



Gardening Guide



About Down To Earth™

Logo Key



Organic Materials Review Institute

Products included on the OMRI Products List and approved for use in organic crop production. These products have been evaluated to determine that they comply with organic standards.



MycoApply Certified

The MycoApply® Certified logo is the gold standard of mycorrhizal certification, assuring the overall integrity of mycorrhizal ingredients for consumers and end-users throughout numerous markets and industries.

All Certified Products meet the following guidelines in relation to proper mycorrhizae use and incorporation:

- Appropriate Rate (*Application rates should give full inoculation in a 1 year period*)
- Used in/with Appropriate Material (*not harmful to the mycorrhizae*)
- Finished product must demonstrate reasonable performance for intended purpose
- Appropriate species for the appropriate target plants



CDFA Organic Input Material

Products registered and approved by the California Department of Food & Agriculture that may be used in organic crop and food production and that comply with the requirements of the National Organic Program standards.

For more than 39 years, **Down To Earth™** has been one of the country's leading manufacturers and distributors of natural fertilizers and premium organic gardening products.

Down To Earth™ features a complete line of natural and organic fertilizers, soil amendments, composts and potting media that work with the microorganisms, fungi and organic matter in the soil to feed plants and stimulate growth.

Our natural fertilizers are carefully blended from the best sources of organic nutrients without the use of synthetics, growth stimulants or low-quality fillers like poultry waste. You can be confident that you are giving your farm or garden the best product available, whether it's a multi-purpose blend or a specialized soil amendment.

Our products are used by home gardeners, commercial growers, nurseries and garden centers, both conventional and organic, who want an eco-friendly alternative to modern chemical fertilizers and soil additives. Any gardener or farmer can utilize our professional-grade, field-tested



products to improve crop production, strengthen soil health and promote a sustainable approach to agriculture.

Protecting the environment is integral to the Down To Earth™ philosophy. Since 1997, we've packaged our

fertilizers in 100% recycled paperboard boxes. The boxes are unbleached and printed with plant-based inks. The box is so completely recyclable it can be shredded and added to your compost pile! Our boxes hold more than other brands making them the

We take pride in offering only the highest quality ingredients that help provide an effective and environmentally friendly approach to plant care, crop fertilization and soil management.

most economical and convenient option for the average gardener. We also offer small and large bags for the avid grower, small farmer and for use in commercial crop production.

Down To Earth™ extends a sincere thank you to all of our customers for the opportunity to provide you with the very best in organic and natural gardening products.

Our extensive product selection has developed over the last thirty-nine years due to your requests, positive feedback and continued support of organic and sustainable agriculture.

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Feed Your Soil:

The Basics of Organic Gardening

TIPS FOR PLANTING BULBS

Select a location in full or part sun, and loosen soil to a depth of six inches or more.

Work in compost along with a high-phosphorus fertilizer, such as **Down To Earth's™ Bone Meal 3-15-0, Fish Bone Meal 3-16-0, Rock Phosphate 0-3-0** or **Rose & Flower Mix 4-8-4**.

Plant bulbs according to directions on package with tip of bulb facing upward and blunt end facing downward.

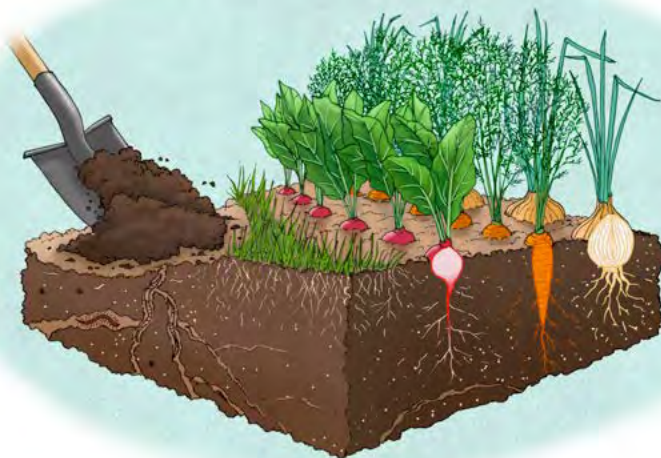
Plant bulbs of similar color and type together in a mass grouping, sometimes called a sweep, for a more dramatic effect.

Plant bulbs according to height in a border with tallest plants at the rear.

FOLIAR FEEDING

Foliar Feeding is a method of fertilizing that allows plants to absorb nutrients more quickly, rather than waiting for fertilizer to leach into the soil solution to be picked up by the roots. Foliar feeding provides results in hours instead of days.

To begin foliar feeding, first mix up the foliar tea according to the package directions and place in a clean sprayer. Spray early in the morning. Start at the bottom of the plant and work toward the top, spraying the tops and undersides of the leaves until liquid begins to drip off.



JUST WHAT IS ORGANIC GARDENING?

Organic gardening is growing plants in harmony with nature by using biologically sound cultural practices to improve the soil, promote healthy plant development and encourage a fruitful harvest. By utilizing a diverse selection of natural and organic fertilizers, as well as minerals and soil amendments, we can support this process.

Feeding the soil is the foundation of organic gardening. Conventional gardening practices treat the soil as a structural medium and focus only on feeding the plant directly with synthetic fertilizers. This may diminish the soil's natural capacity for supporting plant health because it ignores, and may harm, the essential living components of soil that plants

rely on. Organic gardening emphasizes continually strengthening the complex soil environment. That promotes healthy, vibrant plant growth, and allows the plants to grow at a natural pace and produce the best tasting, most nutritious foods for you and your family.

