andean) Quechua word for poop. Biologically, guano is manure from bats or (in this case) arid-climate seabirds that live in dense colonies where waste builds up in large quantities. Agronomically, guano is the high-test fuel of organic fertilizers, containing as much nitrogen as blood meal and nearly as much phosphorus as bone char, plus a modest helping of potassium. Our guano is pelleted for ease of application. This is not a pasteurized product; manure-based guidelines may apply for certified food crops. MOFGA

8298 A: 5# for $15.00 B: 40# for $80.00 ★

**Poultry-Manure Compost** Kreher Enterprises (5-4-3 with 9% Ca) Composted, pasteurized and pelletized poultry litter from New York farms provides a good balance of major plant nutrients and other essential elements. Pasteurization removes the threat of weed seed and pathogen contamination, and the composted material increases the biological activity of your soil. A-size MOFGA; B/C sizes OMRI

8301 A: 5# for $6.50 B: 50# for $22.50 C: pallet 40 bags (2000#) for $750.00 ★

**Shrimp Meal** (A-size: 5-7-10-0; B/C-size: 4-5-0; both approx. 14% Ca) You can’t barbecue it, boil it, broil it, bake it, or sauté it, but you can use it to grow healthy plants! As well as being an excellent source of major plant nutrients, shrimp shell meal is rich in chitin (23% or more). Adding it to your soil puts beneficial chitin-eating bacteria into a feeding frenzy and subsequent population boom. Once they’ve eaten up all the chitin you applied, they will turn upon pathogenic fungi and nematodes and disease-causing bacteria like E. coli and salmonella. A solid body of scientific evidence supports the efficacy of chitinous soil amendments in the control of soil-borne pathogens. Also a useful addition to compost mixes and potting soils at 1/2 cup per cubic foot. MOFGA

8304 A: 5# for $10.00 B: 50# for $50.00 C: pallet 40 bags (2000#) for $1500.00 ★

**Feed Me!**

Plant and animal byproducts provide a natural source of plant nutrients and support the organic principle of recycling natural resources within agricultural systems, putting “waste” to productive use, reducing landfill space, and preventing contamination of our waterways. Unlike synthetic fertilizers, they provide tasty nibbles for soil life, and a well-fed microbial population will help to unlock the nutrients already held in your soil.

Fertilizer analyses report levels of soluble nitrogen (N), phosphate (P) and potash (K) available to your plants in the current growing season. Additional nitrogen, phosphorus and potassium contained in the material may become available at varying rates over time. Release rates depend on many factors, including particle size, temperature and microbial activity in your soil.

The analyses we provide for our plant and animal meals, and for the mixes we produce in-house using those products, are not guaranteed analyses. These natural products are highly variable. These analyses represent Maine state lab tests performed on the most recent lot we purchased, and we keep these numbers updated on our website as fresh lots come in and new tests are performed. The numbers here do provide some guidelines for determining the approximate ratios of nutrients in plant and animal meals.
FEDCO MIXES

All ingredients in our mixes, which are formulated and blended in-house, are on the National List and on the MOFGA list of allowed products.

Sleepytime Garden Blend The last of the root vegetables have been tucked into the cellar, and the soil microbes snooze contentedly under a blanket of young winter rye. Snow is coming soon, and a hum już descends on the gardening season. The gardener may wish to add the garlic to their bedtime snack before she curls up by the fire with the new Fedco catalog and a cup of tea, but this is not the time for fertilizer with soluble nutrients. Roots and microbes alike are too sleepy to do anything with rich food, and it will just get washed away before spring arrives. It’s the perfect time to spread rock powders, which need time and moisture to release their benefits. Our blend of granite, zeolites, gypsum, microminerals and humates will improve soil structure, remineralize and enhance nutrient availability for the next growing season. Does not contain significant amounts of soluble nutrients and will have a gently balancing effect on soil pH, so may be applied to any soil without regard to soil test results. Apply 2 tons/acre or 100 lbs/1000 sq ft. MOFGA NEW!

8307 A: 5# for $6.00
B: 50# for $39.00
C: pallet 40 bags (2000#) for $1000.00 ★

Vegemighty (3-2-2.5) The fertilizer formerly known as Bulb Planting Mix is still perfectly suitable for this purpose, but we are rebranding it to emphasize that this is an excellent all-purpose slow-release fertilizer for those who prefer to avoid animal products, whether for ethical reasons or so as not to attract critters. Use 1-2 tsp per transplant (or bulb) mixed into the loosened soil below planting depth, at 5#/50 sq ft as a topdressing. Contains soybean meal, Calphos, organic alfalfa meal, sulfate of potash and kelp meal. Does not contain brewers’ yeast extract, and may or may not encourage the adoption of an Australian accent. MOFGA

8309 A: 5# for $7.75
B: 50# for $50.00
C: pallet 40 bags (2000#) for $1300.00 ★

Turbo-Tuber (Approx. 7-2-9, plus 2% Ca and 3.5% S) Magic Molly, our potato superhero, is the fastest girl in town: her jacked-up hybrid hatchback runs on our high-test organic fertilizer, formulated to meet the nutrient requirements of potatoes. Blended in-house from fish meal, feather meal, soybean meal, sulfate of potash, dolomitic lime, pasteurized poultry manure and K-mag. On balanced soils, apply at 5#/25 row feet, 50#/250 row feet, or 200#/acre and work into the soil to planting depth. MOFGA

8315 A: 5# for $9.75
B: 50# for $72.50
C: pallet 40 bags (2000#) for $1750.00 ★

3G Greener Garlic Grower (approx. 3-3.5-3.5, plus sulfur) By popular demand, we designed a special Fedco mix to meet the nutrient requirements of garlic. 3G is about the fastest data speed you can expect in much of rural Maine, but we like it in the slow lane. We don’t mind planting garlic in October and waiting until August to reap our pungent harvest. With 3G Greener Garlic Grower (8317), you can expect better spring emergence, more vigorous root growth and function. By spring you’ll have a rich spot ready to plant; just pull back the mulch, dig the hole, and incorporate the supplements and compost as you back-fill around the tree roots. Contains calcite lime, colloidal phosphate, Azomite, granite meal, humates, greensand, bone char, kelp meal, blood meal. MOFGA

8333 A: 32# for $40.00 ★

Ancients Rise Mix Whether they be abandoned heirlooms or wild seedlings, tucked in the woods or growing alongside an old road, apple trees live on for hundreds of years. More and more people are renovating these old and sometimes forgotten trees, not only to enhance production and fruit quality, but also as acts of reverence. Our unique blend of rock powders, trace minerals, biostimulants and humic acid is formulated to enhance the soil cation exchange capacity, build humus, and condition the soil in which the ancient roots reside. If fertilized right, the year’s growth and several feet beyond. No need to work into the soil—just cover with a thick layer of wooly mulch. Can be applied in fall or spring, ideally in conjunction with a thoughtful pruning program. Apply one bag per old tree. Ancients, rise! MOFGA

8336 A: 50# for $50.00 ★

OTHER MIXES

Fertrell® Feed-n-Gro (3-2-3) Slow-release plant food made with blood meal, bone meal, feather meal, peanut meal, alfalfa, aragonite, sulfate of potash, greensand and kelp. Apply when planting at 2-3#/100 row ft and side-dress at the same rate when plants are a few inches high. Can be used under transplants at 1/4 cup per hole. Side-dress later if needed. Apply to orchards at a rate of 3000#/acre. MOFGA

8339 A: 5# for $9.25
B: 50# for $45.00
C: pallet 40 bags (2000#) for $1450.00 ★

NutriVeg® (5-4-4, 5% Ca) A blend of fertilizers and minerals to provide balanced nutrition for all your plants and vegetables. Contains alfalfa meal, crab meal, feather meal, fish meal, kelp meal, kelp extract, rock phosphate and sulfate of potash. Before planting, work it into the top of the soil. Reapply as needed during the growing season. For fruit trees and shrubs apply around the drip line and work into the top layer of the soil where the root system feeds. Reapply again when trees are under stress or if soil is poor. Made in Maine. MOFGA

8342 A: 5# for $12.00
B: 50# for $65.00
C: pallet 40 bags (2000#) for $2175.00 ★

Biochar Join the carbon-farming revolution. Biochar is the product of heating organic matter in a low-oxygen environment: instead of releasing the carbon into the atmosphere, this converts it to a highly stable form that can be held in the soil for hundreds or thousands of years. Think of biochar as a super-compost! Biochar helps your soil sequester more carbon and emit less nitrous oxide (a greenhouse gas 300 times more potent than carbon dioxide). It provides a dream home for beneficial bacteria and fungi and prevents essential plant nutrients from leaching out of the root zone. Unlike the RICHMix biochar we used to carry (which was inoculated and blended with basalt powder) this new product is 100% pure horticultural-grade raw carbon. Apply raw char at up to 20#/1000 sq ft or 700#/acre on ground you are resting or preparing to put into production for the first time. Do not apply this product as-is to ground that is currently in production! Raw char may inhibit plant growth for a year or two: the microbes need time available nitrogen while slowly colonizing the micropore matrix. Then the magic happens and plant growth explodes in year three or four. If you can’t wait that long, blend raw char with your compost feedstock, using up to 50% char. The compost will finish faster and the compost/biochar blend may be applied to growing plants with immediate benefit. And if you’re REELY in a hurry, soak biochar in compost tea for 24 hours (this is practical only for small operations, since the nutty biochar would not handle well in a mechanical spreader). But Mother Nature counsels patience. MOFGA

8348 A: 5# for $10.75
B: 25# for $39.25
C: pallet 80 bags (2000#) for $2000.00 ★
Superworm Frass (2-2-2, 16% Chitin) The excrement of darkling beetles is highly valued as a soil amendment by cannabis growers. And as if “darkling beetle” didn’t already sound like the invention of a fantasy novelist, the manufacturers have dubbed their darkling beetle larvae “superworms.” On a dark and stormy night, an evil band of fungus gnats swarms toward your Conspiracy Kush. Superworm to the rescue! Darkling beetle is the common name for the Tenebrionidae family of beetles, which comprises more than 20,000 species worldwide. Their frass (a polite word for insect poop) is a respectable source of N-P-K, but more importantly it is a rich source of plant-available chitin. Frass nourishes chitin-feeding bacteria and fungi, which in turn devour gnat eggs and root-feeding nematodes. Chitin also fortifies plants’ cell walls, stimulates their immune systems, and fosters healthy blooms (think more and bigger and stickier buds!) Not just for cannabis: frass is a useful addition to potting soils and an excellent sidedressing for any crop. MOFGA NEW! 8351 A: 1# (0#) for $10.00  B: 5# for $50.00  C: 50# for $270.00 ★

Worm Castings (0.5-0.5-0.3 avg. and trace minerals) Research at Ohio State University indicates that adding 10-20% worm castings by volume to potting mixes greatly improves germination, seedling growth and plant productivity, but greater amounts produce decreased benefits. Worm castings limit plant disease and have beneficial effects including enhanced mycorrhizal activity and the suppression of parasitic nematodes. Benefits are lost if castings are sterilized. Our non-sterile castings come from locally farmed worms. MOFGA 8350 A: 8 qt (9#) for $14.00  B: 20 qt (20#) for $29.00  C: 2 cu yd (2000#) for $1155.00 ★

Vermont Compost Plus® Blended from composted manure and plant materials, blod sphagnum peat moss, granite gravel, animal and/or protein meal, black rock phosphate, kelp meal, gypsum, vermiculite and lanethene. A great boost for transplants, potted plants, and garden soils. Improves soil structure, provides a generous dose of slowly released nutrients and enhances microbial activity. Rejuvenate potted plants by spreading a shallow layer on the top of the container and watering in. Add a few tablespoons in the bottom of a transplant hole to reduce transplant shock. Sidedressing greens after early cuttings will stimulate new growth. Improve your potting soils with 4–8 Tbsp/qt. Will not burn roots. If you require a lift gate to unload the tote (actual weight around 1500 lbs), additional freight charges apply. MOFGA 8353 A: 60 qts (60#) for $45.00  B: pallet 35 bags (2000#) for $1500.00 ★  C: 2 cu yd tote (2000#) for $850.00 ★

Coast of Maine Quoddy Blend™ Compost Blend of composted lobster, crab, peat, bark and cow manure. Rich in micronutrients. Ideal for flower and vegetable beds. OMRI 8356 A: 1 cu ft (40#) for $10.00

Coast of Maine Penobscot Blend™ Compost & Peat 75% composted salmon, mussels and wild blueberries with 25% sphagnum peat. Perfect for mulching trees and shrubs, or topdressing lawns. Adds nutrients and structure to planting mixes. MOFGA 8359 A: 1 cu ft (40#) for $11.00

GreenTree Growers’ Blend™ A lighter blend of coir, sphagnum peat and organic nutrients. Recommended for small seeds, early growth and any plants that prefer high air capacity and quick drainage. Adequate fertility for four weeks of growth, and may be used longer with supplemental fertilizer. Made in New York. MOFGA 8363 A: 1.5 cu ft (40#) for $21.50  B: pallet 85 bags (2380#) for $1500.00 ★

GreenTree Ag Blend™ All-purpose blend, light on the peat, with coconut coir, worm castings and a well-balanced organic nutrient package. pH 6.5 and EC 1.5 mS/cm. Suitable for seed starting, transplants and microgreens. Made in New York. MOFGA 8365 A: 1.5 cu ft (40#) for $21.50  B: pallet 85 bags (2380#) for $1500.00 ★

GreenTree Ithaca Blend™ A premium high-test potting soil. Coir, sphagnum peat and worm castings form the base of this top-quality mix; GreenTree’s own biochar is added to encourage a thriving microbial population, and the whole concoction is topped off with a generous well-balanced helping of organic nutrients. Highly recommended for indoor growers, container gardening or slow-growing seedlings that will be in the greenhouse for six weeks or more. Seth Yentes of North Branch Farm said his onion seedlings thrived best in this soil. He observed that it has excellent water-retention capacity, and it doesn’t get slimy on top like some organic potting soils. Made in New York. MOFGA 8368 A: 1.5 cu ft (40#) for $27.50  B: pallet 85 bags (2380#) for $1900.00 ★

CannaLot Medicinal MegaSoil Dan, a faithful Fedco customer with a flair for experimentation, developed this mix and was kind enough to share his formula with us. He says, “I’ve been working on maximizing inputs to the point of performance versus death on these plants for about ten years, and have developed a feeling for how much they can take…This mix showed no signs of N or P overdose on foliage for the 2017 season.” Use this complete soil mix in 808 Fabric Pots to take your cannabis plants from 12” to harvest. To maximize quality and yield, fertigate with 8189 Monster Plant Mojo and 8185 EM-1 and 8289 Fish Hydrolysate. Contains a wide variety of mineral-, plant- and animal-based organic fertilizers (including biochar to support microbial activity, crustacean meal to deter fungus gnats and stimulate production of terpenes and cannabinoids, and wollastonite for strong plant structure) in a base of compost, worm castings, coir and a little peat. This specialty soil is not intended for seedling production and may not perform well for that purpose. As King Arthur would sing, “Don’t let it be forgot/That once there was some pot/For this brief shining season that was grown/In CannaLot.” Approx. 50 qt or 1.67 cu ft per bag. MOFGA 8369 A: 50# for $55.00

Vermont Compost Fort Vee™ Potting Soil Blod sphagnum peat, compost, vermiculite and coir with a blend of organic and mineral amendments. Widely used by growers who make soil blocks. Has good water retention and a long-lasting nutrient supply from the high proportion of compost in the mix. Made in Vermont. If you require a lift gate to unload the tote (actual weight around 1500 lbs), additional freight charges apply. MOFGA 8371 A: 60 qts (60#) for $45.00  B: pallet 35 bags (2000#) for $1350.00 ★  C: 2 cu yd tote (2000#) for $725.00 ★

Vermont Compost Fort Light™ Potting Soil Blod sphagnum peat, compost, perlite, vermiculite, herbs, and a blend of organic and mineral amendments. Recommended for cell-tray seedlings. Warms more quickly and drains better than Fort Vee. Might need additional fertilizing prior to transplanting seedlings that are more than three weeks old should be fertilized or transplanted to a more nutrient-rich blend to grow out. Made in Vermont. If you require a lift gate to unload the tote (actual weight around 1500 lbs), additional freight charges apply. MOFGA 8374 A: 60 qts (50#) for $45.00  B: pallet 35 bags (2000#) for $1350.00 ★  C: 2 cu yd tote (2000#) for $725.00 ★

Living Acres NP Germination Blend™ A light-textured potting soil with extra perlite, screened to 3/4”. Recommended for the smallest flower and herb seeds. Seedlings more than three weeks old should be fertilized or transplanted to a more nutrient-rich blend to grow out. Made in Maine. MOFGA 8377 A: 2 cu ft (50#) for $22.50

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If shipping weight in parentheses is (0#), the item qualifies for free shipping!
Coir Blocks This premium washed low-EC coconut coir is a biodegradable and environmentally sound substitute for peat moss. Compressed blocks of coconut fibers (coir) swell to eight or nine times their original size when placed in hot water. The fibers are quite short but have excellent moisture-retention capacity, pH 5.0-7.0, electrical conductivity of less than 0.5 mS. Use in potting mixes or to add organic matter to your soil. Improves aeration and nutrient retention. Easy to store and ship. Coir has been commended by the Wildlife Conservation Society as ecologically sustainable. Each block expands to approximately 2½ cubic ft once hydrated. To hydrate, set up a large container with 6–8 gal of water. Allow the block to soak for about twenty hours, or until it’s wet through and breaks apart. MOPGA

8380  A: one block (10#) for $18.00
  B: pallet 198 blocks (2000#) for $1800.00 ★

Perlite Volcanic glass that has been heated until “pops” like corn, resulting in a lightweight, porous and stable material. Widely used in potting mixes (usually as 20–25% of the total mix) to improve water retention and prevent compaction. Also used for rooting cuttings; place cuttings in a plastic bag of moistened perlite with the cut ends buried up to the node, then fill the rest of the bag with air, seal, and leave in indirect sunlight for 2–3 weeks. MOPGA

8389  A: 1.5 cu ft (15#) for $21.75
  B: 2.7 cu yd tote (2000#) for $550.00 ★

Rice Hulls A great alternative to perlite in your growing medium—carbonaceous, renewable and less dusty to mix. May be included at up to a third of your potting mix by volume. Also used as a mulch for container plants to retain soil moisture and improve microbial activity. Parboiled to eliminate viable weed seeds. Improves aeration and retains moisture. May cause rapid surface dry-out even when underlying soil moisture is ample; be sure not to overwater. Remains stable during the average plant production cycle with minimal nitrogen tie-up. OMRI

8392  A: 7 cu ft (65#) for $23.00
  B: pallet 16 bags (1800#) for $340.00 ★

Buckwheat Hulls An attractive economical sustainable mulching alternative. Cover your beds with a thin layer of hulls, ½–1” thick: it will look sparse at first and the hulls may seem light enough to blow away in a good breeze. They will swell up nicely after a rain or two and settle down to a good breeze. They will swell up nicely after a rain or two and settle down to a very few animals will eat it and even fewer will eat enough to cause ill effects. The smell may make the gardener hungry, it repels many insects. The dark brown color is attractive and deepens with age. You may find references online to cocoa shell mulch being harmful to pets or wildlife, but there are no documented cases where this has been a problem. COCOA SHELL ECO-POWER®

8400  A: 2 cu ft (25#) for $16.00
  B: pallet 60 bags (1500#) for $850.00 ★

Chocolate Mulch The only mulch that might sabotage your diet resolutions—it really does smell like chocolate! The shells of the cocoa bean make an excellent organic mulching material, dry and weed-free. While the smell may make the gardener hungry, it repels many insects. The dark reddish-brown color is attractive and deepens with age. You may find references online to cocoa shell mulch being harmful to pets or wildlife, but very few animals will eat it and even fewer will eat enough to cause ill effects. Best applied in sunny dry areas. Apply a 1” thick layer and water lightly to prevent the hulls from blowing away; as they dry, they will curl and interlock, providing an effective and long-lasting barrier against weeds. AYC

8406  A: 4'x50' (4#) for $60.00
  B: 4'x250' (5#) for $220.00 ★
  C: 6'x250' (6#) for $300.00 ★
  D: 6'x500' (60#) for $325.00 ★

Woven Ground Cover Thick 4.7 oz. commercial-grade fabric that blocks stubborn weeds (like quackgrass and dandelions) that won’t be stopped by organic mulches, but is not a throwaway product like the plastic mulches. This super-rugged fabric will last at least a decade if protected from photodegradation by a thin layer of wood chips, straw or hay. Very resistant to tearing. Use around the base of trees, in perennial flower beds, or in permanent walkways in your garden. Allows water penetration. We might need to replace this product with a new version by summer of 2020; check our website for current information.

8412  A: 4'x50' (0#) for $8.50
  B: 4'x250' (5#) for $27.50
  C: 4'x4000' (80#) for $300.00 ★

Embossed Black Plastic Mulch Good all-purpose plastic mulch for cool-wet weather areas. Excellent weed suppression. Increases soil temperatures by several degrees. Put down a few weeks before planting to allow the soil to soak up some heat. Embossed texture increases strength and minimizes tearing. Recommended for tomatoes, cucurbits and sweet corn. 1.0 mil. 4’ wide.

8418  A: 4'x50' (0#) for $7.25
  B: 4'x250' (5#) for $20.00
  C: 4'x4000' (80#) for $210.00 ★

IRT 100 Mulch Infrared Transmitting plastic mulching weeds nearly as well as black mulch and lets infrared light through to warm the soil more quickly and to a higher temperature. For northern growers, IRT adds days to the growing season at both ends. Recommended for long-season squash, melons, peppers, eggplant and okra. 1.0 mil. 4’ wide.

8421  A: 4'x50' (0#) for $9.75
  B: 4'x250' (5#) for $35.00
  C: 4'x2400' (50#) for $205.00 ★

OMRI

★ When you see the star, this item qualifies your entire Organic Growers Supply order for a volume discount. Take an additional 5% off December orders!

Use weight in parentheses (#) to calculate shipping charge.
Crystal Pellets™ These aloe-vera–based polysaccharides offer multiple benefits: improved immune response, suppression of harmful microorganisms, increased populations of beneficial microorganisms, reduced inflammation and enhanced regenerative activity of antioxidants on cells. Recommended for finishing ruminants, swine, poultry, or any livestock during weaning, shipping or persistently unfavorable weather. Feed 1/2–2 oz per 100# of body weight. MOFGA 8467 A: 50# for $125.00 ★

Fertrell® Grazier’s Choice A mix of kelp meal, feed-grade soft rock phosphate, sodium trace mineral salt, vitamin E, sodium selenite and diatomaceous earth designed for grazing livestock. Contains no added copper so safe for sheep. Does not contain a full complement of micronutrients. MOFGA 8473 A: 50# for $50.00

Horse Power Add to feed at 2 oz per day for mature horses to improve strength and stamina and reduce stress. 9–10.5% Ca; 3% P; 1% Mg; 18–20% salt with trace minerals, vitamins, yeast and lactic acid bacteria. AYC 8476 A: 50# for $85.00

Diatomaceous Earth Perma-Guard Fossil Shell Flour® Anti-ckaging Agent. Many livestock producers swear by diatomaceous earth as a preventive for internal parasite problems; clinical studies do not back this claim, but most animals will consume it freely and it may help improve gastrointestinal health. It is certainly effective on external parasites and to control the growth of maggots under bedding, as the sharp edges of the particles lacerate insects’ bodies and cause death by dehydration. Wear a dust mask when handling. DE comes in two grades: pool filter grade is chemically treated and poses a severe respiratory hazard for mammals, therefore should not be used. Our natural grade is the right type to use with animals. Do not exceed 2% of total ration. OMRI 8477 A: 50# for $35.00

Redmond Agriculture Aio Fine Premium Trace Mineral Salt Minimum 95% NiCl. These salts accumulated as a great inland sea evaporated. The trace minerals provide a valuable supplement for livestock growth and health. Free-choice supplement; animals love it. A good choice for a salt source to complement salt-free mineral mixes. OMRI 8482 A: 50# for $20.00

Kelp Meal - Organic Kelp is an excellent source of iodine and vitamin A and provides lower concentrations of dozens of other vitamins and trace minerals. Enthusiastically sought by livestock: I remember visiting a local farm several years ago where a loose goat followed me into the house so that she could stuff her head into the open bag of kelp sitting in the mudroom. Feed free-choice or mix in at 1–2% of total ration. Our feed-grade kelp is certified organic. MOFGA 8263 A: 5# for $15.00 B: 50# for $90.00 C: pallet 40 bags (2000#) for $2875.00 ★

Molasses - Organic Molasses is a common and cost-effective feed additive used for many purposes. Add it to your animals’ drinking water in cold weather, and it will give a helpful caloric boost and its sugar content will encourage better water consumption and prevent impaction. If you cannot find good hay, a drizzle of molasses will improve the palatability of poor quality hay as well as increase the ration’s energy and mineral content. A good option for treating ketonic cows. Molasses will act as a binder, reducing dust in finely ground feeds. Molasses may be fed liberally, but not free-choice: restrict to 10% of the ration or less. Certified organic. MOFGA 8497 A: gal (10#) for $13.50

Apple Cider Vinegar - Organic Long used by livestock growers for a host of purposes. Anecdotal evidence praises apple cider vinegar as a preventative for ketosis and milk fever, a parasiticide, a coccidiostat and a treatment for mastitis. May improve the metabolizable energy of grain-based rations. Definitively knocks algae back in stock tanks in summer. Certified organic. MOFGA 8500 A: gal (10#) for $18.50 B: 5gal (600#) for $750.00 ★

Crystal Creek Paladin™ Spike Supplement designed to support piglets during the challenge of weaning. If you buy spring pigs, feed Paladin Spike for the first several weeks after they arrive on your farm. Formulated with fat-soluble vitamins, probiotics and yeast metabolites that stimulate immune response and bind to harmful organisms such as salmonella and E. coli. One pound can supply a dozen piglets for a month after weaning. MOFGA 8503 A: #6 bucket for $135.00 ★

If shipping weight in parentheses is (0#), the item qualifies for free shipping!

Healthcare Protocol for Pigs
Pigs are hardy animals and unlikely to get sick if provided with a dry shelter, plenty of bedding, fresh air and nutritious feed. However, it is wise to vaccinate the outdoor pig for diseases that can be spread by wild animals or cause reproductive problems, and new mamas and babies can use a little extra support. This is the healthcare routine Alice followed at Treble Ridge Farm:

Day of farrowing: Provide copious dry bedding. If shipping weight in parentheses is (0), the item qualifies for free shipping!

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Pigs are hardy animals and unlikely to get sick if provided with a dry shelter, plenty of bedding, fresh air and nutritious feed. However, it is wise to vaccinate the outdoor pig for diseases that can be spread by wild animals or cause reproductive problems, and new mamas and babies can use a little extra support. This is the healthcare routine Alice followed at Treble Ridge Farm:

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**PARASITE CONTROL**

Internal parasites are the Achilles’ heel of organic livestock production. All livestock producers battle these invisible feed thieves and suffer annual economic losses in the hundreds of millions from lost efficiency and associated health problems. Making the challenge more difficult, organic producers face strict limitations on the tools they can use to treat a parasite problem. While many natural substances are touted as parasiticides, including diatomaceous earth, apple-cider vinegar, garlic, black walnut hulls and various herbs, there is little or no scientific evidence to back these claims—in many cases what few studies have been conducted are not promising.

Good management is your first and best defense: genetic resistance and tolerance, long pasture rotations, good sanitation and top-quality nutrition all help prevent heavy infestations of parasites. If fecal testing does show an acute problem, we offer a number of NOP-compliant parasite treatments that have been successful in published trials.

**Crustal Creek Pivot-FL™** We all know how wet, grey, muddy and unpleasant things can get in the fall and spring. As their bodies struggle to adjust to changing temperatures and damp conditions, animals are more susceptible to internal parasites and disease-causing organisms. Pivot-FL is formulated to support health in all livestock species during these challenging periods of seasonal transition. Yeast cultures stimulate immune response and immobilize harmful microorganisms; kelp and other mineral sources provide nutritional support; and probiotics support gastrointestinal health. MOFGA

8512 A: 5# bucket ($#) for $60.00

Strong Animals Regano Liquid A formulation of oregano oil, which studies suggest may be useful for control of internal parasites, especially coccidia. A small-scale SARE-funded study, conducted by MOFGA’s organic livestock specialist Diane Schivera, showed promising results for coccidia in sheep and goats and for Trichostrongyle (hair worms) and Haemonchus contortus (barber pole worm) in goats. A 2011 Greek study showed that oregano essential oil was an effective coccidiostat in young broilers. Bonus side effect: reduces methane emissions and improves feed efficiency in ruminants. A little goes a long way; see our website for dosage information.

8542 A: gal (10#) for $205.00 *

Vermi-Tox™ An herbal blend from Agri-Dynamics: includes garlic, thyme, peppermint and trace minerals. Preliminary research at California State University in 2010 showed that Vermi-Tox performed as well as injectable Ivermectin in reducing strongyle eggs in the feces of just-weaned goat kids. Akan administered this product to some unthrifty lambs, and within days they shed some alarmingly large tapeworms. Very strong product: follow administration rates strictly. MOFGA

8545 A: quart ($#) for $60.00

Copasure® Copper oxide wire particles in bolus form. Copasure was developed to treat copper deficiencies in cattle, but several studies show COPW effectively controls Haemonchus contortus (barber pole worm) in goats and sheep. Administer one bolus every 6 months. Consult a veterinarian and use caution if administering to sheep; while copper oxide is poorly absorbed compared to copper sulfate, copper toxicity remains a risk in many breeds of sheep. MOFGA

8548 A: 24 2g boluses (0#) for $28.00

8548 B: 12 4g boluses (0#) for $28.00

Lice & Mange Wash A pleasant-smelling enzyme-based treatment for lice and mange in cattle, sheep and hogs. Not effective on ticks. Unlike diatomaceous earth, will not cause respiratory damage. Mix with an equal quantity of water immediately before use and spray animal thoroughly. Repeat in 7 days. MOFGA

8554 A: pint (#$) for $16.00

No-Fly™ An oil-based botanical fly repellent for cattle, horses or other livestock pestered by flies. As a wipe-on or spray, may be applied full strength or diluted 1:1 with mineral oil. MOFGA

8557 A: gal (10#) for $93.00

**MORE HEALTHCARE PRODUCTS**

**Crystal Creek Wound Spray** A soothing mildly antibacterial topical spray for minor wounds and abrasions. May be used safely on mucous membranes: recommended for pinkeye. Formulated with garlic, calendula and comfrey. MOFGA

8572 A: 24 oz (#$) for $22.50

**Crystal Creek Prism™** Topical liquid for more challenging situations, including foot rot, puncture wounds, infected wounds and abscesses. Formulated with tea tree oil, rosemary, lemon, peppermint and cloves. MOFGA

8575 A: pint (#$) for $31.25

**Crystal Creek Veterinary Dairy Liniment™** “Contrast therapy” liniment combines wintergreen, menthol and camphor in an aloe vera base. Supports circulation, soothes sore tissues and reduces inflammation. Reach for this liniment to prevent or treat muscle strains, udder edema or mastitis-related udder discomfort. MOFGA

8551 A: pint (#$) for $18.00

**MISCELLANEOUS LIVESTOCK SUPPLIES**

**Nipple Waterer** Trying to water hogs in an open trough or bowl is an exercise in futility, as the hogs will think you put that water there to entertain them, not to keep them hydrated. Unless you really like carrying buckets, try this approach instead: thread one of these nipple drinkers through the side of a 55-gallon plastic drum and seal with JB Weld’s WaterWeld or 3M’s 5200 Marine Caulk to make an inexpensive, spill-proof, tug-proof and generally pig-proof waterer. In addition to drinking water, in hot weather provide your hogs with a wet area for wallowing.

8577 A: waterer (#$) for $9.00

**Hog Catcher** A key tool for raising hogs outside of confinement. Cable loop slips over the nose and tightens around the upper jaw. Effectively restrains hogs of any size for vaccinations or veterinary treatment.

8599 A: hog catcher (#$) for $25.00

**Boot Covers** Disposable boot covers are a simple, convenient and vital step to protect your livestock against harmful pathogens. Wear boot covers when visiting other livestock farms and provide boot covers to all visitors to your farm who enter areas where animals are kept. Common boot covers should be short, protect properly against liquid contaminants, and rip easily. Our boot covers are made of tough waterproof 3-mil vinyl and extend to the top of most knee boots. Elastic top. One size fits most. Twelve pairs per pack.

8602 A: dozen pairs (0#) for $9.75

**Waterproof Insulated Gloves** The all-around best winter chore glove: no more wet cold fingers! The flocked acrylic lining is soft and warm, and the triple-dipped PVC coating remains flexible even at single-digit temperatures. They extend loosely over the wrists to cover your jacket cuffs. Generously sized: there’s room to wear liner gloves in very cold weather. (Garden gloves are on page 149.)

8605 A: one pair (0#) for $11.75

Neem and Karanja Oils for Livestock Skin Health Neem (8660) and karanja (8663) oils can be used topically on livestock and pets as a parasiticide and for general skin care. Studies show neem can control lice, mites, fleas and other ectoparasites as an antifeedant, landing repellent and insecticide. The non-toxic nature of neem may have a negative effect on conception.

After spring shearing and observe a lasting effect for 3 months. Note: if ingested in significant amounts, neem oil may have a negative effect on conception. Learn more about neem and karanja on page 136.
All these products, ranging from preventive measures such as bird-scaring balloons and flash tape, to last resorts such as copper or PyGanic, are commonly used in sustainable farming and gardening. Also consider row cover for excellent protection from insects. See 8874-8876 for floating row cover.

**ORCHARD AND GARDEN PEST PATROL**

The products in this section provide a degree of pest control and will help certified growers meet the requirements of rule 205.206 of the National Organic Program.

**Bird-Scaring Balloon** Successfully tested against some of Maine’s toughest crows! Multi-colored strips around a menacing metallic eye. According to Cherokee artist Kade Twist, “The iconography on the balloon is indigenous iconography. It’s called an ‘open eye’ and it’s a pattern used from South America to Canada. Another thing is the colors. It just so happens that the balloons use Indian medicine colors.” Kade and two other artists created an installation piece called “Repealing the Peace” consisting of 2,6 inflatable bird-scaring balloons 10” in diameter floating 75’ above the ground in a 2-mile line bisecting the US-Mexican border. People on both sides of the border helped with the installation to create a “metaphorical suture stitching together cultures that have inhabited these lands long before borders were drawn.” The “open eye” motif was reinvented in Japan as a bird-scaring device and is widely used there for that purpose. Our balloons are only 14” in diameter but may deter birds from migrating toward your sweet corn or blueberries. Most effective if moved around the garden from time to time. Protects a 15–20’ radius. 

8615  A: balloon (0#) for $10.00

**Birdscare Flash Tape** Silver and red metalized 7/16” x 90’ plastic tape is a cost-effective way to protect crops from bird damage. Suspend tape in a loose spiral above the crop. Tape flashes and flickers in the wind to resemble fire. Very effective against flocking birds and crows, less so against robins, sparrows and their ilk. Don’t apply too early or birds may get used to tape. 

8618  A: flash tape (0#) for $8.00

**Tree Tanglefoot Insect Barrier** A very sticky substance made of castor oil, natural gum resins and vegetable waxes. Prevents climbing insects from reaching foliage, buds and fruit. Tightly wrap a piece of stiff 3” wide paper around the trunk a foot or two off the ground. Tape this “sleeve” to itself but not to the tree. Smear Tanglefoot on the paper. (Applying Tanglefoot directly to bark could damage the tree.) 15 oz spreads a 2” wide band over 14’ of paper. OMRI

8624  A: 1 oz tub (#) for $17.00

**BugBarrier Tree Bands** Traps insect pests that crawl up the trunks of trees, including spring and fall cankerworms, spotted lanternflies, winter moths, forest tent caterpillars, and—hallelujah!—brown-tail moths. Installs in less than five minutes (trees with shaggy bark require a little extra mess to ensure a tight fit) and may be removed in seconds. Season-long protection without the use of poisons, baits or lures. Less messy and more convenient than other adhesives (like Tangletrap): the tree band keeps unsightly pests hidden from view and does not require regular reaplication throughout the season. Comes with installation instructions. 

8625  A: 30’ kit (16#) for $135.00 +
B: 250’ kit (140#) for $285.00 +

**Red Ball Trap** Use to monitor and trap apple maggots flies. Sturdy 3½” reusable hollow red plastic ball with hook and wire for hanging. To significantly reduce apple maggot damage, hang 1–2 traps per dwarf tree, 2–4 per medium tree, or 4–8 per large tree. Coat traps with Sticky Stuff (below) and hang about eye-level with 18” of clearance between them and any foliage so insects can get a good look at them. 

8627  A: ball trap (0#) for $5.50

**Sticky Stuff** All-weather adhesive used to coat red balls for monitoring and trapping insect populations. Sticky and odorless coating. To remove, use a blunt scraper and wipe with a paper towel or rag after each swipe. Then massage in mineral spirits, baby oil or CitraSolv with a cloth and wipe off. 8 oz covers approx. 2 sq ft, which our staff geometrical calculates will coat at least 7 red ball traps. AYF

8630  A: 8 oz (0#) for $15.00

**Apple Pest Kit** Six red ball traps, apple maggot lure (also available separately on our website) and a jar of Sticky Stuff. Provides pest monitoring for up to 6 trees or pest control for 1–3 trees. 

8636  A: kit (5#) for $45.00

**Codling Moth Trap & Lure** Awfully cute name for an awfully harmful pest! Codling moth (Cydia pomonella) is a pest that damages fruit of apple, pear, walnut, and quince. It is the “worm in the apple.” The larva (caterpillar stage) typically bores through the blossom end or the stem end of the fruit, eating its way to the center and then eating an exit route that fills with frass. Codling moth goes through two generations in most regions of the U.S. The first generation can contribute to fruitlets falling during “June drop.” The second generation damages fruit but does not induce dropping, so affected fruit must be culled at harvest. The sex pheromone lure attracts males only; use for monitoring (as opposed to reducing population and fruit damage). When moths start to collect in the traps, that is the time to start spraying an organic insecticide: Bacillus thuringiensis (8753 Dipel or 8756 Safer Caterpillar Killer) or Spinosad (8759 Entrust or 8762 Monterey Garden Insect Spray). Use 1–2 traps per tree, depending on the size of the tree. Set out at bloom time and keep traps in trees through August, replacing every 4 weeks. Installation instructions included. Set of 2 traps and 2 lures. NEW!

8646  A: traps & lures (0#) for $15.00

**Sticky Strips** Conventional and organic growers alike use sticky strip traps as part of their integrated pest management programs, to monitor the presence and population level of insect pest species to determine when populations are high enough that crops will suffer significant damage and treatment will be economically justifiable. Used in high concentrations on small plantings, sticky strip traps can even control pests all by themselves. Different colors attract different insects. Choose 8648-A yellow traps for aphids, cucumber beetles, fungus gnats, corn root worms or whiteflies; use them with ammonium bacth enhancers (available on our website) for apple and blueberry maggots. Choose 8648-B blue traps for thrips and leafminers; these are uniquely attracted to blue, while most other insects avoid it. 

8648  A: yellow traps, bundle of 10 (0#) for $16.00
B: blue traps, bundle of 10 (0#) for $16.00

★ When you see the star, this item qualifies your entire Organic Growers Supply order for a volume discount. Take an additional 5% off December orders! 
Orders over $100 deduct 5%
Orders over $300 deduct 10%
Orders over $600 deduct 15%
Orders over $1200 deduct 20%

If shipping weight in parentheses is (0#), the item qualifies for free shipping!
Holistic Orchard Spray Kit Guide

Renowned organic orchardist and author Michael Phillips recommends a “holistic” spray regimen (see kit above) to help prevent disease and enhance both tree and fruit growth. For a more detailed discussion of these ingredients and how they work together to serve your fruit trees, see Phillips’ book The Holistic Orchard (Barchured Gardens 2006).

**Fish Hydrolysate (8289):** Feeds soil and arborial food web.

**Neem Oil (8660):** Deters pests and disrupts their life cycles. Neem also stimulates the tree’s immune system, gives nutrients to foliage and feeds the arborial food web. Caution: pears can have a phytotoxic response to neem oil, especially after bloom, so substitute with karanja oil if you’re spraying lots of pears.

**Karanja Oil (8663):** Works synergistically with neem. Enhances immune-boosting phytochemistry of the mixture. Also deters foliar-feeding pests like aphids without affecting pollinators.

**EM-1 (8185):** A probiotic inoculant that colonizes the branches and fruit with beneficial microbes to promote fruit growth and disease resistance.

**Liquid Kelp (8269):** Promotes growth and helps trees adapt to stress.

**RECIPE:**

Makes a 4-gal ready-to-spray batch. Please read through Spray Schedule below, and note that not all ingredients are used in every application. Mix in a 5-gal bucket in this order:

- 1/2 cup (2 fl oz) Neem Oil — warm up to liquefy.
- 2 Tablespoons Karanja Oil
- 1 teaspoon biodegradable dish soap — stir to emulsify neem.
- 1 quart warm water
- 1/2 cup blackstrap molasses (then stir again)
- 1/4 cups Fish Hydrolysate
- 1/5 cup Liquid Kelp
- 1/4 cups activated EM-1
- Add water until you reach the 4 gallon mark, then stir one last time.

**SPRAY SCHEDULE:**

Coat trees including the trunks to the point of runoff, about 1/2 gal per mature fruit tree. We recommend using the Solo Deluxe 4-Gallon Sprayer (9231). Treat this schedule as a starting point; every site is different and requires a custom program. For example, trees with cedar apple rust or brown rot issues require additional spraying for effective management.

1. **When green leaf tips emerge:**
   - Fish, neem, karanja, EM-1 and kelp (all ingredients). Fish, neem and karanja rates can be doubled for this first spray, except on pears.

2. **When buds turn pink:**
   - All ingredients.

3. **When blossoms open (optional):**
   - ONLY EM-1, kelp and half-portion of karanja. To help prevent apple scab and fireblight, to increase Brix, and to attract pollinators.

4. **When petals fall:**
   - All ingredients.

5. **At harvest:**
   - Apply spray generously, making sure to completely drench the trunk up to the first branch (but not the branch itself), as well as the soil at the base of the trunk. Be especially generous when spraying around the base of the trunk: spray enough so that it pools and then slowly soaks in (borer larvae often dwell in the tree just below the soil surface).
   - CAUTION: Do not apply this 2% neem spray to leaves—it could damage them. Be sure to clean sprayer tank and flush line after use.

**News Flash: Neem Naturally Neutralizes Northeast’s Nasty Nafarom Nemesis!**

In many parts of central and northern New England, the roundheaded apple tree borer (Saperda canda) is the #1 enemy of young apple, crabapple and quince trees. The larvae tunnel throughout the wood of the trunk—usually just below or just above the soil or mulch line—wakening the trunk to the point of breakage. Left unchecked, borers usually mean death for young apple trees. We’re grateful that Michael Phillips has identified an effective, organic, nontoxic and easy defense for plantings large and small: pure neem oil, sprayed as a trunk and soil drench at 2% concentration. Spray this “neem drench” once a month.

**June—September**

To prepare a 4-gallon batch of the 2% neem oil drench: Combine 10 fl oz warmed neem oil with 4 teaspoons biodegradable dish soap. Stir vigorously to emulsify. Add warm water until you reach the 4-gal mark, then stir again.

Apply the spray generously, making sure to completely drench the trunk up to the first branch (but not the branch itself), as well as the soil at the base of the trunk. Be especially generous when spraying around the base of the trunk: spray enough so that it pools and then slowly soaks in (borer larvae often dwell in the tree just below the soil surface).

**Recent small-scale trials suggest that painting undiluted neem oil (straight from a warmed bottle) onto the base of tree trunks may be the best borer management technique yet.** Paint undiluted neem generously in early June, and readilize until next year.

Please note that although neem is a powerful tool in the battle against borers, we still recommend getting on your hands and knees to inspect your young apple trees for frass and tunnels at least once a year. If you notice evidence of borer activity, locate the hole or soft spot in the trunk and dig out the larva with a wire. Cut away soft spongy pockets with a sharp knife. Even serious carving is less harmful to the tree than leaving any larvae alive inside.

Michael Phillips now recommends that when you’re on borer duty, bring along a butter knife and a container of solidified neem oil (thick as butter at 60°). If you find borer damage and cut away the affected tissue with a sharp knife, slather on the neem oil to fill the cavity. According to Phillips, “bark tissues and pores in the wood will carry azadirachtins to the borer (if indeed missed), and arrest its further development...the fats in the neem will hasten callusing of the wound.” If the site of this surgery is near the soil line, cover it up with soil, and “know you’ve done everything possible to deter this curse.”
As with so many things, pest management starts in the soil. The fundamental premise of organic agriculture holds that a healthy living soil supports plant health, and healthy plants can best withstand disease and insect pressure. Organic growers also try to mimic and work with natural ecosystems to deflect problems by avoiding monoculture, choosing planting times judiciously, nurturing paradoxical hedgerows where beneficial insects may flourish, creating strains of tomatoes resistant to late blight in meticulously designed on-farm breeding programs, and generally making life a living hell for pathogens and pests. If you do all this perfectly, we promise you will never need to touch a pesticide.

Except when you do. Because sometimes, you might. It can take years to build top-quality garden soil, and sometimes, despite all your best-laid plans, some aspect of management falls through the cracks and problems arise that may threaten your pantry or your livelihood. So organic growers do have an arsenal of pesticides at their disposal. Pesticides approved for organic production differ from most pesticides in that they are derived from natural materials and are also less toxic while you should always read and follow labels and avoid breating, ingesting, or bathing in pesticides, you don’t need to dress like a beekeeper-ailen hybrid to use organic pesticides. If potato beetles are blowing the battle trumpet at your garden’s gate, find your answer in potato beetle dust.

Products in this section come with detailed instructions on their labels. Contact us in case you don’t receive the attached booklet or if the label is illegible. We cannot ship any pesticides to California. Their state government wishes to charge us an ungodly amount of money to do so.

**Monterey Bi-Carb Old Fashioned Fungicide**

Microencapsulated potassium bicarbonate for homeowner control of powdery mildew on all common crops and ornamentals. When Great-Grandma got powdery mildew on her roses, she reached for a box of baking soda (sodium bicarbonate). Potassium bicarbonate is a more effective and less phytotoxic version of this old-fashioned remedy. Use a sprayer that can reach the undersides of leaves (like our 9223 Solo 2L Hand Sprayer), because this product must come in contact with fungal cells to be effective. Less toxic than copper sprays, which are the only other organic fungicide that can cure an existing outbreak. Not registered for commercial use; commercial growers should use MilStop (below), which has the same active ingredient. EPA reg. 54705-10.

**MilStop®**

Broad Spectrum Foliar Fungicide. A potassium bicarbonate formulation to prevent powdery mildew in Alternaria blight, Anthracnose, black spot, Botrytis blight. Cercospora leaf spot, downy mildew, Phomopsis blight and Septoria leaf spot. This product, along with baking soda, provids curative control of powdery mildew as well! Apply at 2/3 oz/gal every two weeks as a preventive, 5#acre weekly to cure an existing infestation of powdery mildew. Garden rate: 2–4 Tbs/2 gal water for 1000 sq ft. Works by dessicating fungal spores and altering pH levels on the leaf surface. Safe for bees. EPA reg. 70870-1-68539, OMRI.