For plants to grow, they need air, water, food and a porous medium for root expansion. The food is provided by minerals and organic matter in the soil, and can be supplemented with the addition of amendments, composts, manures, minerals, natural fertilizers or by companion plants such as legumes.

Besides providing plant nutrients, organic matter provides additional functions. It adds structure to sandy soils and helps loosen clay. It also retains moisture, improves aeration and feeds the beneficial inhabitants, such

as bacteria and fungi present in the soil. Organic matter originates from once living sources such as plants and their root systems, mulch and woody materials, soil organisms and plant and animal waste in the form of compost. This process of renewal and decay eventually transforms organic matter into humus, a highly complex substance that is often described as the “life-force” of a healthy soil.

Composting: Mature compost is also referred to as humus and is thought by some to be the most important factor in the enrichment of soils in both a physical and chemical sense. Besides increasing fertility, compost helps the soil retain moisture and encourages the formation of good soil structure. Chemically, it makes nutrients more available to plants and feeds the soil population of microorganisms and other creatures, thus maintaining high levels of healthy soil life.

Compost is also an ideal way to recycle what would otherwise be considered home and yard waste. Backyard composting transforms waste into a valuable resource, and it reduces the amount of materials heading towards landfills.

We suggest applying 2 inches of compost to new gardens and 1 inch of compost to existing gardens annually. Top dress lawns, fruit trees and containers with one-half inch of compost twice each year.



Cover Crops: Cover crops are another way to increase organic matter and feed your soil at the same time. They help break up compacted soils and control erosion while deterring weeds and attracting beneficial insects.

When mown and left to decompose, they are referred to as a green manure, acting like mulch and slowly adding nutrients to the soil.

Good cover crop choices include alfalfa, barley, buckwheat, clovers, fava beans, field peas, oats, vetch, winter rye and wheat.

Mulch: Mulch can be placed around plants to help retard weeds, hold moisture, prevent erosion and modify soil temperatures. Gradually, the mulch materials will break down, adding to the organic matter content and enriching the soil. Excellent sources of available mulch include leaves, bark, straw, pine needles and even plain cardboard.

Keep in mind that compost, cover crops and mulch should be used as part of a comprehensive organic system to increase soil fertility and thereby improve plant growth and production. Natural and organic fertilizers can complement the nutrients present in organic matter amendments to enhance fruit and vegetable plants growing in your garden. Organic gardeners employ a more sustainable approach to gardening, that revitalizes their soil and develops a stronger relationship with Earth’s ecosystems.

TIPS FOR CONTAINER GARDENING

Allow 2 gallons of container size for every foot of plant height (e.g. a 2-foot high plant will need a 4 gallon pot).

Many plants grow quickly and may become root bound in a short time, so select a pot large enough for future growth.

Down To Earth’s™ Potting Soil has adequate drainage, so it is not necessary to add rocks or broken pottery pieces to the inside bottom of the containers.

Keep the soil slightly moist. Water when needed, once or twice a week during the summer, and once a month during the winter. Do not over water.

To regulate green growth and encourage more flowers, add a dry fertilizer to the soilless mix when planting. Add a liquid or soluble fertilizer when needed.

VOCABULARY

Top dressing is sprinkling powdered or granular fertilizer around a plant and gently scratching it into the top layer of soil.

Side dressing is adding fertilizer alongside a row of plants, generally in a shallow trench.

Root bound means a plant’s roots have grown too large for the container, which prevents the plant from absorbing proper nutrients.

A Drip Line is the outer edge to which a plant’s branches spread. This is where rainwater tends to naturally drip from the plant and where the root system is concentrated.

Supplement Your Soil: The Basics of Organic Fertilizers

OUR PHILOSOPHY ON SYNTHETICS

Synthetic fertilizers do not improve soil structure, and they allow nutrients to leach through the soil into waterways before plants can absorb them.

The leaching effect caused from overuse of synthetic fertilizers destroys the natural soil structure and eventually causes the soil to become compacted and lifeless.

The salt content in synthetic fertilizers is toxic to beneficial soil microorganisms, such as mycorrhizae.

Synthetic fertilizers can release ammonia gas that can inhibit seed germination and burn tender seedlings.

Synthetic fertilizers promote accelerated growth, making plants vulnerable to disease and insect pests.

Synthetic fertilizers promote the use of chemical pesticides and fungicides that can damage or destroy soil microorganisms and persist for long periods.

Nitrogen in synthetic fertilizers is mostly quick release. The unused nitrogen leaches through soil, contaminating groundwater including drinking water wells.



Organic Fertilizers derived from plant, animal or mineral resources, and combined with organic matter, are ideal for enhancing soil fertility and stimulating plant growth in a sustainable and environmentally friendly way.

Organic fertilizers add nutrients to the soil for uptake by plants and for use by the myriad microorganisms that inhabit healthy, productive soil. Fertilizers are available as single ingredient nutrients or as complete blends with multiple applications.

UNDERSTANDING THE NPK RATIO

Fertilizers are labeled with numbers that represent the percentage of the **three primary macronutrients – nitrogen (N), phosphorus (P) and potassium (K)** – that are available in the fertilizer. These elements are listed as the **NPK ratio**. For example, our

All Purpose Mix 4-6-2 is comprised of each primary nutrient, whereas our **Feather Meal 12-0-0** provides only Nitrogen.

Each nutrient plays specific and complementary roles. Generally, nitrogen energizes vegetative growth, phosphorus produces expansive roots, flowers, fruits and viable seeds, while potassium (or potash) promotes sturdy stems, plus resistance to disease and temperature stress. Most fertilizers will also contain varying amounts of the **secondary macronutrients – calcium, sulfur and magnesium** – along with trace elements or micronutrients that also play essential roles in plant nutrition.