**Bonide® Liquid Copper Concentrate**

A copper fungicide for the home gardener. Copper is a very effective fungicide, but regular use may result in problematic concentrations of copper in the soil or plant tissue: as always, we advise regular soil testing! The recommended dosage is 1/2–2 oz/gal water. Apply enough to wet the whole plant thoroughly: not systemic, requires direct contact to work. Repeat application every 7–10 days and increase the dosage in prolonged wet periods or if signs of disease increase. Please visit our website for other copper products for commercial-scale producers. EPA reg. 67702-2-70051. AYC

8672 A: pint ($#) for $21.50

**Micronized Sulfur**

Used to control scab, powdery mildew and leafspot. Sulfur is not water soluble; the smaller the particle the better it stays in suspension. These particles are less than five microns. To apply, thoroughly mix powder with water and keep the mix agitated constantly or apply as a powder. EPA registration 4-62. Nat’l List.

8684 A: 1# ($#) for $15.00

**Safer® Garden Fungicide**

A liquid concentrate for home gardens, 12% elemental sulfur, a natural fungicide. Use for control of leafspot, rust and powdery mildew on house plants, trees and shrubs. Dilution rates vary depending on the task; use 1–2 oz/gal, which treats 250–350 sq ft. EPA reg. 42697-37, AYC.

8687 A: pint (#$) for $15.00

**THAT® Liquid Sulfur**

(52% S) Takes the prize for Most Injuring Product Name—try asking the warehouse crew “Have you seen THAT?” But we keep it around because it is easy to use in sprays and suspensions than micronized sulfur. Two to four well-timed applications can be effective on apple scab when combined with good orchard sanitation practices. Each gallon contains 3# sulfur. EPA reg. 57538-5, AYC.

8690 A: 2.5 gal (25#) for $71.50

**Regalia® Biofungicide**

Put invasive plants to good use! Regalia’s active ingredient is extract of giant kowtweed, an aggressive plant invader in many countries around the world. Sprayed on your crops, it changes systemic resistance, stimulating bioactive pathways that strengthen the plant structure to fight pathogenic fungi. Reapply every 7–14 days to protect new growth. May also be applied as a soil drench or through drip irrigation to improve root quality and protect against soil-borne pathogens. Labeled for a broad range of fungal diseases in most edible crops. Definitely worth a try to prevent late blight in your potatoes! Various university trials have shown Regalia to be effective for downy and powdery mildew in cucurbits; bacterial spot, septoria leaf spot and powdery mildew in field tomatoes; mummy berry in blueberries; and powdery mildew and Botrytis bunch rot in grapes. Cannabis growers use it as a drench administered with liquid nutrients to prevent fungal diseases, which is probably a good idea since you really don’t want to be smoking copper-based fungicides. Safe for bees. Dilute at 1–4 qt/100 gal water, depending on the application. EPA reg. 84059-3, OMRI.

8693 A: 2.5 gal (25#) for $235.00

**Actinovate® Biological Fungicide**

Supplies beneficial bacteria Streptomyces lydicus, which will colonize the roots or foliage of plants and provide protection against disease and soil pathogens. Controls late blight, pythium, rhizoctonia, fusarium, verticillium, powdery and downy mildew, and other fungal diseases. Dry powder. Apply as a root drench or foliar spray: 1–2 tsp/2 gal water/200 sq ft; or 3–12 oz/150 gal water/acre. EPA reg. 73314-1, OMRI.

8702 A: 2 oz (#$) for $27.50 B: 18 oz (#$) for $150.00

**Monterey Complete Disease Control Biofungicide/Bactericide**

Bacillus amyloliquefaciens formulation for broad-spectrum control of bacterial and fungal diseases on vegetables, fruits, nuts, ornamental trees, shrubs, flowering plants, houseplants and tropical plants grown in and around home gardens or home greenhouses. Not for commercial use. Effectively controls anthracnose, alternaria leaf spot, botrytis, cercospora and powdery mildew. Also helpful for downy mildew, early blight, late blight, fire blight and scab, though unlikely to offer a complete cure for these problems. EPA Reg. 70051-114-54705 OMRI NEW! 8709 A: quart RTU (#$) for $18.00

**Cease® Biological Fungicide**

Why, oh why do we have so much trouble keeping Bacillus subtilis products on the shelf? We had to nix Serenade because we don’t want to give money to Bayer; Companion was great but then the manufacturer went into some endless relabeling process and we haven’t been able to get it. So now we’re trying Cease, which is the same great active ingredient (in this case the QST 310 strain) but packaged as an aqueous suspension. A broad-spectrum preventative product for the control or suppression of many important plant diseases. May be used as a foliar spray or as a drench at 1 gal/100 gal water/acre. Maybe B. subtilis backorders will cease now? EPA Reg. 264-1155-68539, OMRI NEW! 8710 A: gal (10#) for $84.00

**USDA NOP rule concerning disease and pest control**

When using any of these products for pest or disease control, you must have followed the National Organic Program rule 205.206(e). A product being labeled here as allowed is not sufficient to meet standards for organic certification.
Organic JMS Stylet-Oil® High-grade mineral oil for control of powdery mildew, scale, mites and other insects on trees and vegetables. Use as a dormant or summer oil. Kills mildew on contact and protects sprayed surfaces for 10–14 days. Controls plant-feeding mites, leafhoppers, leafminers, fall armyworms and corn earworms. Spray at 3 qt/2 gal/100 gal water depending on application. EPA reg. 65664-1. OMRI

Therm™ 70 A wetting agent and spreader-sticker, made from a liquid concentrate of 70% yucca solids. Increases the longevity and effectiveness of pesticide applications and forces hydrophobic potting media (like dry peat moss) to more readily absorb water. Use in your foliar feeding program to improve the absorption of nutrients and increase resistance to stress. Mix 8 oz/100 gal. It foams a lot, so add as the last ingredient to a tank mix. Toxic to bees and should not be applied to flowering plants, and it is mildly toxic to the pathogens. Recommended for controlling European apple sawfly, codling moth, plum curculio, Japanese beetle, leaf hopper, Colorado potato beetle, thrips and other maleficial insects on fruit and field crops. Effective against cucumber beetles on cucurbits. The white surface also reflects sunlight, preventing sunburn and heat damage. Michael Phillips at Lost Nation Orchard estimates that one 25# bag is sufficient to treat 10 fruit trees for one season. Begin application before petal-fall. Apply 2–3 times the first week to build up a good coating and then every 10–14 days or as the film weathers or new growth appears, more frequently in rainy weather. Maintain a good coat until plum curculio season ends, around June 30 in central Maine. Use 25#/50 gal water for concentrated use; 25#/100 gal water for diluted spray. 1/2#/gal water in hand and backpack sprayers. EPA reg. 61842-16. OMRI

Miller® Nu Film® P Spreader/Sticker Spreader-stickers increase the longevity and effectiveness of pesticide applications. Forms a sticky elastic film that holds the application in contact with leaf surfaces. Can withstand heavy rainfall for 7–10 days, reducing the need to reapply. Will not clog or film that holds the application in contact with leaf surfaces. Can withstand longevity and effectiveness of pesticide applications. Forms a sticky elastic film. May be applied to all crops and in all spray applications, 4–6 oz/100 gal water. OMRI

Miller® Nu Film® P Spreader/Sticker

Therm™ 70

Miller® Nu Film® P Spreader/Sticker

MoleMax® Mole & Vole Repellent 10% castor oil in a base of fuller’s earth. Whether you have moles tunneling in your lawn, groundhogs eating their way through your vegetable garden, or voles girdling your apple trees, this is a simple but effective tool against damaging varmints. Be sure to follow the package instructions! Start by applying the powder to an area unaffected by the pests, and then expand the application to push them out of the area you wish to protect. Rodents are stubborn: may require regular applications for continued effectiveness. One bag protects up to 5000 sq ft. Gallon (Garlic 99.3% garlic juice—Tomatoe Oil) prevents spore germination. (Some plants, like tomatoes, appreciate a perimeter spray. 1/2# dilute with water. Exempt from EPA registration. MOFGA

Organic JMS Stylet-Oil®

MoleMa[Š Mole 	 Vole Repellent

MoleMa[Š Mole 	 Vole Repellent

Concern® Diatomaceous Earth Crawling Insect Killer Prehistoric crustacean powder! The sharp edges cut into insects’ bodies and cause death by dehydration. Insects cannot develop resistance to this mode of action. Especially popular for cutworm protection: just sprinkle around the base of your seedlings. Also useful for ant or flea trouble indoors. OMRI

Control Treatments—the last resort. The pumpkin leaves are crumpling and the dreaded “water-soaked lesions” of petal-fall. Apply directly to ornamentals; on edible crops, apply as a perimeter spray. Dilute 1:9 with water. Exempt from EPA registration. MOFGA

Cultural Prevention

Whether it’s Fusarium and Pythium lurking in your soil, or powdery mildew and late blight blowing in on the wind, pathogenic fungi can cause poor germination, stunted growth, reduced yields, inferior eating quality, cosmetic blemishes, poor storability and melanchoy. Organic growers have a number of strategies for preventing or treating outbreaks of fungal disease. For economy, efficacy and environmental safety, it helps to understand your options.

First try to manage fungal problems without reaching for pesticides:
- Choose improved crop varieties that are resistant to disease.
- Choose high-quality brands of potting soil and compost.
- Do not put diseased plant material in your compost pile.
- Give plants adequate spacing for good airflow through the vegetation. This includes proper weed control. For trees and a few horticultural crops (like tomatoes), pruning helps to maintain good airflow.
- Choose drip irrigation instead of overhead irrigation to reduce moisture on the leaves. Or in smaller gardens, hand-water thoughtfully to prevent over-watering.
- Clean your tools and greenhouse surfaces. High-quality brands of potting soil very rarely carry pathogens, but even clean potting soil is easily contaminated by dirty tools, trays or workbenches.

Preventive Treatments

If you’ve been hammered by Botrytis a couple years running, or if your extension office is reporting late blight in your area, it may be time for a sharper weapon. Many organic fungicides work best as preventive treatments; timely applications will prevent a problem, but by the time you see the first slimy leaves it’s too late. These products are more environmentally friendly than control treatments:
- Biological controls (such as 8702 Actinovate and 8710 Cease) have two primary modes of action. They may colonize the leaf surface and outcompete pathogens; or they may produce exudates that are directly harmful to the pathogens.
- Giant knotweed extract (8693 Regalia) stimulates the plant’s immune system.
- Elemental sulfur (8654 Micronized Sulfur, 8657 Safer Garden Fungicide or 8690 THAT Liquid Sulfur) prevents spore germination. (Some plants, including cucurbits, are sensitive to sulfur.)

Control Treatments—the last resort.

The pumpkin leaves are crumpling and the dreaded “water-soaked lesions” of late blight have appeared on the potatoes—quick, do something! (Or throw in the towel and take a vacation.)
- Potassium bicarbonate (8666 MiStop) kills pathogens and spores by a combination of osmotic pressure, pH and specific carbonate and bicarbonate ion effects. Most effective as a preventive, but may have curative control of powdery mildew.
- Copper products, such as 8672 Bonide, are the only pesticides permitted in organic production that can cure an existing outbreak of most fungal diseases. Copper products should be used only as a last resort: they are mildly toxic to bees and should not be applied to flowering plants, and repeated use of these products can cause an unhealthy buildup of copper in your soil, which is difficult to reverse.

Check our website for a chart summarizing the safety of these pesticides for pollinators.

Go to fedcoseeds.com/ogs, click on Growers’ Library, then Pesticides and Pollinator Safety.
Monterey All-Natural Mite & Insect Control RTU Rosemary and clove essential oils for control of mites (including the dreaded spider mite), whiteflies, aphids, scale, and a variety of insects. Studies have shown that rosemary oil can cause complete mortality of spider mite concentrations that are near phytotoxic to the host plant. Go easy on the stuff, though, because a very heavy application can damage plants. A light spray will suffice. It also repels the mites from uninested areas and disrupts their egg-laying behavior. Popular with indoor growers. Exempt from EPA registration. AYC 8733 A: quart (3#) for $11.75

Ladybug Attractant Let ladybugs do your dirty work! Instead of reaching for pesticides every season, use this pheromone lure to attract ladybugs and other beneficial insects that will eat aphids, plant lice, scale, and other pests. Wearing gloves, remove the lure from the packaging and remove the cap. Attach the twist tie and hang the lure from any plant in your greenhouse or garden. Each lure covers at least a 6 circle; replace lures after two to three weeks. As with most holistic solutions, this is not a quick fix for existing pest outbreaks! Also, ladybugs and other beneficials are clever at hiding from predators, so you may not be able to notice a sudden influx of mercenary insect soldiers. However, after a few weeks you should see a noticeable drop in aphid damage. Do not use in conjunction with broad-spectrum pesticides. You don’t want to hurt your new garden friends! 8734 A: 3 lures (0#) for $13.50

General Hydroporons AMax® Botanical Insecticide/Miticide/Nematicide with azadirachtins A & B derived from neem oil. AMax is more processed than 8660 Neem Oil, but this liquid mixes more easily and is registered as a pesticide. Broadly labeled for most insects and parasitic nematodes on edible and non-edible crops. Offers rapid knockdown of spider mites and cucumber beetles: same quick effects as 8765 PyGanic, but with a lower price tag and less toxic to bees. Mix at 1–2 oz/gal water and apply as a foliar spray or a drench. 4 oz size is not labeled for commercial use. EPA reg. 71608-1-81268. OMRI 8735 A: 4 oz (0#) for $30.00 B: quart (3#) for $125.00

Safer® Insecticide Soap Commercial Concentrate Biodegradable contact insecticide effectively controls mites, aphids, earwigs, lace bugs, leafhoppers, mealybugs, scale, spider mites, thrips, tent caterpillars and whiteflies. Fatty acids penetrate insects’ soft outer membranes and disrupt normal functions. Use approx. 2/oz/gal water. Hard water can reduce soap’s effectiveness; if your tap water is hard, use distilled water instead. EPA reg. 42697-60. OMRI 8738 A: pint (3#) for $18.00

Monterey Sluggo® A blend of iron phosphate, a naturally occurring soil mineral, with snail and slug bait. Many species of snails and slugs are attracted to the bait, leaving their hiding places and plants to feed. When they ingest even small quantities of iron phosphate, they cease feeding and die a quick death. Use around or in the soil around trees and shrubs, ground or lawn soil should be moist when applying. Apply at 1#1000 sq ft, 1 tsp/sq yd. Reapply as the bait is taken. EPA reg. 67702-3-54705. OMRI 8741 A: 1# (0#) for $11.50 B: 5# for $30.00

Monterey Sluggo® Plus Insect, Slug & Snail Pellets. The addition of a small amount of spinosad (0.07%) greatly increases the effectiveness and scope of Sluggo. Apply evenly 1#16 oz 1000 sq ft to control slugs, snails, earwigs, cutworms, crickets, sowbugs, pillbugs and some species of ants. Best applied at evening to catch the late diners. EPA reg. 67702-24-54705. OMRI 8744 A: 1# (0#) for $16.00 B: 5# for $40.00

Milky Spore Powder Japanese Beetle Control Ready to use. Works on Japanese Beetle grubs but not the adults—they are noticeable only over the long term. (Try 8765 Pyganic or 8768 Bug Buster-O for immediate control of adult beetles.) The active ingredient is spores of the bacterium Bacillus popilliae. Spread on the lawn, the spores collect on grass roots and are eaten by the Japanese beetle grubs. The grub dies 7–21 days after feeding, releasing billions of new spores. For best results treatment should be community wide. Apply 1 teaspoon of powder every 4 in 4 rows throughout the infested area. EPA reg. 63191-1. AYC 8747 A: 10 oz (0#) for $47.50

DiPel® DF Biological insecticidal dry flowable wettable powder. Commercial strength Bt (Bacillus thuringiensis subsp. kurstaki), approx 32,000 IU/mg. Labeled for a wide variety of caterpillar and moth pests on practically every agricultural crop there is. Apply at 14–20 per 100 gal per acre or 12–4 tsp per gal per 500 sq ft. EPA reg. 73049-39. OMRI 8753 A: 1# (0#) for $29.75

Safer® Brand Caterpillar Killer For Trees, Shrubs & Vegetables Concentrate II. Liquid concentrate Bt (Bacillus thuringiensis subsp. kurstaki). Mix 1–4 tsp/gal of water depending on the intensity of the infestation. Labeled for a variety of caterpillar pests on most vegetables, ornamentals, and shade trees. Apply at first sign of activity and repeat as needed up to harvest. Best applied in the afternoon as Bt breaks down in direct sunlight. EPA reg. 70051-106-42697. OMRI 8765 A: pint (3#) for $18.50

Monterey Garden Insect Spray Spinosad is a mixture of spinosyn A and D metabolites produced during fermentation by Saccharopolyspora spinosa, an actinomycete (fungus-like) bacterium discovered in Caribbean soil. The spinosyns demonstrate excellent insect control with very low toxicity for other organisms. Spinosad is selectively active on insects of the orders Lepidoptera (caterpillar pests) and Diptera (flies) as well as some Coleoptera (beetles) and Hymenoptera (sawflies, wasps, ants, and alabal bees). Targeted insects include leafminers, corn borers, leafrollers, cabbageloppers, armyworms, Colorado potato beetles, thrips, apple maggots, coining moths, lesser apple worms, and oriental fruit moths. Effective for a wide range of crops. Because it can be toxic to bees, avoid spraying during flowering and pollination. Apply this 0.5% solution of spinosad at 1–2 oz/gal for all crops. Registered for home garden use only; if you need a commercial product, please visit our website for Entrust. EPA reg. 62719-314-54705. OMRI 8765 A: quart (3#) for $205.00

PyGanic® Crop Protection EC 5.0 II Pyrethrin is a botanical insecticide derived from a chrysanthemum, Tanacetum cinerariifolium, grown in Kenya and Tanzania, with low toxicity for humans and other vertebrates. PyGanic is a 5% pyrethrin formulation with a rapid knockdown and high kill rate. Beetles break down quickly so the toxic effects are short lived. May be used up to 12 hours before harvest. Effective for Colorado potato beetle, leafhopper, cucumber beetle, flea beetles, and other pests. This is a broad-spectrum insecticide so results are not limited to pests; it’s a poison, so use wisely. Application rate is 4/oz–18 oz/acre depending on pest and severity of infestation. EPA reg. 1021-1772. OMRI 8765 A: quart (3#) for $205.00

Monterey Bug Buster-O When the squash plants are eaten halfway to the ground or you can’t see the rose bushes under the layer of Japanese beetles, it’s time to reach for the heavy artillery. Effective and rapid knockdown of a broad array of insects both pestilential and beneficial, so exercise caution. We’re not fans of the silly name, but we’ll forgive Monterey for their ill-conceived branding because we needed a pyrethrin insecticide at a price that’s affordable for the home gardener. Apply 1–1.4 oz/gal of water/1000 sq ft. Not recommended for commercial use. EPA reg. 71608-1-81268. OMRI 8768 A: 8 oz (0#) for $35.00

If shipping weight in parentheses is (0), the item qualifies for free shipping!
Kord® Fiber Grow Garden Paks: Made of recycled cardboard fiber, these handy planters breathe much like clay pots. Reusable with care—one customer says he got ten years out of his before he had to order new ones. Inside dimensions 6x4x4/ x2/4". 6 nest in a 1020 Tray. Biodegradable, but not allowed for planting pot-and-all because a synthetic binder is used. MOFGA says it is for organic seedlings if you remove the seedlings from the tray before planting, check with your certifier to see if they agree.

8781 A: 6 (0#) for $4.00
B: 100 (10#) for $38.00
C: 300 (35#) for $105.50 ★

CowPots™: Tired of cleaning up all the brittle plastic after transplanting? Concerned about the effects of peat mining on the environment, and on the climate? Are your seedlings getting root-bound in their pots? CowPots present an innovative alternative for the eco-conscious farmer and gardener. Made in the U.S. entirely from cow manure. Sadly, complaints about above-ground durability led the manufacturer to alter their process in such a way that these pots are Not Allowed for certified-organic production.

CowPots 4” Square 4/4” tall.
8796 A: 20 pots (0#) for $10.00
B: case of 330 (60#) for $125.00 ★

CowPots Six-Pack Approx. 9x6", 3” tall.
8799 A: six 6-packs (0#) for $7.00
B: case of 120 (60#) for $100.00 ★

CowPots 3” Square 3” tall.
8802 A: 20 pots (0#) for $7.00
B: case of 1176 (60#) for $250.00 ★

CowPots 3” Round 3/4” tall.
8805 A: 20 pots (0#) for $7.00
B: case of 840 (60#) for $215.00 ★

Transplanter Pot: Like our regular fabric pots, but with a slit side to allow for easier transplanting without disturbing the root ball. Slit sides overlap so the pot holds the growing media without leaking. By popular request from our walk-in customers.

8807 A: 1 gal (0#) for $3.00 ★

Fabric Pots: Non-woven fabric pots provide excellent support to growing plants while allowing air to flow through the pot wall, preventing root circling and helping to aerate the growing medium. Lets water drain thoroughly. Fantastic for indoor growing. Choose from 1-gal or 3-gal plain round pots for young plants; 5-gal or 20-gal round pots with build-in handles for easier maneuvering; and 45-gal or 100-gal plug round pots for those monster plants. Other sizes (up to 1000 gal!) are available by the case by special order.

8808 A: 1 gal (0#) for $3.00
B: 3 gal (0#) for $4.00
C: 5 gal (0#) for $7.00
D: 20 gal (0#) for $15.00
E: 45 gal (2#) for $18.50
F: 100 gal (2#) for $28.75

Heavy Duty Plant Tray: These sturdy 11x22x2/4" khaki plastic trays will last for years and are strong enough to hold 50 2" soil blocks without strain. Good for window-sills because they have no drain holes. Store out of sunlight when not in use; will fade and weaken if left in the sun over the summer.

8832 A: one tray (0#) for $11.25 ★

Heavy Duty Dome: Sturdy plastic domes from the manufacturer of our heavy-duty plant trays. Not as rigid as the trays, but much stronger than 1020 Domes (found on our website). 3/4" tall.

8835 A: one dome (#) for $6.75 ★

Mesh Bottom Trays: Like our standard 1020 trays (on our website), but with open mesh bottoms. Favored by many growers for soil block propagation as roots will air-prune, or can be used to support plug flats. Used in hydroponic production to suspend cuttings or young plants in nutrient solution.

8836 A: 5 trays (#) for $12.50 ★
B: 50 trays (30#) for $100.00 ★

Precise Heat Mats: A good heat mat makes the difference between success and complete failure when starting crops of tropical ancestry, including most Solanums (tomatoes, peppers, eggplants, husk cherries) and Cucurbits (squash, melons, cucumbers). Agripal heating element and adjustable dial thermostat. Provides an extremely uniform precise temperature over its entire surface and uses 20 watts of electricity per foot. The control unit has a flexible 3’ tube with a temperature-sensor bulb to insert into the soil; set the dial to desired soil temperature. Built-in GFCI shuts off the heater if dampness causes a short. Seed trays can be placed directly on the tape. Rolls up easily for storage. Both lengths 11” wide.

8838 A: 4 ft mat (5#) for $150.00 ★
B: 8 ft mat (#) for $180.00 ★

LADBROOKE SOIL BLOCKERS

The genuine article, made in England by Ladbrooke Ltd. The soil block system eliminates annual costs for peat pots or six-packs, allows for easy transplanting, and eliminates root spiralling. Vermont Compost Fort Vee and 8365 GreenTree Ag Blend are both popular soils to use with soil blockers.

Mini 5 Blocker: Makes five 1/2” soil blocks in one stroke.

8841 A: blocker (2#) for $25.00 ★

Micro 20 Blocker: Makes 20 micro-blocks per stroke in a 3x4” area. Use when your space is limited or when you want a large number of transplants. Micro-blocks are easier to warm, speeding germination, and can be inserted into 2” soil blocks to continue seedling growth.

8847 A: blocker (#) for $22.50 ★

Micro Blocker Inserts: Make 2” soil blocks ready to receive micro-blocks. Set of square plastic inserts can be screwed into Mini 4 or Multi 12 blockers. Pop out the plastic nipples on the blocker and screw in these inserts.

8850 A: package of 4 (0#) for $6.50 ★

Multi 12 Floor Blocker: Makes twelve 2” blocks at one time. Very helpful for large production. Long handle means no stooping.