Since organics break down at a slower rate, they release nutrients slowly with greater effectiveness than conventional fertilizer, reducing the need to reapply fertilizers as often in order to maintain soil fertility. This minimizes the possibility of “burning”

plants with concentrated chemical supplies of nutrients.

By encouraging soil microbial life to flourish, they improve overall soil health rather than degrade it. Since organic fertilizers last longer and release their nutrients slowly, their long-term NPK amounts will be greater and more beneficial than what is shown on the label.

Single-Ingredient Fertilizers: They are used for specific plant needs and in certain stages of a plant's development. For example, a high nitrogen source like **Blood Meal 12-0-0** is used when heavy feeding plants, such as corn, need an additional boost early in the season. To promote big, beautiful blooms on your flowering plants, utilize a high phosphorus fertilizer, such as **Seabird Guano 0-11-0** or **Fish Bone Meal 3-16-0**.

Blended Fertilizers: These mixes, on the other hand, are used for more general needs around the home and garden. Our **All Purpose Mix 4-6-2** is ideal for vegetables, flowers and trees as well as houseplants. A great advantage of multipurpose blends is that they save gardeners time and labor by offering a variety of single ingredients pre-mixed in exact and balanced proportions.

THE VARIOUS FERTILIZER STYLES

Down To Earth™ fertilizers are sold in three basic forms: dry, water-soluble powder and liquid.

Dry fertilizers: Dry fertilizers come in several textures: pulverized powder, meal, granulated and pelletized. They can be broadcast or spread

over garden soils and lawns, as well as incorporated into potting soils to provide nutrients to transplants and new plants. Dry organic fertilizers generally meet plants' needs by releasing their nutrients slowly over time in a steady supply.

Water-Soluble Fertilizers: These fertilizers begin to break down immediately, so they can be applied to the top few inches of soil for quick release, transformed into a liquid fertilizer for foliar feeding or used in irrigation systems. A foliar tea can be made by soaking the fertilizer powder overnight in a cloth bag suspended in a container of water. In the morning, empty the residue that is left in the bag around your garden, and pour or spray the richly colored liquid on garden plants.

Liquid Fertilizers: They usually come as a concentrate and need to be diluted with water before using in your garden or to feed your houseplants. Both teas and dilutions can be applied with watering cans, hose end sprayers or through irrigation systems in a method known as fertigation.

Tea and liquid soil feedings work best after a light rain or regular watering when the soil is more absorbent. Teas and liquids can also be applied directly to the leaves and bark of plants and trees using the above foliar feeding methods.

Foliar sprays can be more effective than soil applications in correcting nutritional deficiencies and treating stress related problems under some conditions. For best results, spray early in the morning and when the air temperature is below 85° F.

TRANSPLANTING TIPS

Water the seedling, plant, shrub or tree with a liquid fertilizer high in phosphorous and potassium the day before transplanting to prevent shock.

Pop the seedling or plant out of its old container with as much root ball as possible. Cut through the mass of tangled roots and remove any excess amount if root bound.

Keep the root ball damp at all times to prevent roots from drying out while out of the ground. Leave the plant out of the soil for the shortest time possible.

Keep the plant stem base level with the new soil, 1 or 2 inches below the lip of the new container. Tamp the soil down gently and firmly to remove air pockets, and water in well.

Transplant outdoor plants on a cloudy day or in the evening, and keep in partial shade for a few days. Gradually expose seedlings to chilly temperatures before the final transplant into soil or another container.

Always evaluate the soil **before** transplanting. If the soil is hard clay or sandy, add compost into the backfill soil, and fertilize with a transplant mix to help the plant re-establish faster.

PET TIPS

Dogs are frequently attracted to organic fertilizers, especially if they contain fish. Try a top dressing of cayenne powder where you're fertilizing. It may deter the dog. Be sure not to rub your eyes after applying.

Protecting Your Plants

Understanding nutritional problems early

ELEMENTS FOR OPTIMUM GROWTH

There are 19 beneficial elements that contribute to healthy plant growth. Three of these essential elements, oxygen, hydrogen and carbon, are provided by air and water, while the rest are absorbed by plants through the soil.

Boron (B) stimulates cell division, flower formation and pollination.

Calcium (Ca) raises soil pH, promotes root hair formation and early growth.

Chlorine (Cl) is needed for photosynthesis, stimulates root growth and aids water regulation.

Cobalt (Co) improves growth, water regulation and photosynthesis.

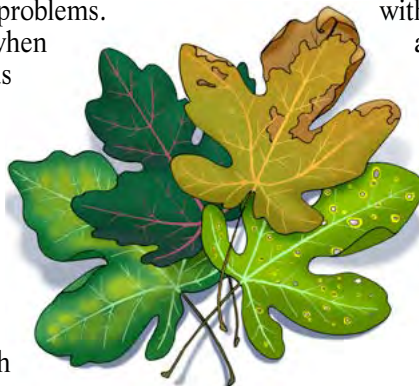
Copper (Cu) stimulates stem development and pigment formation.

Iron (Fe) stimulates the formation of chlorophyll and helps oxidize sugar needed for energy. It is also necessary for legume nitrogen fixation.

Magnesium (Mg) aids in chlorophyll formation and energy metabolism. It increases oil production in flax and soybeans, and helps regulate uptake of other elements.

Normally, when plants are grown in fertile soil, fortified with compost and organic fertilizers, or fresh potting soil, they do not suffer from nutritional problems.

Disorders arise when a plant variety has particular needs or when too little or too much fertilizer is used. A fertilizer overdose can be remedied by flushing with water. Plants with specific needs, like acidic soil or a particular nutrient deficiency, require the addition of amendments or fertilizer.



IMBALANCE OF PRIMARY NUTRIENTS

Excess Nitrogen: Too much nitrogen produces dark green foliage, few or no flowers or fruits and burnt leaf tips. Too little nitrogen produces light green to yellow leaves and slow growth, especially in the lower leaves of older plants.

Excess Phosphorous: An excess of phosphorous is rare, yet when it does occur, symptoms are similar to an excess of nitrogen. A phosphorous deficiency is revealed by deep green, red or purple leaves, few blooms and fruits, yellowing bottom leaves and stunted growth.

Excess Potassium: Potassium toxicity will create nitrogen, phosphorous and trace mineral imbalances. Potassium deficiency produces very tall plants with weak stems as well as leaf tips and edges turning yellow, then brown later.

OTHER PROBLEMS

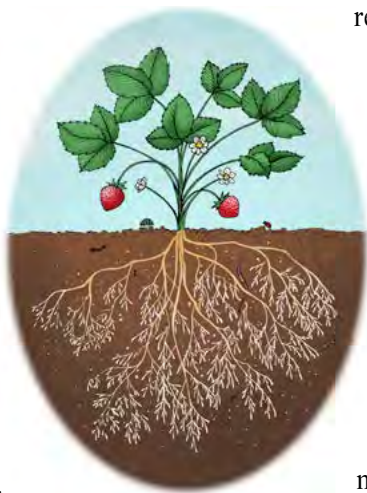
Excess of Secondary Nutrients: Too much calcium and magnesium increase potassium problems, and can also inhibit reciprocal uptake of each other. Too little calcium will cause young leaf tips to die back, blossom end rot on tomato fruits, short roots, stunted growth and rotten plant centers. Magnesium deficiencies show up in leaf tips turning brown and curling upwards in a hook shape

pH Problems: Plants may also reveal problems when the soil pH is incorrect. Soil pH measures soil acidity or alkalinity on a scale of 1 to 14. Most plants prefer a neutral soil range of pH 6.5 to 7. However, acid lovers like blueberries enjoy a pH of 4.5-5.5. Soil pH regulates nutrient uptake in plants. **An unbalanced pH will lock up vital nutrients in the soil even if they are in adequate supply.** To raise the pH, add oyster shell or lime. An abundance of organic matter in the soil will help plants accept a wider range of pH.

Mycorrhizae get to the root of great gardens

“**Myco**”-“**rrhizae**” literally means “fungus”-“root” and defines the mutually beneficial relationship between plants and these specialized fungi. The fungi colonize plant roots and extend microscopic filaments into the surrounding soil profile, greatly enhancing the effective surface area of the root system. The mycorrhizal hyphae can access nutrients and water unavailable to the host plant’s roots because they explore a much larger volume of soil.

More than 90 percent of plant species form a **symbiotic relationship** with these types of beneficial soil fungi. Over 70 percent of plant species, including most common vegetables, flowers, fruits, grasses and agricultural crops, form endomycorrhizal



relationships. **Endomycorrhizae** penetrate into plant roots, delivering nutrients directly.

A smaller percentage of species, including the most popular conifers and oaks, form ectomycorrhizal relationships.

Ectomycorrhizae live in close proximity to, but outside, plant roots.

The mycorrhizal products we offer contain the most diverse and effective strains of mycorrhizal fungi available anywhere. Several of our fertilizer blends also contain mycorrhizae.

Apply all these products so they come into direct contact with existing or emerging plant roots. By utilizing a robust mix of beneficial soil organisms, plants can survive and thrive the way they naturally evolved.

Control pests ecologically

Simply growing plants in a healthy garden with soil empowered by compost and organic fertilizers and amendments greatly reduces attacks by pests and diseases.

Growing plants selected for your locale, including cover crops and companion plants that repel or trap pests, growing flowers and flowering

vegetables that attract and support beneficial insects and using sprays and powders made from natural materials provides further protection from problems.

Remember, artificial pest control products can effect more than just what's bothering your plants, including the soil and plant itself.

ELEMENTS FOR OPTIMUM GROWTH - continued

Molybdenum (Mo) is needed for nitrogen fixation and nitrogen use. It stimulates plant growth and vigor much like nitrogen.

Nitrogen (N) is necessary for chlorophyll and genetic material (DNA & RNA) formation, and stimulates green, leafy growth.

Phosphorous (P) is necessary for genetic material (DNA & RNA) formation, and stimulates fruit, flower, root production and early season growth, and increases disease resistance.

Potassium (K) produces strong, sturdy plants with thick cell walls, increases disease resistance and stimulates fruit, seed and root production.

Silicon (Si) increases seed quantity and strengthens cell walls.

Sodium (Na) increases sugar content and resistance to drought (in some crops).

Sulfur (S) aids in formation of certain oil compounds that create specific odors in some plants such as onions, garlic, mustard, etc. It increases oil production in flax and soybeans.

Manganese (Mn) is necessary for the formation of chlorophyll.

Zinc (Zn) stimulates stem growth and flower bud formation.

Lawn Care

Growing Healthy Grass



MOWING

If you choose to do only one maintenance task, you should mow, but mow often. Weekly mowing from spring through fall will produce good quality turf. Turf quality drops dramatically when the height is maintained over 2 inches. Bentgrasses or annual bluegrass prefer a shorter mowing, down to 1/2 to 1 inch. Perennial rye grass, fescues, and Kentucky Bluegrass optimum height is from 1 1/2 to 2 inches. An occasional mowing during winter might be necessary to keep the turf in good shape before the spring growth spurt.