8853 A: blocker (10#) for $167.50 ★

Multi 20 Floor Blocker: Makes twenty 1/2” blocks at one time. Long handle. Great space-saver for starting lettuces and greens.

8856 A: blocker (10#) for $167.50 ★

See our website for more pots, trays & domes:
Jiffy Peat Pots (8784-8793)
Plastic Six Packs (8814)
Plastic Plug Flats (8817-8820)
1020 Plant Trays with Drain Holes (8823)
1020 Plant Trays without Drain Holes (8826)
Domes for 1020 Trays (8829)

Use weight in parentheses (#) to calculate shipping charge.
GARDEN & ORCHARD FABRICS

Treillis Netting 7" reach-through nylon mesh with a strand strength of 60# for tomatoes, climbing beans, peas, cucumbers and luvas. Weave a strand of fence wire through the top for extra support. May also be used horizontally to provide support for plants at risk of lodging. Will last for many years if you can avoid "the tangles!"

8859  A: 5x30' (0#) for $14.75
B: 5x60' (0#) for $25.75

Bird-X® Orchard Netting Throw over trees or bushes and fasten to protect fruit or berries from birds, deer and possibly coons. Strong and durable black polypropylene 5/8" mesh with UV inhibitors.

8862  A: 7x20' (0#) for $10.25
B: 14x14' (0#) for $11.25
C: 28x28' (0#) for $34.50

Hemp Twine Waxed hemp twine. Cut down vines along with the twine and compost the whole tangle. Promote the rediscovery of hemp as a great fiber plant at the same time! 48# test weight, perfect for tying up plants and marking rows.

8867  A: 265' (0#) for $10.00

Poly Garden Twine Strong cheap multipurpose white poly garden twine. 6300' of sheer usefulness in a cardboard box with handy belt slots so you can wear it instead of carrying it. Not biodegradable, so do remove it at the end of the season.

8868  A: 6300' (3#) for $13.75

Deer-X® Protective Fencing Use as temporary fencing to protect plantings and fruit crops from deer, birds and other pests. Same durable black polypropylene 5/8" mesh with UV inhibitors as Orchard Netting above. The lightweight mesh makes the fence almost invisible and startling to invading critters.

8855  A: 7x100' (0#) for $25.00
B: 14x75' (2#) for $25.00

Earth Staples The garden is full of rocks except when you need some to anchor the row cover. 6" steel wire staples neatly hold down landscape fabrics of all kinds.

8883  A: bundle of 25 (0#) for $6.00
B: bundle of 100 (4#) for $14.00
C: case of 1000 (35#) for $96.00

ROW COVERS

Floating Row Covers Think of row covers first when seeking pest protection. Protects crops from flea beetles, cabbage worms, potato beetles, leafhoppers, even woodchucks. Also provides a gently warmed, protected environment to get sensitive crops like melons and peppers established in the field (must be removed at blossoming on most fruiting crops to ensure pollination). We are transitioning from Agribon™ AG-19 to Covertan PRO 19, because it offers better durability and greater water permeability for the same price. Both fabrics are soft and pliable, UV-stabilized, offer about 4' of frost protection, and weigh 0.55 oz/sq yd. Agribon+ transmits 85% of sunlight while Covertan transmits up to 90%. Can last 2–3 seasons if you take care of it: remove it from the field as soon as possible, dry it out, and store it suspended so that rodents can’t nest in it over the winter.

Agribon™ AG-19
8874  A: 83'x50' (2#) for $16.00
B: 83'x250' (10#) for $55.00
C: 83'x1000' (35#) for $150.00
D: 83'x2000' (70#) for $350.00

Covertan PRO 19 NEW!
8876  A: 7'X50' (2#) for $16.00
B: 7'X250' (10#) for $55.00
C: 7'X1000' (35#) for $190.00
D: 7'X2000' (70#) for $350.00

Clear Slitted Plastic Row Cover Place over wire hoops to form small tunnels, creating a greenhouse environment to promote the growth of heat-loving plants. Self-venting on hot days. Offers a few degrees of frost protection. Especially recommended for sweet potatoes and long-season peppers. Can be reused with care. 1.1 mil.

8877  A: 6x50' (2#) for $13.75
B: 6x250' (10#) for $60.00
C: 6x1000' (40#) for $170.00

Galvanized Wire Hoops For building tunnels with slitted plastic or Covertan. Most effective if spaced every 5' or less. “Hoops” are shipped as straight 74" flexible rods of 10-gauge wire. Stick one end in the ground and then stick the other end in at the desired tunnel width to form a hoop. (The shipping weights for the hoops reflect the cost of shipping these awkwardly long bundles.)

8880  A: bundle of 20 (36#) for $35.00
B: bundle of 100 (50#) for $115.00

Fedco Supports MOFGA
The Maine Organic Farmers and Gardeners Association is a broad-based community that educates about and advocates for organic agriculture, illuminating its interdependence with a healthy environment, local food production, and thriving communities. Fedco is a longstanding part of that community (we even inherited the Organic Growers Supply operation from them!) and a regular donor. We encourage you to join us in supporting them by making a donation with your OGS order, either online or on the order form on page 165. When you see the star, this item qualifies your entire Organic Growers Supply order for a volume discount. Take an additional 5% off December orders! Orders over $100 deduct 5%
Orders over $300 deduct 10%
Orders over $600 deduct 15%
Orders over $1200 deduct 20%

Hemp Twine 74 flexible rods of 10-gauge wire. Stick one end in the ground and then stick the other end in at the desired tunnel width to form a hoop. (The shipping weights for the hoops reflect the cost of shipping these awkwardly long bundles.)

8888  A: 6300' (3#) for $13.75

If shipping weight in parentheses is (0#), the item qualifies for free shipping!

fedcoseeds.com
**Biodegradable Tomato Clips** Easy to use and even easier to dispose of! Use these ½" (internal diameter) clips made of non-GMO cornstarch to attach tomatoes (or cucumbers, or melons, or other thin-vined plants) to your trellis system. If you use a biodegradable material (like Hemp Twine) for your trellises, you can just cut the whole thing down at the end of the season and let it degrade in place, saving the labor of picking through the vines and strings for bits of plastic. The clips will fully compost in 13 weeks in suitable conditions. This lack of stability demands caution: do not leave a bag of these clips sitting in the sun or they might melt together! Certified organic operations must dispose of these clips as they would plastic clips, but at least they’re made of renewable materials and won’t pile up in the landfill.

**Wire Weeder** Like a stirrup hoe, these weeders make quick work of small weeds, slicing the stem from the root just below the soil surface. Unlike a stirrup hoe, they don’t have moving parts to wear down, and they are light as a feather (though plenty strong). Not intended for hacking through tough roots or into compacted soil, so please don’t use them that way. Akta loved the one he brought home: he found it ergonomic and effective. Both versions have a 5" wide head and an aluminum handle with a comfortable foam grip. The hand weeder has a 10" handle (overall length 14") and the long weeder has a 56" handle (overall length 60"). Made in Vermont by Two Bad Cats, a father-son team who engineer and manufacture well-made ingenious tools for the serious gardener and small farmer. See more tools by Two Bad Cats on p. 148.

**Asparagus Knife** 1½ x 7" blade, 15" handle with a pistol grip. A wicked-looking tool, but perfect for harvesting asparagus. Stick the knife into the soil against the stalk to harvest it a couple of inches below the ground. The blade is slightly concave so that it will slice the stalk cleanly. Manufactured in the USA.

**Broccoli Knife** Specialized trapezoidal shape with two cutting edges slices plants off at ground level for clean quick harvesting or nips sideshoots to continued growth. Stainless steel blade has high carbon content for easy sharpening. Blade 7" long, 2" wide at widest point; handle 4½" long in bright yellow plastic for good visibility in the weeds. Made in Taiwan.

**Weeding Knife** or *Hori-Hori* Someone using heavy equipment could bend this digging tool, but no amount of prying in the garden will. Thick concave steel blade with bevelled edges tapering to a point, one semi-sharp smooth edge and one serrated edge. The 6½" blade extends 2½" into the wooden handle to which it is securely riveted. Susan and David’s favorite hand tool, still in good condition after decades of hard use and benign neglect. Originally designed to extricate plants for bonsai from Japan’s mountains. Good tool for planting bulbs and strawberry crowns, for general cultivating and for sawing small roots or heavy stems, though not as sharp as a knife or a saw. Comes with a black vinyl sheath with a belt loop. 11¼" long overall. Manufactured in Japan.

**EZ-Digger™** Unique low-shaped design from Korea, where it is called *Ho-Mi* (little ground spear), features a 7" long, 3" wide convex blade tapering to a pointed end, which is great for removing deep roots and sod and for cultivating soil. The convex edge is used for light surface weeding and redistribution of soil. Makes cultivating around trees or in the garden a joy. Fedco Trees founder John Bunker keeps one in his back pocket whenever he’s in the orchard or garden and every apprentice at his Super Chilly Farm receives an EZ-Digger upon arrival. Designed for right-handers, but many lefties enjoy using one. If the handle comes loose, reinsert blade tang and rap handle forcibly on a hard surface to reset it. Handle length 4½". Manufactured in Korea.

**Soil & Seed Sieve Set** A 12" diameter stainless steel frame with 3 interchangeable screens of 4, 5 and 10 mesh/inch. Use to prepare potting mix or for seed cleaning: the screens singly or together can hold up seed while the chaff drops out or vice versa, Manufactured in Japan.

**ASHFIELD TOOLS**

Ashfield Tools, founded by Ned James, is a small company in Ashfield, MA, offering a line of high-quality garden tools, handcrafted from locally supplied materials. Each is hand-forged with high-carbon tool steel. The birch handles are made in Maine. These tools are sturdy and long-lasting, designed to work well and to enhance the gardening experience.

**Weeder** The 3½ x ¼" blade is set at right angles to the shaft with a bevelled sharpened edge to separate weeds from their roots just below the surface. Gene’s new favorite hand tool! Overall length 12".

**3-Pronged Cultivator** Classic design to loosen the soil prior to planting or to cultivate around plants to improve moisture penetration and disrupt weeds. Overall length 12".

**Trowel** Blade is 5¼ x 2¼" tapered to a point, perfect for planting bulbs and transplants or removing taprooted weeds. Overall length 12".

**Soil & Seed Sieve Set** A 12" diameter stainless steel frame with 3 interchangeable screens of 4, 5 and 10 mesh/inch. Use to prepare potting mix or for seed cleaning: the screens singly or together can hold up seed while the chaff drops out or vice versa, Manufactured in Japan.

**ASHFIELD TOOLS**

*For a complete line of kits, snaths, blades and good advice we recommend you contact:*

Scythe Supply
496 Shore Rd Perry ME 04667
207-853-4750
scytheSupply.com

Use weight in parentheses (#) to calculate shipping charge.


**Supplies for monitoring orchard pests are on p. 135.**

**Bee Hut Bee House** An estimated 15% of the combined value of U.S. fruit, nut, vegetable and field crop production can be attributed to pollination services provided by native bees. This percentage is likely to grow as honeybees are challenged by mites, disease, pesticide exposure and colony collapse. Customer George Schellinger wrote us last winter from Hancock County, ME, informing us that the bee nesting boxes we’d been offering were preferred by mason bees; larger size are for spring mason bees; smaller for summer leafcutter bees. Either bundle will fill one BeeHut. Use fresh reeds each year! NEW!

**8961 A: bee house (2#) for $20.00**

**BeeHut Reeds** Larger size are for spring mason bees; smaller for summer leafcutter bees. Either bundle will fill one BeeHut. Use fresh reeds each year! NEW!

**8963 A: 20 larger reeds (0#) for $10.00**

**8964: 30 smaller reeds (0#) for $10.00**

**Tree Guards** Spiral plastic guards protect tree trunks from mice and voles in the winter. Remove them from apple trees during the growing season lest they provide a habitat for borers. 24” high. Can be cut with scissors to customize height.

**8965 A: bundle of 4 (2#) for $4.00**

**Limb Spreaders** These galvanized metal limb spreaders are more durable than the plastic versions we used to carry. Use them to establish optimal crotch angles on young tree branches. The patented tip style has a sturdy nylon handle with satin finish; overall length: 6.7; manufactured in Italy.

**8968 A: bundle of 12 (0#) for $13.00**

**Tree Staking Kit** Stake your claim on a healthy root system! Staking is recommended for dwarf and semi-dwarf fruit trees, trees in windy sites, trees that develop a leaning habit, and trees planted in shallow or loose soil. Homemade stake systems are an option, but they’re not necessarily optimal. The commercial-strength rubber support lines in this kit allow the tree to sway slightly, must as nature intended, which promotes the growth of a strong and evenly distributed root system. Rated for trees up to 2” in trunk diameter. Lines are easy to unhook for pruning, weeding, mulching. Etc. Kit includes supplies for staking one tree: three 4½” rubber lines (½” diameter), three metal hooks, three #11 metal stakes, and installation instructions. NEW!

**8969 A: staking kit (2#) for $25.00**

**Grafting Kits** The basics you’ll need to graft fruit trees (or any woody plants that can be propagated by grafting). Includes one right-handed grafting knife with single-bevel blade for smooth, flat cuts (plus it’s micro-beveled so it will hold its edge through sustained use); one bottle of Treekote Grafting Sealer to prevent the wood from desiccating; and one roll of grafting tape to secure the graft union: ½” Parafilm for bench grafting (Kit A) or ⅜” PVC tape for topworking (Kit B). We include a sheet with instructions and illustrations for how to bench graft or how to topwork, based on whether you buy A or B. Try 9007-9013 Felco pruners for trimming scionwood and rootstock and 9040 Silky Pocketboy saw for topworking. (It has very fine teeth for clean cuts.) Check out our Trees catalog for scionwood and rootstock.

**8971 A: bench-grafting kit (3#) for $24.75**

**8971 B: topworking kit (3#) for $24.75**

**Parafilm® Grafting & Budding Tape** Very stretchy ½” or 1” wide tape holds graft union firmly together. Parafilm, a low-molecular-weight polyethylene product, is relatively benign in the environment, unlike PVC. It also does not need to be cut off the tree because it decomposes and falls off on its own in one to two years.

**8974 A: ½” tape, one roll (0#) for $3.00**

**8974 B: ½” tape, case of 12 rolls (2#) for $21.00**

**8975 A: 1” tape, one roll (0#) for $6.00**

**8975 B: 1” tape, case of 6 rolls (2#) for $21.00**

**PVC Grafting Tape** Some grafters report that Parafilm tape is not strong enough for larger grafts. PVC tape is much stronger than Parafilm and will not break down. This makes it suitable for topworking. Leave it on the tree until the graft is well established, then remove. 1/2”x300’.

**8977 A: one roll (0#) for $4.25**

**Rubber Grafting Strips** Rubber strips are more suitable for large grafts and supply more even pressure across the entire grafted area than tape does. Doesn’t break down as quickly as Parafilm. Some grafters like to cover a rubber strip with Parafilm.

**8980 A: 4x½”x700” ct. (0#) for $9.50**

**8980 B: 5x¼”x300” ct. (0#) for $9.50**

**8980 C: 6x⅛”x110” ct. (0#) for $9.50**

**Grafting Wax** Use to seal and protect new grafts from the elements. Does not need to be heated, just work in your hands until soft and pliable and then fill any spaces and cracks.

**8983 A: 7 oz (0#) for $11.00**

**Trekente™ Grafting Sealer** Water-soluble graft dressing emulsion. Dries quickly. Used extensively and successfully with any kind of grafting. (We do not recommend painting and applying compounds on pruning cuts or tree wounds.) Screw-on lid and attached brush applicator.

**8986 A: pint (0#) for $12.50**

**Choose the right (or left) grafting knife!** Deciding between a “right-handed” or “left-handed” grafting knife is more subtle than simply ordering RH if you’re a righthand and LH if you’re a lefthand. You must consider which feels like a more natural slicing motion to you: pulling toward yourself, or pushing away from yourself. If you’re not sure, try practicing with a utility knife. Fedco’s resident grafting instructor notes that in most cases, pulling toward gives the grafter more knife control than pushing away. On the other hand, your mother said you should never cut toward yourself. Whether slicing toward or away from yourself, the beveled side should face up and the flat side should face down. Here’s a simple key to help you decide which knife to get:

- Prefer to hold knife in LH and cut toward yourself: Style A (RH)
- Prefer to hold knife in RH and cut away from yourself: Style B (LH)
- Prefer to hold knife in LH and cut toward yourself: Style B (LH)
- Prefer to hold knife in LH and cut away from yourself: Style A (RH)

**Grafting Knife** To shape a stick of scionwood for grafting, you need a knife that is beveled on one face so the cut is as flat as possible. We offer “right-handed” and “left-handed” grafting knives—see explanation above to decide which knife will suit your style of grafting.

- **8989-A (right-handed):** 2½” stainless steel blade; ⅜” alloy-lined nylon handle with satin finish; overall length: 6½”, manufactured in Switzerland. 8989-B (left-handed): 2½” carbon steel blade; ⅜” fiberglass-reinforced nylon handle with satin finish; overall length: 6.7; manufactured in Italy. Why is B more expensive than A? The righties are manufactured on a much greater scale than lefties. Also, the lefty knife features a precision-bark-lifter tab.

**8989 A: right-handed knife (0#) for $16.00**

**8989 B: left-handed knife (0#) for $35.00**

**All-purpose Budding Knife** Pointed curved-end 2” stainless steel blade for cutting buds and slicing insertion slits in the bark of the host rootstock. Round-tipped solid brass 1” barb-opener blade for prying open slit to insert the bud without slicing the bark. ⅜” alloy-lined nylon handle. Right-handed. Manufactured in Switzerland.

**8992 A: budding knife (0#) for $27.00**

**World’s Best Fruit Picker** We’ve been through a few different models of fruit pickers; it turns out people are picky about their pickers! We introduced this one a couple of years ago and it seems to make everyone happy. Foam-lined cradle and narrow curved teeth; the handle is fiberglass and telescopes from 6½” to 13” to pick those pears way up high. Manufactured in Taiwan.

**8998 A: picker (35#) for $35.00**

**Deluxe Picking Bucket with Harness** Comfortable wide cloth straps distribute the weight of your harvest across your back and shoulders while you pick. Drawstrings unlatch and gently release fruit from the bottom of the bucket, so you don’t have to lift and dump. Foam-lined bucket has a Cordura® nylon skirt & bottom. ¾ bushel capacity (about 32 lbs of fruit). Manufactured in the USA.

**9001 A: bucket (#7) for $105.00 ★**

**Microbrite Plus Pocket Microscope** This ultra-portable user-friendly pocket scope magnifies 60–120x, with a powerful LED light to deliver a bright clear image. Many loupes and pocket scopes require expensive specialty batteries: this one runs on a single AA battery (not included).

**Essential tool for observing trichome color to determine harvest timing; also useful for identifying miniature pests, detecting the early stages of fungal or bacterial infections, reading the tiny print of this catalog, or just messing around with the kids. 59mm x 30mm x 92mm.**

**Microbrite Plus Pocket Microscope (0#) for $16.00**

If shipping weight in parentheses is (0#), the item qualifies for free shipping.
**FELCO® PRUNERS**
Imported from Jura, Switzerland, Felco tools set the standard for professional quality, precision and durability. Made with high-quality steel and forged metal alloys, they feature extensively researched ergonomic designs so they work well and will last a you a lifetime.

**Felco F160 Pruners** A very lightweight pruner with composite fiber handles, hardened steel blade and anvil. Angled head and handles are ergonomically designed to reduce the strain of hours of pruning. Two sizes: 160S for smaller hands and 160L for larger hands. May be used in either hand.  

- **9004 A:** 160S smaller (0#) for $40.00  
- **B:** 160L larger (0#) for $40.00

**Felco #6 Pruners** Designed for a smaller hand, otherwise just like the heavy-duty Felco #8 pruners. Customer Anne Greensfelder, an occupational therapist specializing in hands, explained that most women who use the #8 can’t open it all the way so don’t get the full advantage of its leverage. Ideal for pruning grape vines, shrubs and young trees. The smaller size allows cuts closer to the stem. Right-handed.

- **9007 A:** #6 right-handed (0#) for $60.00

**Felco #7 or #10 Pruners** The handle that sits on one’s fingers rotates to allow fingers to move naturally, reducing the fatigue and blistering brought on by a hard day’s pruning. Requires less effort than conventional pruners.  

- **9010 A:** #7 right-handed (0#) for $85.00  
- **B:** #10 left-handed (0#) for $85.00

**Felco #8 or #9 Pruners**  

- **9013 A:** #8 right-handed (0#) for $65.00  
- **B:** #9 left-handed (0#) for $65.00

**Felco #300 Flower Shears**  
Useful for light pruning, deadheading and cutting stems for arranging. Manufactured in Italy.  

- **9016 A:** flower shears (0#) for $19.00

**Felco #310 Harvest Shears**  
Fruit and vegetable harvesting shear, lightweight with narrow needle-nose head for harvesting grapes and other produce. Manufactured in Italy.  

- **9019 A:** harvest shears (0#) for $19.00

**Felco #200-A Loppers** An excellent lopper with 17” tubular aluminum handles capable of cutting branches up to 1½” diameter. Comfortable to handle, easy to use. The danger is not knowing when to stop. Manufactured in Switzerland.  

- **9022 A:** loppers (5#) for $100.00

**Ratcheting Loppers** Lop with ease! These loppers use a simple ratcheting mechanism to increase the pressure from your grip five-fold. One red handle and one black handle: hold the black handle still and move the red handle back and forth several times. The branch will cut cleanly with less strain and fatigue than with traditional loppers. Accommodates branches up to 1½”. Overall length 25”. Comfortable rubberized grip. Manufactured in Taiwan.  

- **9023 A:** ratcheting loppers (5#) for $55.00

**Ratcheting Pruners** If you have arthritis or low upper-body strength, you may find pruning jobs a challenge. Simple physics to the rescue! These pruners use a simple ratcheting mechanism to increase the pressure from your grip five-fold. Simply depress and release the handle several times and the branch will cut cleanly. Accommodates branches up to 1”. Overall length 8”. Comfortable rubberized grip and a handguard to protect your knuckles from thorny bushes. Manufactured in Taiwan.

- **9024 A:** ratcheting pruners (0#) for $26.75

**OTC Bypass Pruners** Cut garlic scapes, harvest tomatoes, greens and herbs. Gets the Mob done, but inexpensive enough for apprentice crews or careless gardeners. Manufactured in Taiwan.  

- **9025 A:** right-handed (0#) for $10.00

**World’s Best Trimmers** Chikamasa B500-SLF scissors are designed to accomplish lengthy delicate trimming jobs ergonomically and efficiently. Razor-sharp 1.38” stainless steel blades are curved to allow precise cuts without straining your wrist, and fluorine-coated to resist sap buildup. You’ll have to clean them eventually, but you can trim for hours without needing to clean them. Rub them down with isopropyl alcohol or soak them in oil between trimming sessions to remove the gunk that does accumulate. Overall length 6.1”.  

- **9027 A:** trimmers (0#) for $26.50

**Hydroponic Shears** For trimming jobs requiring delicacy and precision. Stainless steel blades extend through the rubber-coated plastic handles, making these shears as durable as they are lightweight. Handles are high-visibility yellow so they don’t get lost in the shrubbery. Comfortable enough that you can trim for hours on end. Manufactured in Taiwan.  

- **9028 A:** shears (0#) for $16.50

**On the web:** go to fedoseeds.com and click on Organic Growers Supply for:  

- online ordering  
- downloading paper order forms  
- manufacturer information and contacts  
- out-of-stock and backorder information  
- items not listed in paper catalog  
- pricing updates
**PRUNING Saws**

Replacement blades for pruning saws are available on our website.

**Wheeler Pruning Saw** John Bunker says, “Although not well known outside the orchard trade, this is the best all-around pruning saw there is. I never prune a tree without it. Looks like a hacksaw and cuts like a sharp knife through soft butter. The blade can be installed to cut on the pull or push stroke.” Wooden handle, arched metal frame, 10 teeth/inch. Blade length, 14”; total saw length, 16”; weight, 11.5 oz. Manufactured in the USA.