AERATING

Aerate all lawns once or twice a year to allow air, water, fertilizer and roots to penetrate deeper in to the soil. After aerating, add fertilizer, spray with compost tea and top dress with 1/2 inch of fine compost.

PLANTING A NEW YARD

If considering planting a new lawn, it is optimal to have 6 to 8 weeks of good growing weather after seeding. Grass seeds germinate best when the air temperature is between 60 °F and 85 °F. In the Northwest, mid-August to mid-September presents a near perfect environment, from mid-April to mid-June. *Check with your region's extension service for the optimal season in your area.*

Soil Preparation: If you need to bring in additional soil, lightly rototill your existing soil first. Then, spread the new soil and work it in. You will want to rototill in order to loosen the first 6 to 8 inches of soil, as well as allow the soil to be graded. A pebble-like texture is ideal. If it is tilled too fine, like powder, it can damage the soil structure and reduce infiltration. It is best to till the soil when it is relatively

dry, but not dusty and crumbly.

After tilling the area, add your topsoil, compost, lime and other soil amendments, as needed. Consider using Biochar to help refresh the soil by enhancing aeration, nutrient and water availability, and improved soil texture. Spread amendments uniformly over the entire surface and till again to achieve an even mixture.

Grading your ground is an important step to help level out your lawn. You want to scratch down any high spots and fill in low spots. Using a larger lightweight grading rake (which can be rented), rather than a small garden rake, can make the job much easier. Creating a level, gradual slope away from buildings and flush to the concrete can help prevent drainage problems.

Seeding: When seeding, the objective is to spread seed over the area so that

your grass will germinate and grow uniformly. If you do not have access to a calibrated seed spreader, then divide your grass seed in half. Spread the first half of seed over the entire surface of the lawn while walking back and forth.

Next, spread the second half of seed while walking back and forth perpendicularly to the first orientation. For amount of coverage, refer to the requirements for the variety of grass seed you choose.

Fertilizing: Apply fertilizer just before or after seeding. For establishing your lawn, you can use fertilizer relatively high in nitrogen and phosphorus, such as **Down To Earth's™ Bio-Turf 8-3-5** that has extra potassium for reducing seasonal stresses related to temperature and watering changes.

MAINTAINING HEALTHY GRASS

A typical home lawn gets more complex each year. In the first year, it contains mostly grass species found in the seed mix, but over time, it evolves to 3 or 4 species that have adapted to your climate. This new mix is referred to as a “climax lawn” and is a natural process as your lawn adapts to its environment. By concentrating on mowing, irrigating, fertilizing, dethatching and aeration, you can maintain a healthy and attractive lawn.

Fertilizing: You should fertilize at least twice a year in order to maintain a relatively healthy lawn. If you only fertilize twice, fertilize in April/May and again in September. If you fertilize more than twice, do so in April/May, July and October. Depending on soil test values, you

might use our **Bio-Turf 8-3-5** to add additional phosphorus and potassium.

Add **Oyster Shell** calcium lime once a year and dolomite lime every 3 to 4 years to supply calcium and keep soil pH neutral in areas with naturally acidic soils.

Dethatching: Turf problems are often the result of excess thatch. Thatch is a tightly intermingled layer of grass stems and roots, both living and dead, that form between the soil surface and the green foliage, a result of inadequate watering and lack of organic material. Grass roots will grow into thatch rather than the soil.

Dethatching can be done with a vertical mower (also called a verticutter or dethatcher), or you can use a steel rake to rip up the thatch. The optimum time to dethatch is when the turf is starting vigorous spring growth, usually around Mid-April. Turf dethatched in the spring recovers faster, and is less prone to weed encroachment than when dethatched at other times of the year.

Moss: As much as 75% of moss can be removed by dethatching. Cryptocidal or moss-killing soaps are safe to use on sidewalks, roofs and other structures. Always follow manufacturer's instructions for application of these products.

Using **Oyster Shell** in the soil can reduce acidity and help to discourage the growth of moss. Moss growth typically starts with fall rains and reaches a peak in early spring. Moss is generally associated with thin turf, low fertility, high acidity, shade and wetness. It is impossible to control until these problems are corrected.

WATERING

Grow grass in a sunny location with good drainage. From June through August, lawns need to be watered deeply once a week for proper hydration. If a dense, vigorous lawn is not your priority, watering deeply every two weeks is sufficient.

Instead of following a predetermined watering schedule, it is better to observe your turf and check the soil moisture regularly.

If it is dark green and doesn't spring back after stepping, it needs watering. Check the moisture by inserting a 6" screwdriver into the turf. If it takes some effort to push it in, it's time to water.

If it penetrates easily, hold off on watering. Typically, lawns in the Northwest need 3 to 5 inches of water in July and August, 2-4 inches in June and September, and even less in May and October. *Check for your region's optimal water levels.*

If you have clay soil, water more frequently with shorter irrigations to avoid runoff.

Tomatoes

Growing everyone's favorite garden vegetable

TOMATO SHAPES AND USES:

Beefsteak: Large, irregularly shaped, with dense flesh.

Slicer: Round, main crop tomatoes, also called globe; great for sauces and eating fresh.

Cherry: Small cherry-sized fruits that are great for fresh eating or for drying.

Grape: Small oval-shaped fruits that are smaller than cherry tomatoes with firmer, thicker skin.

Saucing/paste: Comes in many shapes and sizes, and the low gel content makes them great for pastes. Commonly, Roma tomatoes are used for this purpose.

COMMON PESTS

Flea Beetles: They feed on tomato foliage early in the season. Plant hardened, larger, sturdier transplants in warm soil as prevention. Cultivate your soil in the fall or early spring to disturb the overwintering adults. Cover seedlings with floating row covers. If absolutely necessary, you can spray with pyrethrum for control.

Tomato Hornworms: Can be controlled by hand-picking them off the plants, or applying the selective bacteria *Bacillus thuringiensis* var. *kurstzki* (Bt).

Snails and Slugs: These ubiquitous garden gastropods will feast on fruits too close to the ground. Trellis your plants to avoid losses.

TYPES OF TOMATOES

Determinate- Bush Habit. Fruit ripens all at once, making this a preferred tomato for food preservers who dry or can large quantities. Best choice for containers.

Indeterminate- Vine Habit. Indeterminate tomato plants continue producing fruit until the plant is killed by frost. This type is preferred by home growers and local market growers who want ripe fruit that continues through the season. Requires trellising.

OPEN-POLLINATED VS. HYBRIDS:

Open-Pollinated Varieties: An open-pollinated variety has no restriction on the flow of pollen between individual plants, eventually creating more genetically diverse species with variation that allows plants to adapt to local climate and growing conditions. If pollinated within the same variety they will generally breed true to type year after year, so saving the seed of an open-pollinated plant will result in plants of the same variety. *Heirloom tomatoes are all open-pollinated, but not all open-pollinated varieties are heirlooms.* Heirlooms, aptly named,

are varieties passed down through generations (usually 50 years or more) and are selected by farmers for specific characteristics. The fruit size, yield and harvest times can vary and are less predictable than in hybrid varieties.

Hybrid Varieties: Hybrid tomatoes occur when two plants of different varieties are intentionally cross-pollinated by growers to produce a resulting tomato that has the best traits of each parent variety. These varieties are created with plants of the same species or between very closely related species with reproductive compatibility. In this case, pollination is carefully controlled, ensuring

that you are getting the characteristics that you want between the two. The process takes years, and the result is usually a more disease resistant tomato, with larger size, yield, etc.

Hybrids aren't a good option for seed saving, as the seeds are genetically unstable and offspring will be less vigorous and won't breed true to type. If you grow hybrids, you must purchase new seed every year. However, hybrids can be stabilized over many years through open-pollination with other plants, selection and seed saving.



PLANTING TOMATOES

Site Preparation: Tomatoes are a warm weather crop; they require a location with full sun (at least 6 hours/day) and slightly acidic, well-draining soil rich in phosphorus and calcium. *A pH of 6.2-6.8 is best.*

Two weeks before planting seedlings, mix a layer of aged compost or fertilizer into the soil. Adding a handful or two of **Bone Meal 3-15-0** into the soil will ensure slow release of phosphorus and calcium, which can help prevent calcium deficiency later on (see blossom end rot under tomato problems). Amending your soil with ground **Oyster Shell** or Lime will also help to avoid blossom end rot. **Avoid high-nitrogen fertilizers, which will give you beautiful, leafy tomato plants but fewer blooms and fruits.**

Seed: Start seeds indoors 6-8 weeks before the average last spring frost date. Keep seedlings warm and well ventilated during this time.

Transplanting: Harden off your transplants in a sheltered location outdoors, and bring them in for the night for at least 7-10 days before you want to plant them. **Tomatoes have a narrow temperature range for setting fruit.** Ideal temperature is crucial to avoid problems. Plant transplants after danger of frost has passed when night temperatures are consistently 50-55 °F. You'll want soil temperature to be at least 60 °F. They need warm (not hot) days of 70-80 °F. If there is danger of late frost, protect plants with cloches. Early cold damage can cause blossoms to drop and prevent fruit from setting, reducing production for the entire season. Well balanced fertilizer can go a long way towards growing healthy tomatoes.

Blend our **All Purpose Mix 4-6-2** into the soil around the plant when planting. If growth seems sluggish, use **Fish Powder 12-1-1** for a boost.

Support: This can be done by either a traditional tomato cage, or any sort of trellising that can hold up the weight of a fruit laden tomato limb. Trellising keeps your precious fruits off the ground, preventing rot, keeping the plant dry, ripening more evenly, and keeps them away from slugs and snails.

Small Container Gardening:

Tomatoes can be excellent in pots if you've got a small space to work with. *Minimum pot size is 7 gallons for a tomato plant.* Make sure you have lots of sun, a rich potting mix, and always water deeply at the roots.

Watering: There are two basic rules to keep in mind regarding watering:

1. *Never water plants overhead.* Moisture on the plant can lead to diseases and fruit cracking.
2. *Water the surface evenly and deeply.* Mulches at the base of the plant help immensely with keeping soil moisture more consistent, and as a bonus they help keep down weeds.

Harvesting: When your fruit reaches peak ripeness, cut or gently twist the fruit off while supporting the vine to avoid any damage to the plant. At the first sign of a heavy frost, harvest all your tomatoes at once, including the green ones. Mature green tomatoes can be ripened in a dark, warm area (60-75 °F). Placing green tomatoes in a bag with a banana will help trap ethylene gas and hasten the ripening process. Any green tomatoes left over can be battered and fried or be made into end of the year pickles!

DISEASES AND PROBLEMS

Catfacing: Puckering, scarring, and holes near the blossom end are caused by cold temperatures when flower buds are forming. Avoid planting too early to prevent this.

Cracking: Radial cracking (from stem to blossom end) is caused by high temperatures and bright light, or concentric (around fruit) when rain follows a dry spell.

Sunscald: Too much sunlight causes a blistered, shiny light area on the sun side of the fruit due to losing too many leaves through over pruning or disease.