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<tr>
<td>9031</td>
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**Felco #600 Folding Pruning Saw** Japanese-style pull-action pruning saw with a locking blade that folds into the handle. The patented design of the blade, thicker at the bottom and thinner at the top, prevents clogging and binding, since only the teeth come into contact with the wood. Works well in tight places and cuts branches up to 4” in diameter. Overall saw length, 14”; blade length, 6”; weight, 4.9 oz. Manufactured in Korea.

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<td>9037</td>
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**Felco #611 Straight Pruning Saw** Larger pruning saw with durable ergonomic non-slip plastic handle. 13” blade features the same patented Japanese design as the Felco #600 model, cuts very smoothly on the pull stroke. Hard chrome plating prevents rust. Easily cuts 5–6” limb. Comes with a plastic blade sheath. Total saw length is 19/4”; weight, 13.1 oz. Manufactured in Korea.

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**SILKY Saws**

Our line of Silky saws comes recommended by Daniel MacPhee of Blackbird Rise Farm in Palermo, ME. According to Daniel, the Japanese Silky saws cut “a million times better” than Felco saws. The blades have more teeth per inch and are thinner and more flexible. The latter attribute improves performance but does make the blade more susceptible to bending, so be gentle with it. Silky saws cut on the pull stroke. Manufactured in Japan.

Replacement blades for pruning saws are available on our website.

**Silky Pocketboy Folding Saw** This compact saw with a 5” blade is nicknamed “Little Giant” due to its colossal cutting capacity. Delivers incredibly smooth clean cutting with remarkable speed, making this the go-to saw for pruning and topworking limbs 4” diameter or less. The clean cuts allow the tree to heal well. This little fella has found its following among not only orchardists and landscapers, but also woodworkers, arborists, campers, hunters and survivalists. Given its handy size, why would you anywhere without it? Blade, with 8.5 non-set teeth per inch, folds into a black nonslip rubberized handle.

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**Silky Sugoi Straight Pruning Saw & Scabbard** Sugoi is Japanese for “fast beating”—as in drumming or typing. It also makes for fast fluid sawing. 15.4” high-carbon steel blade with 5.5 teeth per inch extends from an aluminum oval pole that telescopes from 8’ to an astounding 21’! With this versatile saw, you’ll be able to stand safely on the ground while dexterously pruning limbs that would otherwise be impossible to reach without tree-climbing gear or a tall ladder. Fedco OGS mastermind David Shipman has owned one for many years and he calls it his favorite landscaping tool. Includes a rigid plastic blade cover. 6.9 lb working weight.

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**Sharpeners**

**Felco Sharpener** Composite steel blade with two precision edges hones and imparts the correct cutting angle in the same stroke. Hold sharpener at a 30–50° angle to your knife or pruner blade and pull across with light pressure two or three times. That’s all it takes. Felco pruner blades are single-bevel: sharpen only one side of the blade. Manufactured in Switzerland.

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<tr>
<td>9061</td>
<td>sharpener (0#)</td>
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**Sharpeners for Dummies** Those with a knack for sharpening tools consider it an art and a science, and you couldn’t pry the good old-fashioned sharpening stone from their cold dead fingers. For the rest of us, a sharpening stone is a source of confusion and frustration, our tools becoming duller with each “sharpening” session. Enter these angled sharpeners, which you simply run over the edge of your tools for a quick and easy like-new edge. Choose from 9064-A for single-bevel tools like pruners and hoes, or 9064-B for double-bevel tools like most kitchen knives. Tungsten carbide blade and a plastic grip with a full-length finger guard. Overall length 5/8”. Both styles manufactured in the USA.

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<td>one-sided blade sharpener (0#)</td>
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<tr>
<td></td>
<td>two-sided blade sharpener (0#)</td>
<td>$16.00</td>
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**Orchard Ladders**

Sturdy lightweight traditionally shaped wooden orchard ladders have wide bottoms for stability and narrow tops for easy handling and placement.

Contact the manufacturer:
Peter Baldwin, 207-722-3654 baldwinappelpladders.com baldwinpeter@gmail.com

If shipping weight in parentheses is (0#), the item qualifies for free shipping!
Drip irrigation applies moisture where it is needed, at the plants’ roots, so it conserves water and does not cause mold problems. The drip method helps crops get over transplant shock and get established, and ensures adequate water supply until the rain comes. Also useful in greenhouses.

We recommend sketching your garden and proposed irrigation system before you order to ensure that you receive all the pieces you need. For help in designing your own system see fedcoseeds.com/ogs/drip.htm.

STARTER & EXPANSION KITS

We offer two kinds of kits: garden row-crop kits equipped with low-flow drip tape for a uniform distribution of moisture along the tapes, and an orchard-crop kit with emitter tubing (see next page).

Garden Irrigation Starter Kit For 200’ of irrigation. Includes the Spigot-Connection Set (below) and

- 200’ of low-flow drip tape
- 100’ of 1/2” polyethylene mainline tubing
- 2 mainline ends with screw caps - removable for flushing line
- Coupler (1/2”) - joins two pieces of mainline tubing
- 10 drip-tape fittings which plug into the mainline
- 10 drip-tape ends to seal the end of a line of drip tape
- 2 tape couplers to repair breaks or tears in the drip-tape line
- 20 wire holddowns
- Manual punch - makes 1/4” holes to install drip tape
- 10 two-way plugs - fill holes in mainline if you relocate drip-tape fittings

9098 A: kit (10#) for $110.00 *

Garden Irrigation Expansion Kit Gives you another 200’ of irrigation. Contains

- 200’ of low-flow drip tape
- 10 drip-tape fittings which plug into the mainline
- 10 drip-tape ends to seal the end of a line of drip tape
- 2 couplers to repair breaks or tears in the drip-tape line

9101 A: kit (5#) for $36.00

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All the components shown in this diagram (except garden hose) can be found on our website. Please note that our irrigation kits do NOT include all of these components, but only the components listed in the kit description.

If you don’t like the interweb, write to us or call for a price list of irrigation parts.

Spigot-Connection Set

Both Irrigation Starter Kits (9098, 9104) include the following pieces necessary to connect to an outdoor spigot:

- Vacuum breaker - prevents backflow into your water system
- 200 mesh drip filter
- 10 psi pressure regulator for garden kit; 40 psi for orchard kit
- Smart Loc beginning - connects mainline to spigot or garden hose

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Use weight in parentheses (#) to calculate shipping charge.
Orchard Irrigation Kit  So you’ve planted (or are about to plant) a carefully spaced and fertilized new orchard. Make sure the plants get the water they need! Most fruit trees, shrubs and canes require the equivalent of 0.6-1.2 gallons of water per square foot, every week throughout the growing season. For an apple tree, this means about 5 gallons a week. We designed this kit to make it more effective at delivering water where your plants need it most, and to make assembly and disassembly easier. The star of the show is 9125 Emitter Tubing, which we learned about from landscaping gurus Robert Kourik and Lee Reich. This tubing makes it a cinch to supply each plant with two or more emitters, and it minimizes leaking and clogging. This kit will irrigate up to 10 trees spaced every 25'. If you’re irrigating bushes, shrubs, or canes with closer spacing, you’ll want additional fittings to match the number of plants. Setup instructions are included. Requires two 25’ garden hoses, not included. Email john_paul@fedcoseeds.com for help.

Includes the Spigot Connection Set (see bottom opposite), and:
- 200' of 1/2" polyethylene mainline tubing
- 50' Emitter tubing, 18" spacing
- 10 Figure-8 ends
- 10 Figure-8 ends
- 8 T-couplers
- 2 L-couplers
- Hose Y w/ valves
- Smart Loc beginning (one additional)
- Smart Loc beginning (one additional)
- 50 Earth Staples

How much water am I saving?
Summer of 2016 in Maine was the driest in decades. Many growers ran their wells dry trying to irrigate their crops. Drip irrigation came to the rescue and proved its efficacy by conserving energy and eliminating the “wasted water”—irrigation water not used by the crops typical of other irrigation methods. Although modern drip irrigation has been around for more than 60 years, the debate about how much water it saves is ongoing, and there is no conclusive evidence about the effects of large-scale drip-irrigation systems on the recharge rate of aquifers. But with drip irrigation the decrease in water use (up to 70%) and increase in yields reported from farms of all shapes and sizes is significant. Little water is lost to evaporation, especially where a good layer of mulch is used to protect the piping from UV radiation. Further, drip irrigation gives the grower more precise control over the distribution of water to crops on a needs basis.

Emitter Tubing  Like a hybrid between mainline tubing and drip tape: 1/2" hose with pre-installed 1 gph emitters every 18" or 36". May be used alone on crops like squash, tomatoes or highbush blueberries. For orchard irrigation, run circles or semicircles of emitter tubing around each tree and connect them with mainline tubing from your water source. No external parts to snap off or ask, provides consistent water flow regardless of slope or hose length, and does not clog as easily as soaker hose. Much more durable than drip tape: with proper care, tubing will last 10 years or more. Requires water pressure of 1-50 psi. We recommend 9114 40psi Pressure Regulator. 18" emitter tubing has a maximum single row length of 350'. 36" emitter tubing has a maximum single row length of 550'.

Punch N Cut  Don’t worry, this isn’t a tool for the bully’s arsenal. Three tools in one: punches holes in 9119 Mainline for 9161 Drip Tape Fittings or 9185 Spot Emitters, cuts Mainline and 9122, 9125 Emitter Tubing, and inserts 9185 Spot Emitters. Each is an improvement on what we’ve offered before. Punching mechanism is easier on the hand muscles than other punches, and is quite accurate. Cutting mechanism makes square, clean cuts more easily and reliably than scissors or Felco pruners. Inserting mechanism (opposite end from the punch) is more ergonomic than using bare hands to force emitters into mainline inserts. Spot Emitters, cuts Mainline and Emitter Tubing, and inserts Emitter Tubing. Each is an improvement on what we’ve offered before. Punching mechanism is easier on the hand muscles than other punches, and is quite accurate. Cutting mechanism makes square, clean cuts more easily and reliably than scissors or Felco pruners. Inserting mechanism (opposite end from the punch) is more ergonomic than using bare hands to force emitters into mainline inserts Spot Emitters only, not Drip Tape Fittings). Note: this punch makes slightly smaller holes in Mainline than the punch we used to offer, so Drip Tape Fittings and Spot Emitters fit more snugly, good because it reduces the chance of leaking, but they are slightly harder to install and remove. NEW!

If shipping weight in parentheses is (0#), the item qualifies for free shipping!
SPRAYS

**SOLO® 420 2-L Hand Sprayer** Reliable Solo quality for the home gardener, or for use in the greenhouse or grow room. Polyethylene tank has a 2-liter capacity. Piston pump with Viton seals for chemical resistance. (Don’t use with gritty materials like Surround.) Nozzle wand telescopes from 12" for close-up work to 23" for ground-level spraying without stooping. Wand is not removable. Nozzle adjusts from fine mist to coarse spray and is multi-directional with a drip guard, so you can spray from any direction—useful for hitting the undersides of leaves! A compact and versatile little workhorse of a sprayer. Manufactured in the USA.

9223 A: sprayer (5#) for $27.50

**SOLO® Backpack Sprayer** Our efforts to carry a backpack sprayer that retails for under $100 brought us nothing but grief in the form of quality complaints. So we sought shelter in the tried-and-true Solo deluxe model, which does not retail for under $100 but does offer an adjustable pressure cylinder, a brass nozzle, excellent parts availability and a solid reputation. Apparently it deserves its reputation—we’ve sold several dozen in each of the past few years and pretty much everyone has been happy. We have learned that the black plastic piece that connects to the hose from the pump handle can be a bit tender: make sure the two white bolted plastic pieces are firmly tightened, and don’t pump the sprayer roughly. However, SOLO offers a pretty generous one-year warranty on this sprayer and will send you free replacement parts within that timeframe if necessary: just call them at 1-800-765-6462. Four-gallon polyethylene tank. Horizontal spray distance 25'; vertical spray distance 20'. Diaphragm pump is suitable for spraying wettable powders like Surround, which will quickly destroy piston pumps.

Please join us in eschewing cheap sprayers! Also, please do your part to extend your sprayer’s life by assembling gently and cleaning thoroughly after each use. Manufactured in the USA.

9231 A: sprayer (30#) for $175.00 ★

**EARTHWAY® SEEDER AND SPREADER**

EarthWay Vegetable Seeder In one continuous operation the seeder opens the soil, spaces, plants and covers the seed, packs the soil, and marks the next row. Reliable performer for the large garden or small farm. Includes 6 seed plates: carrots, beans, corn, peas, radish and beets. A real time-saver, especially for corn, beans and peas. Manufactured in the USA. See our website for attachments and additional seed plates.

9252 A: seeder (10#) for $160.00 ★

EarthWay Broadcast Sprayer Spread seed or granular fertilizer evenly and accurately. This spreader has a zippered nylon bag, a shoulder strap and an enclosed gear box to keep dirt out of the die-cast zinc gears. Manufactured in the USA.

9255 A: broadcast spreader (10#) for $50.00

**TWO BAD CATS TOOLS**

Yankee ingenuity at its best. These nifty tools are designed and manufactured by Two Bad Cats, a father-son team in southwestern Vermont. Also see 8893 Wire Weeder on page 142.

The items below are shipped directly to our customers by the manufacturer. Made in the USA.

9240 A: 5" blade, drop-ship (0#) for $375.00 ★
B: 8" blade, drop-ship (0#) for $375.00 ★

**Valley Oak Wheel Hoe** Built to last and to stand up to years of heavy use. Rugged steel wheel. Tempered steel blade cuts weeds off 1/2" to 2" below the ground, on both the push and pull stroke. Weed close to your rows. Save stooping. Wand is not removable. Nole adMusts from fine mist for ground-level spraying without

9249 A: broad fork, drop ship (0#) for $315.00 ★

**Valley Oak Broad Fork** 12" tines dig and break up compacted soil more deeply than a rototiller, aerate and loosen without destroying the soil structure. Fork is 18" wide with 5 tines, which are reinforced with 1/4" steel gussets to prevent bending. Rugged steel handles. A sturdy well-balanced tool. Shipped to you directly from the manufacturer. Made in the USA.

9261 A: weeder, drop ship (0#) for $210.00 ★

**Infinite Dibbler** Quickly and accurately punches holes for transplants in bare soil or through plastic mulch at many in-row and between-row spacings with simple adjustments. Most effective on sandy soils or friable loams. Each wheel may be set independently for in-row plant spacings of 3", 4", 6", 8", 12", 15", 22" or 41", while the wheels clamp securely to the axle for almost infinite adjustment of between-row spacing up to a maximum of 24". Comes with two wheels to mark two rows at a time, but you can buy extra wheels (see below) if you want to mark three rows 12" apart or four rows 8" apart. 36" oiled ash handles, red powdercote finish on frame. Hard aluminum dibbles are 2 1/2" long and 1" in diameter.

We can also special order dibblers with wider axles—please email ogs@fedcoseeds.com for more information.

9258 A: dibbler, drop ship (0#) for $460.00 ★

**Dibbler Wheel** In case infinity isn’t big enough for you.

9258 B: dibbler wheel, drop ship (0#) for $160.00 ★

**Tine Weeder** Time weeding, also called blind harrowing, is a favorite technique among organic grain farmers—45” wide tine weeder are not an uncommon sight on organic fields in the Midwest and Canada. Now, thanks to Two Bad Cats, this technology is available for those operating on a smaller scale. Two offset rows of flexible tines, spaced 1/2" apart, span 18” across and will go around your established plants (and your drip tape!) without disturbing them, but will wreak havoc on barely germinated weeds. Like so many farm and garden activities, this tool requires well-timed use to be truly effective: it won’t kill established weeds. Handle 56"/1/2" long with adjustable angle.

★ When you see the star, this item qualifies your entire Organic Growers Supply order for a volume discount. Take an additional 5% off December orders!

Orders over $100 deduct 5%.
Orders over $300 deduct 10%.
Orders over $600 deduct 15%.
Orders over $1200 deduct 20%

★ Where are the Smart Carts?

To order Smart Carts, check our website, fedcoseeds.com/ogs. You will also find our Smart Water Carts for moving water in the summer and hauling firewood in the winter. Carts can be shipped directly to you.

**Use weight in parentheses (#) to calculate shipping charge.**
WHO’S WHO IN THE GARDEN

Wooden Pot Labels Untreated wooden sticks for labeling seedlings. Our inventory is in transition: our new supplier sends us 5 x 3/4” labels, but we still have a few of the old 6 x 3/4” labels in stock. We will send you whichever size we please, unless you really think size matters, in which case please drop us a note with your order and we will do our best to accommodate you. Made in Maine from New England white birch.

9289 A: bundle of 50 (#6) for $4.50
B: case of 1000 (5#) for $36.00

Treated Wooden Garden Stakes Treated with non-toxic white paint, these are the official stakes in Fedco trials. At the end of the summer, names stand out clearly and the stakes show little deterioration, even where they have been in contact with the soil. 12 x 1 x 1/8”. Made in Maine.

9292 A: bundle of 25 (#6) for $10.00
B: case of 250 (10#) for $52.50

Field Stakes You won’t lose these variety markers in the undergrowth. Longer and thicker than the garden stakes, these untreated field markers are easy to spot in the thickest bean bushes. 18 x 1 x 3/4”. Made in Maine.

9298 A: bundle of 25 (#6) for $17.50
B: case of 100 (10#) for $50.00

Vinyl Plant Tags John Bunker says vinyl siding works so well as an outdoor label that “we should remove it from all the houses in the world and make it all into plant tags.” For those disinclined to make their own, we’re now offering these, made locally out of genuine reclaimed vinyl from the historic Bridge Farm in Dresden, ME. Label measures approx. 4 x 4” and is a nearly indestructible 45 mil thick, with a hole drilled in one corner for a wire so you can hang it. Write on them with pencil, not marker, for a tag that will help you identify your apple tree from now until Armageddon.

9301 A: bundle of 25 (#6) for $20.00

Cap Style Plant Markers Zinc-coated nameplates on galvanized steel legs provide permanent outdoor labeling. 10 x 1/2” tall with a 1 3/8 x 1/2” horizontal nameplate. Comes with marking pencil.

9304 A: bundle of 25 (#6) for $17.00
B: case of 100 (10#) for $60.00

Aluminum Label Tags Permanent all-weather tags with wires, especially for labeling trees. Can write on both sides.

9310 A: 25 tags (6#) for $8.00

PACK THE HARVEST

Harvest Baskets Old-time wooden lath and wire baskets in bushel, half-bushel, peck and half-peck sizes. Classic and effective. We sell hundreds every year in Common Ground Fair. Bushels and half-bushels have a wire loop on each side for handles, pecks and half-pecks have a wire bail with a wood handle. Made in PA.

9337 A: 3 bushel baskets (10#) for $19.00
B: 3 half-bushel baskets (10#) for $15.00
C: 3 peck baskets (5#) for $15.00
D: 3 half-peck baskets (3#) for $14.00

Cloth Produce Bags It’s 2020, and we see the future as plastic free, or at least heading in that direction! Instead of smothering your produce in wasteful single-use bags, use these lightweight and breathable unbleached cotton gauze bags. Also good for bagging up rice or beans at the co-op (the weave is too open to protect or other dusty materials). Even commercial growers could use these on a deposit-and-exchange system at farmers markets or for CSA shares. Bags measure 8.5 x 11” and weigh just 0.4 oz (11g). Machine washable in cold water; air-dry. Set of 3. NEW!

9340 A: set of 3 (6#) for $20.00

Sun Sugar Boxes An environmentally friendly alternative to plastic clamshells (which are difficult even to recycle anymore, now that China is understandably refusing to take our trash) or even the classic moldboard berry boxes, which are soaked in artificial dyes and are bulky to ship both into and out of our warehouse. These boxes are recyclable and compostable cardboard and they ship flat, so they are more fuel-efficient to move around. If better karma alone is not enough to win you over, they are also lidded and stackable so they do a better job of protecting your produce. And they’re pretty too! The vent holes are shaped like suns, raindrops, flowers and earthworms. Labels will affix to them more easily than to molded berry boxes. The quarts and punts assemble in five easy steps (the manufacturer says their workers can fold 100 boxes an hour) and the half-pints have an ingenious auto-folding design and assemble in one motion. Auto-folding punts may be available later this year; check our website for updates. Exterior dimensions assembled: Half-pint is 4” x 4 1/4” x 1 1/2”; Low-profile pint is 4” x 4 1/2” x 1 1/2”; Quart is 7” x 4 1/4” x 3 1/2”. NEW!

9353 A: 25 half-pints (#6) for $10.50
B: case of 200 half-pints (10#) for $75.00
C: 25 punts (#6) for $9.00
D: case of 150 punts (14#) for $48.75
E: 25 quarts (#6) for $14.00
F: case of 200 quarts (220#) for $100.00★

If shipping weight in parentheses is [0#], the item qualifies for free shipping!

Nitrile Gloves Snug-fitting knit poly-nylon shell is dipped in nitrile, a marvelously gripping soft rubber that latex-sensitive people can use. Snug fit and tacky surface preserve dexterity. Backs are partially uncoated to improve ventilation. A real hit in the warehouse for handling trees. Good protection in any wet muddy situation: mosquito proof. Excellent in the cold with wool or silk liners. Double-knit cuff. Size is based on measurement around knuckles.

9392 A: medium 8-10” (#6) for $7.00
B: large 9-10” (#6) for $7.00
C: x-large 10-11” (#6) for $7.00

Cardboard Berry Boxes Classic molded-paper berry boxes in half-pint, pint and quart sizes.

9352 A: 50 half-pints (2#) for $9.00
B: case of 600 half-pints (50#) for $99.00
C: 50 punts (2#) for $12.00
D: case of 420 punts (50#) for $75.00
E: 60 quarts (3#) for $150.00
F: case of 250 quarts (56#) for $70.00

Collapsible Drying Racks 36” diameter round shelves of durable polyester netting in a metal frame. Center strap for improved weight support. Perfect for drying flowers and herbs of all types. Rack has 6 tiers that snap together so you can configure them to suit your needs. A total of 42 sq ft of surface area!

9358 A: drying rack (10#) for $45.00

GARDEN GARB

See waterproof insulated chore gloves on page 134 in the Livestock Supplies section.

Vermont Gloves You can’t possibly work harder than these top-notch leather work gloves. Rugged goatskin body with a 4” cowhide cuff and double nylon stitching. The padded thumb design offers improved comfort and durability. Absolutely worth the investment: will outlast other leather work gloves three or four times over. They have been popular holiday gifts among our customers. A fast business formed in 1920 in Randolph, VT, Green Mountain Gloves started out making silk dress gloves but soon developed a specialty in heavy-duty leather work gloves. Two customers contacted us in 2017 after NPR ran a story about the company’s struggle to survive in an era of cheap imported competition: they were down to one sewing machine and four employees producing only twenty dozen gloves a month, with no promise of a successor for the aging owner. Cheeringly, the company found a young successor after all, who shares his predecessors’ values but has also revamped the company’s online presence and branding (including a name change). The company’s Luddite quirksiness and devotion to quality in a world that cuts corners, ignores human costs, and demands uniformity seemed to fit in with Fedco’s values like hand and glove. And, like Fedco, Vermont Glove now runs on solar energy! Size is based on measurement around knuckles.

9390 A: small 8-9” (#6) for $92.50
B: medium 9-10” (#6) for $92.50
C: medium 10-11” (#6) for $92.50
D: x-large 11-12” (#6) for $92.50

Samson Gloves Whether you need to kill a lion with your hands, massacre a thousand Philistines with an ass’s jawbone, or dig turnips out of half-frozen mud in late October, regular garden gloves just won’t cut it anymore. Samson gloves will keep your fingers warm and protected in harsh gardening conditions; they may or may not confer superhuman strength, but you will definitely feel less homicidal. Fine-knit stretchy polyester shell is lined with thick soft acrylic fleece. The palm and fingers are dipped in natural latex to provide water resistance and good grip. Size is based on measurement around knuckles. Snug fit: order a size up if you’re not sure.

9391 A: medium 8-9” (#6) for $8.00
B: large 9-10” (#6) for $8.00
C: x-large 10-11” (#6) for $8.00

Hercules Gloves Knit gloves of 35% cotton and 65% polyester coated with durable black latex. Very flexible; partially uncoated back for better ventilation. A real hit in the warehouse for handling trees. Good protection in any wet muddy situation: mosquito proof. Excellent in the cold with wool or silk liners. Double-knit cuff. Size is based on measurement around knuckles.

9392 A: medium 8-9” (#6) for $7.00
B: large 9-10” (#6) for $7.00
C: x-large 10-11” (#6) for $7.00

Hercules Gloves Knit gloves of 35% cotton and 65% polyester coated with durable black latex. Very flexible; partially uncoated back for better ventilation. A real hit in the warehouse for handling trees. Good protection in any wet muddy situation: mosquito proof. Excellent in the cold with wool or silk liners. Double-knit cuff. Size is based on measurement around knuckles.

9395 A: x-small 5-6” (#6) for $8.00
B: small 6-7” (#6) for $8.00
C: medium 7-8” (#6) for $8.00
D: large 8-9” (#6) for $8.00
E: x-large 9-10” (#6) for $8.00

GROWERS SUPPLIES
Knee Pads The best for wearing in the garden. Unlike most knee pads, which buckle around the back of the knee, these pads feature two heavy-duty 1/4" elastic straps with velcro: one at the lower thigh, one at the upper calf. This improves your comfort in a kneeling position and helps prevent the pads from falling down to your ankles when you walk. The outside surface is solid plastic for easy cleaning. Lined with cushiony closed-cell polyolefin foam, which doesn’t hold water. Garden in comfort, with no more rocks denting your kneecaps!

Arm Guards Slipped over your forearms and gloves, the heavy close-woven canvas protects you from the unknown cuts of rose thorns, thistle spines and other prickly peril. Staffer Carol Doyle reports that the pair she tested “work wonderfully!” She successfully pruned the nastiest portion of her blackberry patch without getting her shirt snagged or her arms scratched. She further praised the Arm Guards for not restricting arm motion “and they are loose enough so they don’t feel as if the circulation is being cut off by something too tight around the wrist and elbow. I’ll be glad to get the berry bushes cleaned up this year!” One size. One pair.

9398 A: pair (3#) for $25.00

Bug Baffler Headnet What is the one sure sign that spring is really here and it’s time to set out the transplants? Black flies. Slip on this headnet and work in comfort, snug in the knowledge that there will be no flies biting your face today. Lightweight fine-mesh black nylon lets breezes in and makes the outdoors liveable again with chemical-free insect protection. Patented hood design allows plenty of room for a hat, and seamless construction permits unobstructed vision. Elastic bands slip under arms to hold the hood securely in place. Perfect for bee observation. One size.

9441 A: headnet (0#) for $9.50

Bug Baffler Ankles Guards These days everyone in New England probably knows someone who has suffered from tick-borne illness. If humans manage to pollute and exploit the wilds into oblivion, ticks will probably be the next dominant species on the planet. Meanwhile, here’s a non-toxic and unlikely knows someone who has suffered from tick-borne illness. If humans...
**Fedco Cover Art**

Whimsical and beautiful black-and-white art is a hallmark of Fedco's unique style, our way of counterbalancing the glossy, airbrushed color photos typical of most of the seed-catalog world. Now some of our art can grace your walls! High-quality 12x18" prints on heavy matte cardstock are suitable for framing or thumbtacking. Choose from the 2019 cover (a noble warrior guarding her seeds as she navigates the seas in a Delicata squash), 2017 cover (our superhero Magic Molly soaring through a vegetable galaxy), 2015 cover (Art Deco poppies with bees), the 2010 cover (surrealistic small plane flying over a cloud of cauliflower), the 2005 cover (peasants sheaving grain, with a quote from Deuteronomy about gleaning), or the 2000 cover (a fantastic scene of Father Time with an organic-agriculture New Year baby ushering out the demons of conventional farming).

**Apples and the Art of Detection: Tracking Down, Identifying and Preserving Rare Apples** by John Bunker, 407 pages, 8x11, softcover. I've been listening to John Bunker talk about his book for as long as I can remember. The old varieties and why we should rescue them, the Johnny Appleseeds who spread them throughout New England. A handy guide for exploring the earth characters and their apple orchards, and we fall in love with all of them. As a layperson, I especially enjoyed those sections, but I was also impressed with the precision and eloquence with which the science is presented. Apples and the Art of Detection has photographs and artwork galore, and is beautifully illustrated by the author himself. -Emily Bunker  

**Fedco Cover Art Poster (0#) for $3.00**

- A: Year 2000  
- B: Year 2005  
- C: Year 2010  
- D: Year 2005  
- E: Year 2017  
- F: Year 2019

**The Apple Grower: A Guide for the Organic Orchardist** by Michael Phillips, 2nd edition, 320 pages, 8x10, softcover. The book you need to grow apples organically. Research aimed at reducing the use of synthetic poisons in the cultivation was so intense that Don Bussey's baby ushering out the demons of conventional farming.

**9470A: Apples and the Art of Detection (0#) for $30.00**

**9471A: The Apple Grower 2nd Ed. (0#) for $36.25**

**The Apples of New England** by Russell Steven Powell, 214 pages, 7x11/4, hardcover. Apples were planted in New England as far back as 1604 when the French explorer Pierre du Guichet, the sieur de Monts, started an orchard on St Croix Island just south of Castine. From the beginning of European settlement, apples and cider played a great role in making life here palatable. People who lit out carried apple seeds with them, concerned less about the varieties they were carrying than the potential of those seeds to supply food and drink. The cultivation was so intense that Don Bussey's baby ushering out the demons of conventional farming.

**9474A: The Apples of New England (0#) for $19.75**

**Apples to Cider: How to make cider at home** by April White with Steve Wood, 152 pages, 8x10, softcover. The current revolution in fermented cider has been an effort of thousands of enthusiasts from all over the country. But to my mind no one has been more influential than Steve Wood of Poverty Lane Orchards and Farningham Hill Cider. Steve has teamed up with April White to create a clear detailed explanation of how to make cider. Cider history and explanations of styles and terminology are interspersed with Steve’s diary-like observations. Of particular note is an excellent chapter on how to taste and describe cider. Set amidst the orchards and cider room at Farningham Hill, you’ll come away feeling like you know the people and the place. How to choose amongst the many excellent books about cider? Whether a beginner or an expert, if you’re into cider, you won’t be disappointed by this one. -JB  

**9477A: Apples to Cider (0#) for $25.00**

**The Art and Science of Grazing** by Sarah Flack, 230 pages, 8x10, softcover. A cow can turn grass into butter and hamburgers: what’s your superpower? Flack combines hard-headed science with practical experience, an approachable tone and a palpable love for grazing animals. After a brief introduction to various grazing systems, she splits the body of the book into two parts: the first addresses soil health, pasture species and pasture management, while the second covers ruminant nutrition, grazing behavior and veterinary concerns related to grazing. The final section ties all these principles together to guide graziers through the process of designing pasture-management plans suited to the needs and characteristics of their farms. Relevant to small ruminants as well as to beef and dairy cattle, and includes trending topics like zero-grain dairying and the accurate measurement of dry matter intake. -AC  

**9480A: The Art and Science of Grazing (0#) for $35.50**

**The Art of Natural Cheesemaking: Using Traditional, Non-Industrial Methods and Raw Ingredients to Make the World’s Best Cheeses** by David Asher, 320 pages, 8x10, softcover. More often than not, something is missing in cheese these days—even when it tastes good, whether it is made artisanally or just off the ship from abroad. A mysterious element sets some cheeses apart as “the best.” David Asher assures us that this missing ingredient is nothing more than a foundational connection to, and cooperation with, nature: the seasons, the fauna and flora and, especially, the microbes. The methods detailed in this book suggest a traditional yet radical approach to cheesemaking that reflects Asher’s “fermentationism,” and his belief that all bacterial and fungal cultures needed to make good cheese are native to good raw milk. No fancy equipment or weary lab-grown cultures needed. To make the best cheese, smell the milk and trust your clabber, harvest and process your own rennet, keep your own Penicillium roqueforti on homemade sourdough bread, backslap your whey for starter culture, don’t wash your milk bucket, respect your kefir, improvise your own cheese forms andjust say no to Big Dairy. Both a manifesto and a framework. You’ll find 35 recipes with beautiful photographs to guide the way. -AA  

**9486A: Art of Natural Cheesemaking (0#) for $34.75**

**Attracting Beneficial Bugs to Your Garden: A Natural Approach to Pest Control** by Jessica Walliser, 240 pages, 8x9, softcover. It’s mid-August and the tomatoes are just starting to ripen. You go out in the evening and are dismayed to see vines bitten off and gouges in the flesh of the fruit as though someone had taken a rasp to it. You know who the culprits are but, try as you might, and as large as they are, you can’t see them. Why strain your eyes when parasitic wasps are eager to find a place to raise their children? We all know about the benefits of beneficials. Here in one well-written and researched, handsomely illustrated book is everything you need to know about who the beneficial insects are, whom they target, which plants support them throughout their life cycles and provide camouflage so the blood-thirsty adults can catch their prey unawares. A comprehensive introduction to beneficial insects and a guide to the plants and garden designs that lure them in and support them. -DS  

**9489A: Attracting Beneficial Bugs (0#) for $24.75**

**The Backyard Orchardist: A complete guide to growing fruit trees in the home garden** by Stella Otto, 2nd edition, 320 pages, 6x9, softcover. An in-depth easy-to-read guide for novice and experienced backyard orchardists. First published over two decades ago, it is a delight to have this new revision. Well organized and illustrated, covers variety and site selections, soils, pruning, diseases, pollination and more. This expanded 2nd edition offers readers additional information on planning considerations for new orchards, pest management, harvest and storage. You’ll find individual sections for every fruit in the Fedco Trees catalog, 41 charts, 95 illustrations. Lots of answers for all your orchard questions -RB, JPR  

**9495A: The Backyard Orchardist (0#) for $22.50**

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Free shipping on all books!
The Beekeeper’s Bible: Bees, Honey, Recipes & Other Home Uses by Richard Jones, 416 pages, 7" x 9", hardcover. This big, impressive, amusing and boldly illustrated book is an encyclopedia of the honey bee, translated from the Polish. Should be of interest to anyone who likes bees, history, diagrams, information or fun. Geared toward younger readers, but definitely not dumbed down for them. As an amanuensis, I’ve read many books about honeybees written for adults, yet this sprawling homage to the bee and its keepers was packed full of stuff I didn’t know. My only complaint is I don’t have a shelf tall enough to accommodate the book’s 15" height. -EB

9501A: The Beekeeper’s Bible (0#) for $34.00

Bees: A Honeyed History by Piotr Socha, 80 pages, 11" x 15", hardcover. This big, impressive, amusing and boldly illustrated book is an encyclopedia of the honey bee, translated from the Polish. Should be of interest to anyone who likes bees, history, diagrams, information or fun. Geared toward younger readers, but definitely not dumbed down for them. As an amanuensis, I’ve read many books about honeybees written for adults, yet this sprawling homage to the bee and its keepers was packed full of stuff I didn’t know. My only complaint is I don’t have a shelf tall enough to accommodate the book’s 15" height. -EB

9501A: Bees: A Honeyed History (0#) for $24.75

Bread Earth and Fire: Earth Ovens and Artisan Breads by Stuart Silverstein, slightly revised 2nd edition, 296 pages, 6" x 9", softcover. Fired by his visit to the Poitaine Bakery in Paris with its vast array of wood-fired ovens, Stu continues his adventure with bread and wood-fired oven construction. Not a coffee table book, rather one to be smudged, creased and stained as you put your hands to work. The book describes building ovens to fit a variety of situations and budgets: mud, brick, portable, even Dutch ovens. Once built, what to bake? The many recipes give not only ingredients and amounts, but also the nuance and flavor of the experience. Amply illustrated with photographs documenting oven construction and the world of breads waiting to come out of them. With only rudimentary skills and experience, guided by his instruction and fired by his enthusiasm, you can start your own bread adventure. -NK

9513A: Bread Earth and Fire (0#) for $18.75

Cass Turnbull’s Guide to Pruning: What, When, Where & How to Prune for a More Beautiful Garden by Cass Turnbull, 365 pages, 7" x 9", softcover. I’m the kind of tree gardener who feels that one pruning book is not enough. Each one has something different to offer. Most sit on my shelf for quick reference. This is the first pruning guide I’ve wanted to read from cover to cover! Cass Turnbull sheds a bright—even glaring—light on pruning and what she has coined “mat-pruning.” Fleshing out the details with clear how-to and how-not-to instructions along with useful illustrations and laugh-out-loud humor, she walks the reader through the basics and delves into the specifics for more than 150 plant species. Turnbull urges us to look more closely at how plants grow in order to make sense of why and how we should prune them. Chapters are grouped by plant habit (mounding, cane-growing, tree-like, vines and groundcover) so even if your favorite plants are not listed here, you can adapt the methods to meet your specific needs. -JR

9522A: Cass Turnbull’s Guide to Pruning (0#) for $23.25

Compost Teas for the Organic Grower by Eric Fisher, 256 pages, 7" x 9", softcover. Finally! A guidebook on compost teas that goes well beyond the bubbling. Drawing on a variety of research, Eric Fisher cultivates a deep understanding of compost tea that borrows from both biodynamic principles and conventional soil science. After walking the reader through the essentials of soil and plant life, the book explores myriad ways of customizing compost and compost tea for all imaginable purposes. Recipes include a root-and-shoot stimulator drench with horsetails and yarrow; an orchard and vegetable foliar spray with kaolin and yeast extract; a pralin root dip for nurseries; seedballs; willow water; BD preparations; and many more. Just as he builds on scientific research, the author also questions the “monism” of today’s science. A chapter on alternative practice subtly nudges composters to take their practices to the next level by following the moon and working with indigenous microorganisms to attenuate with natural cycles. Fisher’s gentle and subtle tone left me with a lot to contemplate as I studied the extensive references section. -AA NEW!

9530A: Compost Teas (0#) for $20.00

Cooking With Scraps: Turn Your Peels, Cores, Rinds, and Stems into Delicious Meals by Lindsay-Jean Hard, 189 pages, 7" x 9", softcover. Roughly one third of food produced in the world gets lost or wasted. I’m enough of an Irish peasant that such a statistic is anathema to me, having been trained not to waste food. This usually comes in the form of cooking up the various ends and peels into soup stock. So when a book comes along with the enticement of zero-waste cooking, I’m on board, though I was skeptical the author could deliver 85 “scrumptious” recipes. Well, now I’m a believer — having made some of the truly delectable fare—while using spent coffee grounds, corn cobs and carrot tops (though not all together) —suited to mainstream tastes. The right category for those in the clean-out-the-crisper category: featuring tempura, sashimi, frittata and, yes, soup stock. While something like using beet greens is just common-sensical to us in Maine, the commonplaceness of ripping of the peels will get your gastronomic and imaginative juices flowing. I can hardly wait until spring to try Charred Asparagus-end Pesto. Or, when I pull my beets out of winter storage…Beet Peel Margarita, anyone? -NK

9531A: Cooking with Scraps (0#) for $20.00

Crop Planning for Organic Vegetable Growers by Frédéric Theriault and Daniel Bischofs, 156 pages, 7" x 9", softcover. It fit this book well when I started farming. I would have avoided many mistakes. Published by Canadian Organic Growers, it’s full of tools to plan for success before your first seed hits the soil. Charts, calculations and records—all the dry bones of keeping inventory handy, farmable land and certification inspections smooth. Succinct chapters move from setting financial goals to developing a marketing plan, projecting planting schedules, compiling a seed order, analyzing before planning another year. For farmers, next year always holds the promise of being better; this book could make it so. -NK

9537A: Crop Planning For OG Vegetable Growers (0#) for $23.50

The Elderberry Book: Forage, Cultivate, Prepare, Preserve by John Moody, 114 pages, 7" x 9", softcover. The elderberry and humans have been together for a long time. This shrub shows up in ancient texts and in fossils from our tribal sites. Moody writes, “If the dog is humanity’s best friend, then the elderberry may be its best plant friend.” For generations, elder was the go-to household treatment for just about everything: dryops, toothaches, or to remedy the effects of strangulation (apparently). For survival, people had to know their plants, and the elder was key. Everyone should have a few in their landscape, and we’re lucky to enjoy them in a more relaxed setting that doesn’t involve the plague. Appreciation for elderberry is making a comeback, and we’re all for it. (We’re offering 9 elderberry varieties in the 2020 Fedco Trees catalog!) They offer beauty, offering 9 elderberry varieties in the 2020 Fedco Trees catalog!) They offer beauty, offering 9 elderberry varieties in the 2020 Fedco Trees catalog!) They offer beauty, offering 9 elderberry varieties in the 2020 Fedco Trees catalog!) They offer beauty, offering 9 elderberry varieties in the 2020 Fedco Trees catalog!) They offer beauty, offering 9 elderberry varieties in the 2020 Fedco Trees catalog!) They offer beauty, offering 9 elderberry varieties in the 2020 Fedco Trees catalog!) They offer beauty, offering 9 elderberry varieties in the 2020 Fedco Trees catalog!) They offer beauty, offering 9 elderberry varieties in the 2020 Fedco Trees catalog!) They offer beauty, offering 9 elderberry varieties in the 2020 Fedco Trees catalog!) They offer beauty, offering 9 elderberry varieties in the 2020 Fedco Trees catalog!) They offer beauty, offering 9 elderberry varieties in the 2020 Fedco Trees catalog!) They offer beauty, offering 9 elderberry varieties in the 2020 Fedco Trees catalog!) They offer beauty, offering 9 elderberry varieties in the 2020 Fedco Trees catalog!) They offer beauty, offering 9 elderberry varieties in the 2020 Fedco Trees catalog!) They offer beauty, offering 9 elderberry varieties in the 2020 Fedco Trees catalog!) They offer beauty, offering 9 elderberry varieties in the 2020 Fedco Trees catalog!) They offer beauty, offering 9 elderberry varieties in the 2020 Fedco Trees catalog!) They offer beauty, offering 9 elderberry varieties in the 2020 Fedco Trees catalog!) They offer beauty, offering 9 elderberry varieties in the 2020 Fedco Trees catalog!) They offer beauty, offering 9 elderberry varieties in the 2020 Fedco Trees catalog!) They offer beauty, offering 9 elderberry varieties in the 2020 Fedco Trees catalog!) They offer beauty, offering 9 elderberry varieties in the 2020 Fedco Trees catalog!) They offer beauty, offering 9 elderberry varieties in the 2020 Fedco Trees catalog!) They offer beauty, offering 9 elderberry varieties in the 2020 Fedco Trees catalog!) They offer beauty, offering 9 elderberry varieties in the 2020 Fedco Trees catalog!) They offer beauty, offering 9 elderberry varieties in the 2020 Fedco Trees catalog! -NK

9549A: The Elderberry Book (0#) for $23.25

The Essential Guide to Cultivating Mushrooms: Simple and Advanced Techniques for Growing Shiitake, Oyster, Lion’s Mane, and Maitake Mushrooms at Home by Stephen Russell, 232 pages, 7" x 9", softcover. Who knew that a roll of toilet paper could grow your supper? If you want to know how, read this book. Home cultivation of mushrooms discussed from the basics (buy a kit) to the advanced (grow your own strain) in very organized and clear step-by-step instructions including what not to do. Based on the author’s experiences with the successes and pitfalls of cultivation. Excellent photos. Everything you need to get started and keep going. -JR

9555A: The Essential Guide to Mushrooms (0#) for $24.50

Farmacology: Total Health from the Ground Up by Daphne Miller, 209 pages, 5" x 8", softcover. Miller is a medical doctor with a unique perspective on healing that first surfaced when she read Wendell Berry’s essay “The Body and the Earth” in which he connects our treatment of our bodies with our treatment of the earth. Impressed, Miller set out to investigate the workings of seven farms in different geographical locations to see if she could discover connections to health. This book chronicles her discoveries: how a healthy soil can produce a healthy immune system; how soil microbes can communicate with your internal microbes; and in short, how agricultural choices can have a positive impact on individual health. Anyone who gardens has experienced a bit of this directly, but this book puts it within a greater healthcare pattern. With 35 pages of references, you can discover the depth as well as the breadth of this healing, from the ground up. -JR NEW!

9558A: Farmacology (0#) for $17.00

Free shipping on all books!
Farming for the Long Haul: Resilience and the Lost Art of Agricultural Inventiveness by Michael Foley, 265 pages, 5/2 x 8 1/2, softcover. "This is a book about farming today with an eye to an uncertain future." So begins the author as he frames a journey that winds through ancient agricultural systems and understandings, up through farming in the ruins of the 20th century, to the new movement toward resilience. The emphasis is not on a critique of the current failures but rather a revitalized historical overview of what worked (and still does) for past cultures and farming societies throughout the world to inspire us to grow our own food. A decade and a half after we wrote our seminal book on small-scale organic farming, we are hopeful, both because the soil is now more fertile than we thought possible and because the food system has crossed the chasm from being a fringe movement to being, for many people, the way they want to eat. -NK NEW!