Leaf Roll: Edges of leaves curl to form cups that are firm and leathery to the touch. Make sure that your soil is well drained and aerated to prevent this condition.

Verticillium & Fusarium Wilt: Causes leaves to curl up, turn yellow, and drop off. Dispose of infected plants in sealed containers; throw away with household garbage.

Blight: Dark sunken areas form on leaves as first fruits start to mature (Early). Black, irregular water-soaked patches on leaves, dark spots on fruit (Late). Destroy or dispose affected plants. The best defense is to plant disease resistant cultivars.

Blossom End Rot: Fruit forms water-soaked dark spot on the blossom end of the tomato that can eventually take over half the affected fruit. This is mostly caused by calcium deficiency or uneven soil moisture. Blossom end rot can also be caused by damaged feeder roots from careless transplanting. When planting, use mulch to help with moisture; handle seedlings gently.

Strawberries

Growing the garden's sweet treat

KINDS OF STRAWBERRIES

The two main types include June bearing and ever bearing.

June bearers produce one high yielding crop per year, early in the summer. This one large crop makes them ideal for canning and freezing. The second main type are the ever bearing varieties.

Ever bearers basically produce two crops each year; the first in late June/early July, and the second in the early fall. Day neutrals are considered ever bearers, and they will produce early July through the fall. Ever bearers are ideal for summer-long snacking.

KEEP IN MIND

- Strawberries are easy to grow, and they are high in Vitamin C and antioxidants.
- Strawberries are shallow rooted, and like plenty of water, especially their first year.
- Cover with floating row cover if the temperature dips below freezing to avoid any flower damage.
- Keep strawberries weeded.
- Gather more strawberry growing tips and information from your favorite gardening books, and online.

SOIL PREPARATION & PLANTING

Strawberries will be happiest and sweetest in a full sun location with fertile, well draining soil. Adding compost to the area before planting is recommended to encourage good drainage and moisture retention and to boost the available nutrients. For good drainage, we suggest planting in a raised bed to help the plants stay free of any root rot problems (10-12 inches high is great).

Space the plants 12-18 inches apart. Plant with the roots straight down and the middle of the crown set level with the top of the soil (avoid covering the crown).

Top dress with a natural fertilizer two weeks after planting to help the roots get established (**Down To Earth™ Rose & Flower 4-8-8** or **Acid Mix 4-3-6** is perfect for this). Mulching your strawberries is an effective practice to help with weed control and moisture retention. Many weeds will compete for nutrients and water, thus making it a good idea to keep your strawberry area weed free.

JUNE BEARING - CARE

With June bearers, it is important to remove all flowers during their first year in the ground to allow for

crucial root development. You will be rewarded the second year with a much healthier and more abundant crop. To maintain your June bearers (this does not apply to ever bearers) after the crop has been harvested, it is important to cut the foliage back 2 inches above the crown and remove all the extra debris. This is called “renovation” and it will help with next year’s yield as well as disease resistance. In mid to late July, trim off all but 2-3 runners from each mother plant. A helpful rule is to remove all runners that have not rooted by the 1st of September. Fertilize with a balanced natural fertilizer such as **Down To Earth™ Rose and Flower 4-8-4** or **Acid Mix 4-3-6** in late summer to encourage fall plant growth.

EVER BEARING - CARE

With ever bearing varieties, it is important to remove only the first flush of flowers, allowing for root establishment. After July 1, you can leave all new flowers to mature into fruit. As with June-bearers, it is a good idea to trim off all but 2-3 runners in mid- to late-July. Again, it is a helpful rule to trim off any runners that have not rooted by September 1. Fertilize ever bearers in small amounts throughout the growing season with a balanced organic fertilizer, such as **Down To Earth™ Acid Mix 4-3-6**.



Potatoes

Growing America's classic side dish

HOW TO START

You can use any **untreated** potato to start or seed a new potato plant. Plant potatoes, known as seed potatoes, whole if they are small or cut into egg-size chunks if they are large. Before you plant chunks, place the fresh-cut tubers in a dry, shady spot for a few days to allow them to form calluses over the cuts. Uncut seed potatoes will give slightly greater yields than chunks. Potatoes can be pre-sprouted by putting them in a cool, dry, frost-free place for a few days before planting. If you want fewer, bigger potatoes at harvest, then break off all but one or two of these sprouts. For more, smaller potatoes, do not break off any sprouts.

PLANTING TIPS

Rows or hills: In row gardens, plant tubers or chunks 4 inches deep and 18 inches apart in rows 2 feet apart. If you prefer to plant in hills, mound soil as you would for squash, and plant three or four seed potatoes in each hill. Generally, the more space you give the plants to develop, the higher the yield will be. The soil should be well drained and reasonably fertile. For better benefits, always till well rotted manure, compost or fertilizer, like **Biofish 7-7-2** or **Acid Mix 4-3-6** beneath the tubers before planting.

MAINTENANCE

When potato plants reach 4-6 inches tall, mound soil up around each plant, leaving about half the top unburied. Do this in the morning when plants are standing up straight (they sometimes sprawl during the day). Keep hilling plants up until about 8-12 inches of soil covers the seeds. Then let the plants mature.

HARVESTING

When plants flower, you can harvest a few new potatoes from around the edge of each plant. New potatoes are not just small potatoes. They are immature spuds whose sugar has not yet converted to starch, as it will in fully developed tubers. That is why new potatoes are deliciously sweet and why they are best when consumed immediately after harvest.

After the tops of the plants die down, push a potato fork (a spading fork or pitchfork will do) into the soil around the perimeter of each plant. Rock it back and forth to break small roots connecting the potatoes, then leave the potato patch alone for a week to give the skins a chance to harden up. This way the spuds will not bruise when you dig them up and they will keep longer.