9580A: Farming for the Long Haul (8#) for $24.75

Farming While Black: Soul Fire Farm’s Practical Guide to Liberation on the Land by Leah Penniman, 368 pages, 8 x 10, softcover. The author, who many years ago trialed for Fedeco, writes from the experience of her Soul Fire Farm in upstate New York to encourage and empower Black farmers. This is a radical book by an activist committed to ending racism and injustice in the food system. The opening quote from Malcolm X sets the premise: “Revolution is based on land. Land is the basis of independence. Land is the basis of freedom, justice, equality.” And the teachings that follow are both of the practicalities and the legacies of Black agricultural traditions. The book’s “Black Land Matters” has steps and resources for finding land, while also including methods to remediate lead contamination in soil. Crop planning focuses on diaspora plants, as do the recipes. And since saving seeds is essential to preserving culture, there’s an entire section on seed keeping. Interwoven with the techniques is a beautiful interplay of modern life as informed by tradition, spirit, story and community, as it plants the seeds of a new and liberating future. This book’s perspective has historically been excluded from U.S. agricultural chronicles. It addresses topics such as healing from trauma, movement building and restoring degraded land that speak to and for Black experience in ways that inform us all. (See also page 64 for my interview with Larissa Jacobson, a co-director of Soul Fire Farm.) -NK

9561A: Farming While Black (8#) for $32.00

Fermented Vegetables: Creative Recipes For Fermenting 64 Vegetables & Herbs in Krauts, Kimchis, Brined Pickles, Chutneys, Relishes & Pastes by Kirsten K. Shockey and Christopher Shockey, 376 pages, 8 x 10, softcover. With more than 140 recipes that excite and intrigue, this book is causing a stir among fermentation enthusiasts. Fermented salsas, herb pastes, chutneys, krauts and more—the book features recipes based on garden vegetables and herbs organized from A to Z. Tired of pesto getting funky so fast? Make a basil paste that lasts in the fridge for a year. Tired of squash? Ferment it with chiptole. Wondering how to preserve all those nettles by picking up this book? Interweaving tips that add depth and intrigue to recipes throughout, this book offers more diversity year-round for locavores and offers insurance against winter’s garden-fresh herb and vegetable fare. -DS

9576A: Fermented Vegetables (8#) for $24.75

Field Guide to Grasses, Sedges and Rushes by Edward Knobbel, 383 pages, 5 7/8 x 8 1/2, softcover. As you lean and loaf at your ease, pick up this handy guide, observe the stem and ear, and use the key to find the illustration and description. -DS

9570A: Field Guide to Grasses, Sedges and Rushes (8#) for $5.75

Fiery Ferments: 70 Stimulating Recipes For Hot Sauces, Spicy Chutneys, Kimchis with a Kick and Other Blazing Fermented Condiments by Kirsten K. Shockey and Christopher Shockey, 263 pages, 8 x 10, softcover. Not just another book about hot sauce. The Shockleys explore the origins and essence of spice and its use in cuisine around the world. From mild, drawing on peppers and many other ingredients used before peppers traversed the globe. Presents well-written basic techniques alongside step-by-step visual guides to making pepper mash, brine-based sauces and pickles, pastes and mustard, kimchis, relishes and salads. Includes an overview of the process and consider different fermenting vessels. Recipes include Horseradish Ferment, Green Peppercorn Mustard, Rhubarb Achar, Homemade Sriracha, Thai Dragon Mint-Cilantro Sauce, Nettle Kimchi, Red and Greens Curry Pastes, and Vietnamese Dipping Sauce. -AC

9573A: Fiery Ferments (8#) for $24.75

The Food Forest Handbook: Design and Manage a Home-Scale Perennial Polyculture Garden by Darrell Frey & Michelle Czolba, 239 pages, 7 x 9, softcover. Polyculture means multiple species growing together interdependently. This happens naturally in the wild. Indigenous communities cultivated ancient polyculture forest foods long before monoculture. This book makes sense of modern terms like food forest and permaculture by placing them in their historical context. Before launching into how to design and manage a home-scale food forest, the authors take you back in time to tour past food forests around the world. Like an interwoven planting, the book’s organization runs bit wild but the text is easy to read even as it delves into the technicalities of designing food forests. The authors seem to have left nothing out in enumerating considerations for your planning. Compassion, good basic instructions and sample lists, selecting, tending, growing and propagating plants for the root, the leaf, the flower and the fruit. Armed with the power of observation and intimate connection with place, as much as to the science of growing trees. -JR

9578A: The Food Forest Handbook (8#) for $32.75

Forest Trees of Maine: Centennial Edition by the Maine Forest Service, 176 pages, 9 x 12, spiral-bound softcover. Not just another book about Maine trees. The authors are familiar with the tall slim forest trees of Maine. This expanded edition commemorated the guide’s 100th year and includes color photographs of important identification keys, historical photographs of Maine logging, and locations of Maine’s largest specimens. Some plants compete with genus has charts listing important distinctions among species. Species descriptions follow. -DS

9582A: Forest Trees of Maine (8#) for $14.00

The Fruit Forager’s Companion: Ferments, Desserts, Main Dishes, and More from Your Neighborhood and Beyond by Sara Bir, 400 pages, 7 x 10, softcover. Written by a poetic conical professional chef who knows her stuff, this book is bold, smart, witty and so fun to read! The fruits I already love take on a new life in these pages, and the ones that I would not have bothered to explore beckon to me now. On foot or bike, the author roams and forages her urban landscape and suggests that there is no place like home, and that we, too, could be out there moving, examining, noticing and falling in love with fruits growing in usual and not-so-usual corners. All-in-one field guide, history lesson, memoir and cookbook, this book is divided unequally into two parts. Bir begins with her manifesto on consumerism, food sourcing and the power of observation along with a how-to manual on foraging. Part Two, the bulk of the book, dedicates each chapter to a different fruit with familiar edibles like apples and grapes alongside lesser known ones like hackberries, spicebush and sumac, with inventive recipes that are easy to follow. Beautiful photographs, back sidebars, recipe notes, and an entertaining commentary. A series of shorter plant profiles each stamped “Honorable Mention” or “Look But Don’t Eat” make for a pleasantly meandering read in a well-organized text. -JR

9585A: The Fruit Forager’s Companion (8#) for $28.75


9588A: Garden Coloring Book Packet (8#) for $18.00

The Greenhouse and Hoophouse Grower’s Handbook: Organic Vegetable Production Using Protected Culture by Andrew Mefferd, 261 pages, 8 x 10, softcover. Farmer, former researcher at the farm of our friends neighboring seed company, and current editor and publisher of Growing for Market magazine, Mefferd brings his experience in protected vegetable culture to this straightforward manual for commercial growers. In 2009, Mefferd (along with most of Maine) despaired to see field-grown crops succumb to late blight at first fruit. Today, he pulls thirty pounds of tomatoes off a single plant in his greenhouse! Growing under cover offers more diversity year-round for locavores and offers insurance against disruptions to the international food distribution system. For growers, up-front investment is rewarded by hugely increased yields per square foot and a hedge against cash flow rollercoasters—not to mention our increasingly vagrant weather. Mefferd opens by detailing the Dutch approach to protected culture: maximizing the use of space, managing climate, variety selection, structure type, and operational efficiency. The second half of the book offers detailed instructions for the eight crops most likely to generate a profit: four “long crops” (tomatoes, peppers, cucumbers and eggplant) and four “short crops” (lettuce, greens, macrogreens and herbs). Appendices address pests and diseases, tools and supplies, and even offer a word on the bogeyman of organics—hydroponic production. -AC

9600A: The Greenhouse Grower’s Handbook (8#) for $29.75
Growing Garden Seeds: A Manual for Gardeners and Small Farmers by Robert Johnston, Jr., 32 pages, 5\%\times 8\%\times 9\%\%\%\%\%\%\%\%\%\%, softcover. If you are new to seed saving, this little manual by the founder of Johnny’s covers all the basics and is the best place to start. First published in 1976, it is a classic. 9609A: Growing Garden Seeds (#0) for $6.00

Growing Great Garlic by Ron L. Engeland, 213 pages, 6\%\times 9\%\%\%\%\%\%, softcover. Varietal descriptions, history, and in-depth cultural information on growing, harvesting, storing and marketing garlic. The chapter on pests and diseases has practical suggestions for minimizing and containing the damage. 9612A: Growing Great Garlic (#0) for $16.75

Happy Pigs Taste Better: A Complete Guide to Organic and Humane-Based Pork Production by Alice Percy, 272 pages, 7\%\times 9\%\%\%\%. softcover. Make no mistake. The correlation in the title is not a romantic one. And it could have been chosen only by an ex-vegetarian with an excellent palate. This book is about quality of life, both for pig and farmer. Speaking from ten years experience as an organic hog farmer, Fedco’s own Alice presents the ins and outs of everything from feed sources, housing/bedding options and fencing styles, to marketing, record keeping and staying sane. Comprehensive with all necessary details of humane and organic swine life on the farm, also full of useful and sometimes surprising scientific information. (Want to know the optimal micron size of ground feed to prevent gastric ulcers? It’s in here!) In Happy Pigs, you will read about macro issues like maintaining soil quality and the importance of financial literacy, and many specific skills such as recognizing ancestral pig behavior, devising appropriate and holistic ration strategies, diagnosing mysterious health conditions, humane and low-stress slaughter at home, and more. Comes with charts and templates for those who do their homework. A must for all beginners in the world of swine. -AA NEW! 9613A: Happy Pigs Taste Better (#0) for $26.75

The Hidden Life of Trees: What They Feel, How They Communicate by Peter Wohlleben, 288 pages, 5\%\times 7\%\%\%, hardcover. Are trees conscious, sentient beings? Groundbreaking scientific research is clouding the space between yes and no. In evolution, we were “split off from vegetation very early on,” so science has had to work a little harder to understand our plant friends. This is the lens through which the writer has come to better understand the tree community he manages as forester in the Eifel Mountains of Germany. The questions Wohlleben asks are simple 5th-grade science class topics but the answers run as deep as the mystery he briefly illuminates for us, and our imaginations are sparked by how little we know about the invisible world. Wohlleben uses current research to support what might otherwise sound outlandish. He emphatically anthropomorphizes trees to drive home the point that they can indeed “feel” and communicate using light, electrical impulses, sound waves and mycelial networks. The entwined life stories of the forest trees, insects, fungi and bacteria held in this book will cause you to pause in awe after each short chapter. This beautiful book is for everyone. -JR 9618A: The Hidden Life of Trees (#0) for $24.25

The Holistic Orchard: Tree Fruits and Berries the Biological Way by Michael Phillips, 414 pages, 8\%\times 10\%\%\%\%\%, softcover. Written by the renowned New Hampshire-based orchardist and author of The Apple Grower, this book could be called the Encyclopedia of Orcharding for the 21st Century. Reminiscent of the great old Rodale books, it covers a wide range of fruit crops, while addressing orchard design, dynamics and horticulture in unparalleled detail. It’s all here: pruning, planting, companion planting, spraying, not spraying. (See our 8657 Holistic Orchard Spray Kit.) Phillips brings his extensive background in organic orcharding, along with wisdom: “A holistic grower knows that producing healthy fruit is not about manipulating nature, but about supporting a balanced orchard ecosystem.” Whether you’re new at this or an old-timer, you will want a copy at hand this winter. The only other reading you will need, of course, is the latest Fedco Trees catalog. -JB 9624A: The Holistic Orchard (#0) for $36.75

Homegrown Pantry: A Gardener’s Guide to Selecting the Best Varieties & Planting the Perfect Amounts for What You Want to Eat Year-Round by Barbara Pleasant, 328 pages, 8\%\times 10\%\%, softcover. For your veggies, fruits and culinary herbs, don’t you wish you had a guidebook full of growing instructions and tips (like those found in Fedco catalogs)? For plotting your gardens each season, wouldn’t you welcome a resource that suggests how much to plant per person? When you have produce that is ready to harvest, wouldn’t you benefit from a manual that indicates which preservation method best suits each crop? Thanks to Barbara Pleasant, you can have it all in one book. She writes, “This is precisely the information I needed but did not have when I started food gardening in a serious way.” Contains simple time-saving strategies to manage your harvests. Freezing sweet corn? She suggests using the center of a bundt pan to hold an ear upright and catch the kernels as you cut them off. Brilliant! Prepping tons of garlic? Cluge cloves in boiling water briefly, then cool over ice to get the peels to release. Life-changing! Trying to cut through super-hard winter squash safely? Tap a mallet on the back of your sturdiest chef’s knife. Why didn’t I think of that? For anyone wanting to get more serious about eating from your garden year-round. -JPR 9630A: Homegrown Pantry (#0) for $22.75

How to Move Like a Gardener: Planting and Preparing Medicines from Plants by Deb Soule, 244 pages, 6\%\times 9\%\%\%. softcover. "As you cultivate the garden, the garden is cultivating you, both inwardly and outwardly. Gardeners are shaped, pruned and informed by the garden, moment by moment, day by day, month by month and year by year." What a gift from herbalist and wise woman Deb Soule! Way beyond food, flowers or medicine, Deb’s gardening is spiritual practice, mindful rhythms in harmony with all living souls. She unlocks the mysteries of biodynamics as no one ever has before. And, oh!, the incomparable photographs harmonize with her crystalline prose in a work of pure love and devotion. -CR 9636A: How to Move Like a Gardener (#0) for $32.75

How to Start a Worm Bin: Your Guide to Getting Started with Worm Composting by Henry Owen, 95 pages, 9\%\times 6\%. softcover. The subtitle says it all—simple, clear instructions for worm composting. Dispels fears about odors and pests, tells how to start, what’s needed, where to get it one. And it could have been chosen only by an ex-vegetarian author who has a worm bin under his desk at work! -SK 9639A: How to Start a Worm Bin (#0) for $9.75

The Humane Handbook: Shit in a Nutshell, 4th edition, by Joseph Jenkins; 300 pages, 6\%\times 9\%. softcover. In the opening words to his first edition, Jenkins wrote: "The world is a bundle of shit, and it’s a bundle of two categories of people: those who shit in the drinking water and those who don’t. We in the Western world are in the former class." Now in its fourth edition, this self-published classic has sold more than 70,000 copies and been translated into 19 languages. Drawing from 40 years experience turning poop into compost, Jenkins makes the case for closing the fertility loop by making humanure hygienically safe and suitable for growing food, instead of flushing away this valuable commodity and polluting our water supply. Comprehensive yet readable, the handbook looks at disposal of human excrement from all angles: historical, anthropological, scientific, psychological and environmental, and includes diagrams, charts and funny cartoons. He lays out the problems with wastewater treatment plants, septic systems and even the simple outhouse. He takes a serious look at the potential nightmares of nightsoil: pathogens, parasites and phytotoxicants, and how proper composting deals with these hazards. And of course, he provides designs for a composting toilet system, which is relatively simple. Buckets, sawdust (or other organic material for covering), thermometer, compost bin. This book is informative, humorous and inspiring. The average fecophobic American wastes about 1.000 pounds of poop every year. Think of all that free compost...-EB NEW edition! 9641A: Humane Handbook (#0) for $23.25

From The Humane Handbook: Shit in a Nutshell by Joseph Jenkins

Free shipping on all books!
Identifying Diseases of Vegetables by A.A. McNab, A.F. Sherf and K.K. Springer, 62 pages, 8/2x11, spiral-bound softcover. Excellent photographs facilitate accurate disease identification. Includes all the popular vegetables and the common diseases that affect them.

Incredible Wild Edibles: 36 plants that can change your life by Sam Thayer, 480 pages, 6x9, softcover. Sam Thayer’s foraging books are in a league of their own. No other gives such insightful accounts of edible wild species, and the writing is captivating. I’ve read and re-read chapters in his books (Forager’s Harvest, Nature’s Garden) like one would a favorite collection of stories. For some of us, the excitement around the release of this third volume in his series was akin to that of the latest Harry Potter, though the magical world Thayer brings to life is not imaginary—it can be experienced. Each of Thayer’s books stands alone, with no overlap of the plants covered. In this new volume, an exciting selection of foods awaits you out there: greens, berries, shoots, roots, bulbs, nuts, seeds, tree fruit, sap, flowers, and more. He describes each plant in detail: what it looks like, where to find it, and how to harvest it, and how best to prepare it for consumption. With clear photos of the plants’ edible portions (as well as of non-edible ‘look-similars,’ you can ID with confidence. Thayer’s books will help you engage with the landscape in a new way. In this third volume, I appreciate his essays that challenge our assumptions (about foraging, agriculture, nature, civilization) and conclude with a vision of hope for the future of food production. -JPR

Lazy-Ass Gardening: Maximize Your Soil; Minimize Your Toil by Robert Kourik, 240 pages, 8/2x11, softcover. In my twenties, I put in my days of stacking 700 bales of hay into the barn in 95˚ heat with a six-month-old strapped to my back. I’ve since learned that this book is more my speed now. Kourik eschews the unrealistic perfectionism of gardening in the media for experienced, utilitarian, cheap灌溉 advice geared toward maximizing your gardening pleasure and minimizing your gardening pain. He starts the book by recommending you consider where you will nap in your garden! Other slightly less lazy topics include how to get the most out of plant selection, tillage (or no-till) options, compost, water management, tools, pruning and pest control. All written in Kourik’s signature cheeky style (“Use an old golf bag to hold long-handled tools…of course, you’ll probably have to be your own caddie”) and studded with amusing anecdotes (“I met a gardener years ago who worked at the CIA. He brought home shredded government secrets to mulch his vegetables.”) Kourik lives in Zone 9 California, so not all his variety recommendations will work in the North, but most of his advice travels well. If you prefer napping to wrestling with weeds—and honestly, who doesn’t?—his book is for you. -AC NEW!

Letter to a Young Farmer: How to Live Richly without Wealth on the New Farm Garden by Gene Logsdon, 210 pages, 5/8x8/4, hardcover. “Stay small and stay in. ‘Never turn your back on a ram.’ Words to the wise from Gene Logsdon, self-described ‘contrary farmer,’ one of a proud few who knew there was a better way. In this book, written a few weeks before his death, he passes lessons learned and pleasures gleaned from a lifetime of contrary farming on to the next generation, the folks who practice garden farming, who strive to make a living from a few acres through intensive, diversified, organic agriculture, making do and doing well. For Logsdon, and I hope for us, this is the future of agriculture, if it is to have a future. Reading this book is a bittersweet pleasure. -DS

Look at the Sky and tell the weather by Eric Sloane, 240 pages, 8/2x11, softcover. A self-described weather junkie, I’ve tried to read meteorologies for the layperson and absorbed little. Sloane’s approach is different; he’s in love with the air, sky and clouds and he made me realize that’s why I follow the weather obsessively. Structured around an air mass that formed in northern Canada, swept across the U.S. and exited the continent through Maine, each chapter is set in a location along the way with anecdotes about the people affected by the cold front. Best known as a painter, he’s also a plain writer of yarns and tales, some funny, some poignant, all engaging. He ends the book with a beautiful cover picture of a singing loon. Sloane has managed to show small farmers how to get their job done efficiently and profitably, while upholding the ecological principles of organic agriculture. The overall tone is that of a knowledgeable and enthusiastic mentor. -AC

Mycorrhizal Planet: How Symbiotic Fungi Work with Roots to Support Plant Health and Build Soil Fertility by Jean-Martin Fortier, 240 pages, 8/2x8/2, softcover. Quebecois market gardener Jean-Martin Fortier and his wife earn their living by growing CSA shares for more than 200 families on just 1/2 acres. A decade’s experience in small-scale farming informs Fortier’s practical and clear-eyed book: while he touches on the complex issues around soil biology, fertility, and pest control, his focus is on showing small farmers how to get their job done efficiently and profitably, while upholding the ecological principles of organic agriculture. The overall tone is that of a knowledgeable and enthusiastic mentor. -AC

Natural Therapies for Overcoming Opioid Dependency: Control Pain and Recover from Addiction by Dr. Catherine Browne, 240 pages, 6x9, softcover. Thanks in no small part to predatory marketing by Purdue Pharma, the manufacturer of Oxycontin, the Sackler family has amassed billions of dollars in private wealth while millions of Americans sit trapped by opioid addiction. Browne recommends Traditional Chinese Medicine (TCM) as an alternative and complementary approach. The book includes an overview of TCM; profiles of 32 herbs, 20 essential oils, and 5 flower remedies useful in the treatment of opioid addiction; ways to make traditional Chinese herbal remedies, and nutritional supplementation; treatment protocols and complex herbal formulas for both acute withdrawal symptoms and long-term health problems resulting from addiction; and alternate approaches to treating trauma and pain management. She takes a holistic attitude, acknowledging the strengths and weaknesses of both TCM and western medicine, and while there is plenty of non-clinical talk about “energy work” and the “vibrational levels” of plant medicines, she shares her up case with an admirable bibliography of contemporary research supporting these recommendations. Empathetic, practical, and detailed, she takes a wide view of addiction, acknowledging the myriad physical, social, emotional, and spiritual factors and the array of complications that arise in battling and conquering opioid addiction. The book would likely be useful to patients and other substance dependencies or psychological challenges as well.—AC NEW!

The Lost Kitchen: Recipes and a Good Life Found in Freedom, Maine by Erin French, 256 pages, 7/8x10, hardcover. In April 2017 when the Lost Kitchen restaurant opened its phone lines to accept reservations for the 2017 season, the phone system in Freedom shut down, overwhelmed by the calls. With several successful cookbooks, there were just enough to fill the little tables at one of Erin French’s tables can relive that experience. But you needn’t have visited the restaurant to enjoy poring over these recipes, straightforward but not ordinary, and to cook yourself some wonderful meals. Every recipe has an ingratiating charm that made me pause and say, “Wow, I never thought of that.” They don’t demand hours of meticulous fussing with foams and emulsions and tiny tweezers; just loving attention to the freshest, often foraged, ingredients.

The book is organized by season with recipes for all parts of a meal: month-watering photos hint at the dreamy photos of Maine round out this feast for the eyes and palate. -DS

Mycorrhizal Planet: How Symbiotic Fungi Work with Roots to Support Plant Health and Build Soil Fertility by Jean-Martin Fortier, 240 pages, 8/2x8/2, softcover. Quebecois market gardener Jean-Martin Fortier and his wife earn their living by growing CSA shares for more than 200 families on just 1/2 acres. A decade’s experience in small-scale farming informs Fortier’s practical and clear-eyed book: while he touches on the complex issues around soil biology, fertility, and pest control, his focus is on showing small farmers how to get their job done efficiently and profitably, while upholding the ecological principles of organic agriculture. The overall tone is that of a knowledgeable and enthusiastic mentor. -AC

The Market Gardener: A Successful Grower’s Handbook for Small-scale Organic Farming by Jean-Martin Fortier, 240 pages, 8/2x8/2, softcover. Quebeoc market gardener Jean-Martin Fortier and his wife earn their living by growing CSA shares for more than 200 families on just 1/2 acres. A decade’s experience in small-scale farming informs Fortier’s practical and clear-eyed book: while he touches on the complex issues around soil biology, fertility, and pest control, his focus is on showing small farmers how to get their job done efficiently and profitably, while upholding the ecological principles of organic agriculture. The overall tone is that of a knowledgeable and enthusiastic mentor. -AC

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The book is organized by season with recipes for all parts of a meal: month-watering photos hint at the dreamy photos of Maine round out this feast for the eyes and palate. -DS

Free shipping on all books!
The Noma Guide to Fermentation: 120 wild and flavorful edibles from beach plums to wineries
by Leda Meredith, 308 pages, 6x9x9, softcover. Seeking affordable culinary adventures? Planning an edible scavenger hunt? Preparing for end times? This glossy guide to foraging leads a seasonal edible tour through meadows, seashores, and urban areas of the northeast. With this book as your companion, a stroll through your neighborhood can feel like a journey to an exotic market, where some things will certainly be more delicious than others but everything is worth a taste. Each of the 120 plant identifications is accompanied by a good color photo and essential tips for harvesting, preparing and preserving the wild food, as well as thoughtful information for sustainable harvest of each plant. Meredith approaches foraging creatively and ethically as she helps us to see the abundance that awaits. -EB

9696A: Northeast Foraging (04) for $24.50

One Horse Farm by Dahlov Ipcar, 36 pages, 9x10/4, hardcover. A sweet story about a draft horse and a boy, born the same day on a farm. Ipcar based this story and its iconic paintings on her own experiences farming and raising a family in Maine. Gentle, beautiful and a little sad, this book will please readers of all ages. -EB

9699A: One Horse Farm (04) for $18.50

Organic Field Crop Handbook
Canadian Organic Growers, 292 pages, 9x12x8, softcover. Starting with the general principles of organic production, the first sections discuss how to improve soil fertility, increase biodiversity and recycle resources, while farming productively. Gives sample crop rotations for different kinds of farms and a worksheet for determining the appropriate rotation for your farm. Covers when and how to plant specific crops, the nutrient requirements for each, weed and pest management, harvesting and cleaning. Embry illustrates yield of seed and straw, the place of each in a good rotation, and suggestions for intercropping and overseeding. Although written for Canadian growers, all the information applies south of the border. They’ve even converted from metric to English units. -DS

9702A: Organic Field Crop Handbook (04) for $44.75

Organic Revolutionary: A Memoir of the Movement for Real Food, Planetary Healing, and Human Liberation
by Grace Gershuny, 262 pages, 6x9, softcover. The tight-knit world of organic agriculture was even more so back in 1973 when Gershuny headed for the hills of Vermont and quickly put herself in the organic community there. Gershuny had a hand in the founding of NOFA, the development of the OTA, the development of the NOP, and more; she speaks of these important developments, and of other organic movers and shakers who helped to mold them, from a deeply personal perspective. But the book transcends gossip column status to ask important ongoing questions about the organic movement. Should the organic standards be consumer-driven or farmer-driven? Should they focus on the source of inputs or on the ecological soundness of the practices? Can organic agriculture achieve mainstream status without losing its principles out to dry? Whether you like Gershuny’s answers to these questions or not, you’ll enjoy the conversation. -AC

9708A: Organic Revolutionary (04) for $15.50

Our Native Bees: North America’s Endangered Pollinators and the Fight to Save Them
by Paige Emby, 224 pages, 6x9x9, hardcover. We all know honeybees are in trouble from colony collapse, varroa mites, neonicotinoids and overwork. Bumblebee populations have been dwindling, perhaps because of diseases introduced from Europe. When greenhouse tomato growers tried to use commercially raised bumblebees as pollinators. But this book is not merely a chronicle of collapse; it is, more importantly, a celebration of the diversity of bees. Emby takes us on a tour of Crown Bees in Washington where Dave Hunter is raising blue orchard bees, Osmia lignaria, for sale to the orchards of the Northwest as an alternative to honeybees. She takes us to the bee lawn at U Minn created by Mary Meyer and Marla Spivak, although created may be too strong a word—they’ve taken a step back to the days before people thought a lawn was just grass and the chemical industry found a way to get rid of their surplus poison by convincing people clover was an unwelcome weed. She introduces us to some of the many species bees, the hard-working pollinators without whom we would all go hungry. For anyone who has ever sat and watched as the bees buzz, the photographs alone make this a necessary book. -DS

9711A: Our Native Bees (04) for $25.50
Permaculture for the Rest of Us: Abundant Living on Less than an Acre by Jenni Blackmore, 179 pages, 6x9, softcover. This title intrigued me, as I consider myself to be among “the rest of us.” I’m not thrilled by the idea of mapping my landscape or measuring anything when it comes to planting; skip-the-directions-and-dig-in is more my style. I liked this book. It’s not a bit stuck-up. In fact, it’s easy to forget that the author is a certified permaculture consultant because it’s so darn practical. Blackmore has real dirt on her hands. She turned a one-acre dump-y wind-swept seaside plot in Nova Scotia into a thriving mini-farm. The writing is humble, conversational and funny. This book reads more like a novella than a manual, but you can easily skip around to the chapters you like best. The topics are extremely basic (but important!) and probably best suited to newer gardeners and to anyone taking the plunge into homesteading. -JR

9717A: Permaculture for the Rest of Us (0#) for $19.25

Plant Intelligence and the Imaginal Realm: Into the Dreaming of Earth by Stephen Harrod Buhner, 564 pages, 6x9, softcover. John Muir said “When one tugs at a single thing in nature, he finds it attached to the rest of the world.” This book is proof of that simple truth. A consummate storyteller and synthesizer, Buhner juxtaposes concepts, quotations and experience in a call-and-response thta builds a deeper understanding that the world is alive and is communicating with us, if only we would listen. The result is a marvelously potent work of art and science, a multi-faceted jewel to be read slowly and savored, a challenge to what we’ve been taught about how the world works. Weaving hard science with ancient myth and poetic wisdom, Buhner prods us to open our understanding to the wonders of how the exquisitely balanced interplay of plants and animals and earth manifests all around us. A perfect accomplishment for the winter hibernation of gestating dreams. Buhner weaves a tale destined to alter our perceptions. -NK

9720A: Plant Intelligence and the Imaginal Realm (0#) for $25.00

Preserving with Pomona’s Pectin: The Revolutionary Low-Sugar, High-Flavor Method forCrafting and Canning Jams, Jellies, Conserves, and More by Allison Carol Duffy and the Partners at Pomona’s Universal Pectin, 176 pages, 7/t2x9/4t, softcover. We won’t get in the habit of offering a book that includes an overview of herbal medicine, outlines 33 well-known and widely grown and used herbs and spices. Includes 124 photograph-enhanced recipes for tinctures, teas, salves, syrups, oils, infusions and spiced vinegars. A beginning herbalist can easily set up an apothecary in the kitchen and stock the medicine chest with this book as a guide. -HC

9711A: Rosemary Gladstar’s Medicina Herbs (0#) for $15.00

Sacred Instructions: Indigenous Wisdom for Living Spirit-Based Change by Sherr-Mitchell, 256 pages, 5/2x8/2t, softcover. Every word counts in this broad yet concise book and you’ll want to savor it through the winter as you read it aloud, discuss with friends, then read it again. Grounded in the living wisdom of her own community, Penobscot activist, visionary and human rights lawyer Sherr-Mitchell offers hope to those of us wrestling with who and how we are in this beautiful and hurting world. Mitchell never lectures or scolds, though she speaks with unflinching clarity. What she offers is a loving invitation to bring ourselves into harmony with the sacred instructions vibrating throughout the universe, and to gather our energy for the work that supports life. I recommend keeping several copies on hand because you’ll keep giving them away. -SO

9744A: Sacred Instructions (0#) for $17.75

The School Garden Curriculum: An Integrated K–8 Guide for Discovering Science, Ecology, and Whole-Systems Thinking by Kaci Rae Christopher, 320 pages, 8x10, softcover. My family kept a large vegetable garden when I was a child, and some of my earliest memories were formed there. Not all children are so lucky. Many grow up with no idea how a carrot ends up on the table or how a potato grows. This disconnect comes at great culinary, social, and environmental cost to society. Christopher shows how we can return traditional agricultural knowledge to a central place in education, while also meeting contemporary institutional expectations (she ties her curriculum to the Next Generation Science Standards). Her curriculum is broken down by age group, then by season, with age-appropriate activities that teach students about botany, ecology, and social interaction while keeping their bodies active and instilling the permaculture principles of “Care for Self, Care for Others, Care for the Land.” Sample activities include “Gardener’s Math” (a first-grade activity teaching measurements, estimates, and the recording of data), “Cafeteria Waste Audit” (a fourth-graders study: food waste and explore vermicomposting), and “Food Preservation” (a pickling workshop for eight-graders). She advocates for interactive, consistent student participation rather than isolated activities that lose sight of the whole process from seed to table. Not just for professional educators: This book contains a wealth of ideas for homeschooling, or for adults who want to share the gardening experience with the children in their lives. -AC NEW!

9746A: School Garden Curriculum (0#) for $32.50

Seed to Seed by Suzanne Ashworth, 2nd edition, 240 pages, 8/2x11, softcover. Considered the classic reference with detailed instructions on seed saving techniques and spectacular photographs. This is the book our seed growers use. -CR

9756A: Seed to Seed (0#) for $24.25

Silvopasture: A Guide to Managing Grazing Animals, Forage Crops, and Trees in a Temperate Farm Ecosystem by Steve Gabriel, 320 pages, 8x10, softcover. The dominant culture of food production today forces us to separate the interdependent features of our ecosystems, erecting borders between elements that really belong together. We think of the forest as forest and the field as field. We regard species only in terms of their short-term usefulness to us and only if they conform to our obsessive technologies. Practice of silvopasture pushes against that dominant culture by integrating trees and perennial forages into a multi-layered grazing system. This approach to land use for rearing livestock builds diversity (both “wild” and domesticated), density and resilience while greatly aiding in much-needed carbon sequestration. Steve Gabriel assembles as thorough a guide to silvopasture as one can expect. Myriad examples include the age-old dehesa system in Spain where pigs feast on acorns; sheep browsing young honey locust at Gabriel’s own farm; ducks foraging and fertilizing young fruit orchards. Drawing on lessons from forest and grassland ecologies, Silvopasture proposes a farm ecology that rediscoversthe wisdom of those who lived before the loss of the Commons. -AA

9762A: Silvopasture (0#) for $35.25

Free shipping on all books!
Vegetable Gardening for Organic and Biodynamic Growers: Home and Market Gardeners by Joel Morrow, 389 pages, 7x10, softcover. Not your run-of-the-mill gardening book; herein lies the biographies of more than 70 vegetables. Yes, “biography” is the word—not mere profiles or sketches, these are intimate introductions gleaned from decades of observation and experience in the garden. Joel Morrow loves plants, their origins, their culture, and wants them to succeed, so he shares his vast expertise. He includes biodynamic recommendations that are easy to follow, along with horticultural, nutritional and ecological information. But the charm of this book is that it’s as if you were sitting with a sociable old codger reminiscing about gardens. Which is not to say he rambles—the advice is fairly concise, while considering each vegetable “a work of art, a journey, a rite of passage” and so the conversation spirals outward into new perspectives. This winter as you dream up your spring garden, keep this book on your nightstand. -NK

979BA: Vegetable Gardening for OG & BD Growers (0#) for $28.00

What’s Making Our Children Sick?: How Industrial Food Is Causing an Epidemic of Chronic Illness, and What Parents (and Doctors) Can Do About It by Dr. Michelle Perro and Vincanne Adams, 272 pages, 6x9, softcover. A veteran pediatrician teamed with a medical anthropologist make the case that a prior generation’s “healthy foods” are now making our kids sick—40% of our children have allergies and 10% of infants under a year have gastroesophageal reflux disease. And these are not Michael Pollen’s “edible food substances” with empty calories and lots of carbohydrates, but real foods, like eggs and milk and nuts. What’s changed? Through case studies and clear scientific follow-through, the indictment is against industrial food and, most notably, GM foods and glyphosate (RoundUp), whose original use was for cleaning metal pipes. We may have clean foods in terms of microbial pathogens, but we have dirty foods in terms of chemical load. This, combined with environmental toxicants, creates an overload in our bodies, and especially in young bodies, that is hard to discharge. Many of us know this yet hold a well-informed passivity that stems from a sense of futility. But Mark, seeking to galvanize to protect our children, who are under threat. This book is well poised to launch us into the necessary action to create a healthy food environment. -NK (This year we feature Nikos’ essay on giliospath, see page 106.)

9810A: What’s Making Our Children Sick? (0#) for $24.25

What’s Wrong with My Marijuana Plant?: A Cannabis Grower’s Visual Guide to Easy Diagnosis and Organic Remedies by David Deardorff and Kathryn Wadsworth, 192 pages, 7x2x9/1, softcover. The only book dedicated to the growth and horticulture of a single species in the widely popular “What’s wrong with my…” series. And for a good reason. Cannabis seems to be a very attractive host to a variety of pests and diseases. This book removes the guesswork and checks your neighbors’ wisdom. The simple organization of the visual guide facilitates a methodical investigation of whatever is ailng your plant. Provides all-organic remedies for each problem to get your plants back to good health. Wise to have on hand before trouble hits! -AA

9813A: What’s Wrong with My Marijuana Plant? (0#) for $19.75

The Whole Okra: A Seed to Stem Celebration by Chris Smith, 258 pages 7x10, softcover. Seed sales trends come in waves. For example, last year caraway and luffa seeds flew off our shelves. And there was a time when we sold upwards of 40 pounds of okra seed in a year, no small feat for a small seed company that specializes in crops suitable to cold conditions. I predict this book will revive okra sales. Heck, even the gardening-challenged will want to plant okra; the author is that persuasive in his love for the pod. And not just the pod, but the leaf, seed, stamina, fiber and slime. Yes, he embraces the slime as a cosmetic and for making marshmallows. Need a compostable straw? Okra stem. Need a holiday ornament? Dried pods. Seeds alone can make tempah, oil, “coffee” or flour. And we haven’t yet gotten to the pods, which are highlighted with a great variety of tradition- and innovative recipes, complete with mouthwatering photographs and engaging informative stories. The final section describes how best to grow a crop for yourself. Smith’s diverse display of 60 varieties doesn’t even include Cajun Jewel—there’s a whole world of okra out there to explore. This book is your invitation. –NK NEW!

9815A: The Whole Okra (0#) for $28.50

Will Bonsall’s Essential Guide to Radical, Self-Reliant Gardening: Innovative Techniques for Growing Vegetables, Grains and Perennial Food Crops with Minimal Fossil Fuel and Animal Inputs by Will Bonsall, 400 pages, 8x10, softcover. As a former apprentice of Will’s, I assumed his book would be a nostalgic journey but not especially enlightening. I couldn’t have been more wrong. There are enough gardening philosophies and techniques in this book to keep anybody Synopsis for many seasons to come. The product of more than 40 years experience, this book doesn’t waste time on the basics. Instead, Will focuses on the relationship between unique to his subsistence farm, and I bet you’ll want to try more than a few of these innovations. Will has taken the process of composting and “turned it into an art form. Based on his idea of “eco-efficiency,” Will shares wisdom about seed propagation, farm systm design, growing staple crops like grains and oilseeds, and food processing. Plus, his incredible wit makes this one of the most entertaining and informative gardening books you’ll ever read. -JPR

9819A: Will Bonsall’s Essential Guide (0#) for $31.75

The Year-Round Solar Greenhouse: How to Design and Build a Net-Zero Energy Greenhouse by Lindsey Schiller with Marc Pinke, 307 pages, 7x10, softcover. Is it ever too cold to grow a tomato in Maine in February instead of trucking it in from Florida? Should we even eat tomatoes in Maine in February, or should we virtuously resign ourselves to months of turnips, bored, and scurvy? As greenhouses gain popularity as space extenders, they have earned some backlash for their energy-hungry need for supplemental heating and lighting. But what if we can have our tomatoes and our virtue, too? Schiller and Pinke show how to minimize greenhouse energy use both through basic good planning (siting, orientation, proper insulation, good extraction) and through more advanced techniques. Also includes information on solar hot water, rocket mass stoves and compost heaters, as well as aquaponic and hydroponic systems. -AC

9819: The Year-Round Solar Greenhouse (0#) for $28.25

You and I Eat the Same: On the Countless Ways Food and Cooking Connect Us to One Another edited by Chris Ying, 216 pages, 6x9/2, softcover. Whether you are an avid recipe hunter or an ur-foodie, you probably hunger not just for flavor but for story. This unique collection of ethno-culinary investigations reveals the common threads running through our diverse cooking traditions. Chapter titles speak for themselves: “Everybody wraps meat in flatbread.” “Your fire and my fire burn the same.” “There is no such thing as a nonethnic restaurant.” Diverging from the notion of culinary difference, this book brings together stories and histories of food and people from around the world in the light of their archetypal and incidental similarities. In your travels you will find Mennonites making cheese in Mexico, a Nashvillian serving fried chicken in Australia, a Nepalese steaming momos in San Francisco, along with curious histories of sesame seeds and cheese and even cannabis. In Chris Yang’s introduction it makes it clear: “Deliciousness is an undeniable benefit of immigration. When people move around, food gets better.” Cherish the beautiful center-fold photographs of leaf-wrapped foods from around the world, but don’t expect recipes. -AA

9811A: You and I Eat the Same (0#) for $19.75

Your Brain on Plants: How to Improve the Way You Think and Feel with Safe— Proven—Medicinal Plants and Herbs by Nicolette Perry and Elaine Perry, 243 pages, 7x9, softcover. Published in the UK as Botanical Brain Balms. We all know that the brain and nervous system have an enormous effect on health and well-being. Herbalists know that plants contain multiple active components that work together, and differently, from single pharmaceutical extracts. Now, two PhD scientists have compiled attractive and accessible profiles for 56 plants grouped by Calming Balms, Cognition Boosters, Blues Busters, Sleep Promoters, Pain Relievers, Energizers, Mind Altering Plants, and more. General notes and checks your neighbors’ wisdom. For each plant, a way to use the plant and its safety. Sidebars with recipes and practices to promote well-being are interspersed. The book concludes with many resources including a glossary, a good index and thorough bibliography of all the studies cited for each plant. A Beacon for the herbalist would probably want another resource along with this book, but I think anyone interested in plant medicine will enjoy it. -SK NEW!

9834A: Your Brain on Plants (0#) for $16.75

Thank you for sharing your interesting stories, bizarrely awesome artwork, and unique varieties of seeds. To another year of healthy crops and nutritious food!

Marc Cavatorta, Ipswich, MA

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<td>Seeds items 200–5999</td>
<td>vegetable, herb and flower seed</td>
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<td>Daily shipping begins Jan 2, 2020. Twice-a-week shipping begins in May. Backorders shipped throughout the season, finishing by late March. Crops needing an early start are shipped ASAP.</td>
<td>Free for all orders $30 and over. Under $30, pay $6 shipping charge. We ship to Canada: internet orders only, shipping charges apply.</td>
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<td>seed potatoes, onion sets &amp; plants, ginger, turmeric, sweet potato slips</td>
<td>pages 110-116 order form pg 163</td>
<td>Order ginger, turmeric by Feb 24; all other products by April 6. Limited inventory &amp; 50#-bag potato clearance after April 6. Ginger, turmeric ship in March. Potatoes, onions, sweet potato slips begin shipping in April.</td>
<td>See chart on order form, page 163. For lower prices, consider depot shipping, details pg 166.</td>
<td>Pick up at the Tree Sale, 9:00 –3:00, May 1 and 2, or May 8 and 9. We will send a confirmation email or postcard.</td>
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<td>Organic Growers Supply (OGS) items 8000–9999</td>
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<td>pages 118-159 order form pg 165</td>
<td>We ship year-round!</td>
<td>See chart on order form, page 165. Items with 0# weight ship for free. For lower prices, consider depot shipping, details pg 166.</td>
<td>We send a confirmation email or postcard when your order is ready. Warehouse is open Tues, Weds, Thurs from 9:00 –3:00.</td>
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Organic Growers Supply: Items 8000 and up, pages 118-159

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<td>87¢/lb</td>
<td>74¢/lb</td>
<td>65¢/lb</td>
<td>58¢/lb</td>
<td>1.57/lb</td>
<td>83¢/lb</td>
<td>74¢/lb</td>
</tr>
<tr>
<td>779-961, 970-994</td>
<td>8.50 17.60 24.60</td>
<td>28.30 35.60</td>
<td>41.50 48.30</td>
<td>49.10 54.30</td>
<td>1.27/lb</td>
<td>87¢/lb</td>
<td>74¢/lb</td>
<td>67¢/lb</td>
<td>58¢/lb</td>
<td>1.77/lb</td>
<td>83¢/lb</td>
<td>74¢/lb</td>
</tr>
<tr>
<td>AK &amp; HI</td>
<td>8.50 17.60 24.60</td>
<td>28.30 35.60</td>
<td>41.50 48.30</td>
<td>57.10 63.90</td>
<td>2.07/lb</td>
<td>83¢/lb</td>
<td>74¢/lb</td>
<td>67¢/lb</td>
<td>58¢/lb</td>
<td>2.04/lb</td>
<td>83¢/lb</td>
<td>74¢/lb</td>
</tr>
</tbody>
</table>

We accept Visa, MasterCard, American Express and Discover Card.

Delivery Options:
- UPS/Priority Mail
- Pickup on _____________ (date)
- Tree Sale Pickup (order by 4/24)
- Common Carrier for delivery by tractor-trailer.

Additional charge for straight truck or lift-gate.
Email alice@fedcoseeds.com for a quote.

We accept payment by card, gift certificate, check and money order (payable to Fedco).

OGS Early Bird Discount cutoff: December 31, 2019
Final order deadline: None!
Check up-to-date product availability, view photos and order online at fedcoseeds.com.
Save on Shipping with Depot Pickup!

Want to order some rock powders or a sack of potatoes, but find the cost of shipping prohibitively expensive? Never fear—shipping depots are here!

We can ship full pallets of goods at much lower per-pound rates than UPS packages, but few customers order hundreds of pounds at a time. We have farms and storefronts throughout the Northeast lined up to accept monthly pallet shipments of Growers Supply goods so our customers can pick up their orders close to home at shipping costs up to 80% lower than UPS rates.

- Potato orders ship to depots in April.
- OGS orders can ship to most depots March-May. A few depots also receive a September shipment. You can check currently available depots at fedcoseeds.com/ogs/depot_shipping.htm or email ogs@fedcoseeds.com
- Depot orders are accepted online only, as we need to communicate with depot customers electronically.
- We accept depot orders all winter, but depot shipments won’t begin until March. During depot shipping season, each depot has a monthly order deadline; orders are generally ready to pick up within two weeks after the order deadline. Alice’s mechanic says his work is “good, fast, and cheap: pick two.” We do not recommend depot ordering if you are in a hurry! We will send pickup instructions when your order is ready. Your order will be stored inside and labeled clearly with your name. We ask customers to pick up their orders within a week of arrival at the depot.
- Group orders are welcome to ship to depots to double up on their savings.
- We need to collect at least 500 lb worth of orders to make a depot shipment happen. If we have to cancel a depot shipment, we will offer to reship you for UPS shipping or to cancel and refund your order.

At press time, we had depots in these locations:
- Maine (Whitefield, Woodland, Edmunds, Brunswick, Camden, Scarborough, and York);
- New Hampshire (Warner);
- Massachusetts (Buzzards Bay and Lanesborough);
- Rhode Island (Cranston and Little Compton);
- Vermont (Dummerston and Manchester);
- Connecticut (Simsbury and Woodbridge),
- New York (Nedrow, Oneonta and Delmar);
- New Jersey (Ashbury and Pennington);
- There may be others available by the time you order. When you check out online and select “Ship to Depot,” a current list of available depots will appear in a drop-down menu.

### Truck Shipping

For orders over 300# consider delivery by freight truck. This option can save you oodles of dough, but it’s not as simple as shipping with UPS. Before you ask us to ship by truck, please note the following requirements:

1. Your road and driveway must be able to accommodate a full-sized tractor-trailer truck and allow it to turn around. Commercial truck drivers are skilled, but they are not superhuman.
2. You must be present to accept the delivery. We ask our freight companies to contact our customers before delivery so that you know when to expect your order.
3. You must provide equipment or labor to unload. A forklift is best, but unloading by hand is okay if you can do it in less than fifteen minutes. We can request a lift gate to lower the pallet to the ground for a fee of $50-150 depending on the carrier.

If your own location is not suitable for receiving a freight delivery, try inquiring at a local garden center or lumberyard. Such businesses may be willing to accept the delivery for you. We will need their business name, delivery address and dock hours.

We have flat rates for New England, NY, NJ & PA for pallets weighing up to 2000# (please see the chart on page 163 or 165). For a quote on deliveries outside this area or for deliveries of four or more pallets, please email ogs@fedcoseeds.com or call 207-426-8247 with your zip code and the weight of your order. If your order weighs 300-800# and you live near one of our shipping depots in the Northeast, that will probably be your cheapest option.

### Depot Shipping

<table>
<thead>
<tr>
<th>State</th>
<th>Per lb</th>
<th>Minimum Shipping</th>
</tr>
</thead>
<tbody>
<tr>
<td>ME</td>
<td>.13</td>
<td>$3.00</td>
</tr>
<tr>
<td>MA, NH, RI, CT, VT</td>
<td>.14</td>
<td></td>
</tr>
<tr>
<td>NY, NJ</td>
<td>.25</td>
<td></td>
</tr>
</tbody>
</table>

![Organic Growers Supply 2020](https://example.com)
Fedco Seeds & Supplies:
Seeds, potatoes, cover crops, soil amendments, tools, books & more

Seeds, seeds, seeds!
Nearly 1,000 vegetable, herb & flower selections!
366 organic seed selections!
42 potato varieties!
Cover crops, farm seed, grains!
• No GMOs •
• No fungicide-treated seed •
• We support Breeders and Keepers of Seed and the Open Source Seed Initiative (see p. 4).

All your organic growing needs!
Rock powders, fertilizers, probiotics!
Seed starting supplies!
Pest control for garden & orchard!
Tools, irrigation, Fedco fashions!
BOOKS!

Shop at our warehouses
at 688 Bellsqueeze Rd, Clinton, ME:
• Supplies warehouse is open Tues, Wed, Thurs, from 9am-3pm, year-round.
• Seeds warehouse (next door) is open same hours, January through October.
• All warehouses are open during our spring Tree Sale, a great time to shop for plants and pick up potato seed!

2020 Fedco Tree Sale
Trees, shrubs, perennials & more
Friday and Saturday, May 1 & 2
9 until 3, for customers with preorders
Friday and Saturday, May 8 & 9
9 until 3, for everyone
(at our Hinckley Road warehouse)

Seeds, seeds, seeds!

Looking Ahead with 2020 Vision
Read our interviews with:
Rowan White, of the Indigenous Seed Keepers Network and Sierra Seeds, p. 19
Michael Foley, farmer and author of the new book Farming for the Long Haul, p. 34
Aabir Dey, director of the Bauta Family Initiative on Canadian Seed Security, p. 50
Larisa Jacobson, co-director and team member at Soul Fire Farm, p. 64
Bryan O’Hara, organic vegetable farmer and no-till expert, p. 113
Dawson Julia, of East Coast CBDs and the Maine Cannabis Coalition, p. 125

Don’t miss these essays by our staff:
“The Glyphosate Roundup” by Nikos Kavanya, p. 106
“Co-optimism for the Future of Farming” by Alice Coyle, p. 108

Hot off the press!
Two NEW books from Fedco staffers:
Apples and the Art of Detection by John Bunker, see page 151
Happy Pigs Taste Better by Alice (Percy) Coyle, see page 154

fedcoseeds.com