THE MORE YOU KNOW

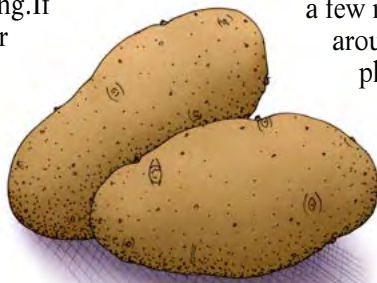
Each potato tuber is a complete package, containing enough water and nutrients to get it off to a good start. It just needs well-drained soil and full sun. 1-2 inches of water per month, between planting and harvest, is enough to produce a crop.

PEST CONTROL

Flea beetles and wire worms can be a problem. Beneficial Nematodes applied twice in spring will give good results. Be sure to follow instructions. Early morning sprays of insecticidal soap will control adult flea beetles. Gophers can be a problem in some areas. In the worst circumstances, you may have to line the bottom and sides of your planting bed with hardware cloth, or even plant in barrels. **You can avoid most disease problems by planting only certified seed potatoes.**

YIELD

In general, a pound of seed potatoes will produce 15-25 pounds of potatoes at harvest. If you plant chunks, then each start will produce around 3 pounds of potatoes.





it's ALIIIIIVE!

Tending to the Life in Your Garden Soil

When we think of soil, what might come to mind is dirt, ground up rocks and rotten leaves, but the ground beneath our feet is also teeming with life. These critters are essential to the organic gardener (and life as we know it) because they break down dead plants, animals and minerals into particles that plants feed on. Follow these tips to take care of the microorganisms in your soil and they will take care of the plants in your garden!

Chemical vs. Organic Fertilizers

Chemical Fertilizers



Chemical fertilizers have already undergone processes that convert raw materials into nutrients in plant-available forms. The problem is that this food only benefits the plant, essentially starving the beneficial organisms in the soil. In addition, chemical fertilizers increase the acidity of the soil and leave behind deposits of salts. The repeated use of chemical fertilizers eventually creates "dead" soils and plants that are entirely dependent on man-made fertilizers.

Organic Fertilizers



Adding organic fertilizers, compost and green manures to your garden provides food for a great variety of soil organisms. The waste that they produce becomes food for your plants. Adding organic matter to your garden soil also improves aeration, creating the light, fluffy beds that are ideal for root penetration and water drainage.

Cast of Critters

Earthworms:

Eat plant matter and make worm castings, aerate soil

Sow-bugs:

Scavengers and shredders of organic materials

Mites:

Can be predators or herbivores

Springtails:

Eat fungi, pollen, algae and decaying matter

Nematodes:

Beneficial nematodes eat fungi, bacteria and protozoa

Fungi:

Some form a mutually beneficial relationship with plant roots and greatly extend the plant's root zone

Protozoa:

Consume bacteria and release nitrogen

Waterbears:

Eat algae and microscopic organisms, also very cute

Bacteria:

Some take nitrogen from the air and feed it directly to the plant, others break down minerals

Dos and Don'ts

Do: Mulch. Not only does mulching suppress weeds, which minimizes soil disturbances, it also prevents water loss through evaporation and reduces temperature fluctuations - creating an ideal environment for beneficial critters.



Don't: Over-work the soil.

Too much tilling can destroy the delicate soil structure, kill earthworms and collapse their tunnels, and damage mycorrhizal fungi. After the initial double-digging of the garden bed, till only when necessary. Some amendments will need to be mixed in to come into contact with soil microbes.



Don't: Step on garden beds. Beneficial insects, and fungi, as well as plant roots, water and oxygen can not move easily through compacted soils. Keep this in mind when designing your garden beds, creating easily navigable paths that are wide enough to work in.



Do: Rotate crops. Each type of plant has different nutritional needs, and growing one crop in the same spot year after year can deplete the soil of essential nutrients, as well as cause a build up of pathogenic organisms. Varying the type of plants in each bed from year to year will benefit both the flora and fauna of your garden.



Don't: Use chemical pesticides, fungicides and insecticides.

These can kill the beneficial insects, microbes and fungi on which a healthy plant depends. Instead, focus on prevention of pests and diseases.



Do: Top-dress. When adding compost to your garden bed, lay it on top of the soil, rather than digging it in. Weather and insect activity will gradually mix it into the soil.



Do: Fertilize seasonally. Soil organisms are most active when the soil is warm and moist. Remember that it takes time for some organic fertilizers to become available to plants, and they break down at different rates. Research your soil amendments to discover the best time of year to fertilize.



Don't: Over-water. A plant's roots, and the beneficial fungi that grow on them, need oxygen to grow. Heavy, waterlogged soils inhibit oxygen absorption. Water deeply and less frequently, testing the soil for dryness before watering again.

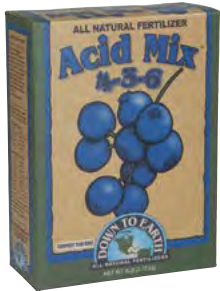


Do: Use our organic fertilizers. Feed your soil critters the best diet and they will reward your plants with the best nutrients. Down To Earth fertilizer blends contain ingredients from a wide variety of sources, which are broken down by soil microbes at differing rates. One application will meet your plants' nutritional needs over a longer period of time than chemical fertilizers, or other organic fertilizers with less diverse ingredients.



Fertilizer Blends

Down To Earth™ Fertilizer Blends save gardeners time and labor by offering a wide variety of single ingredients in pre-mixed proportions for more general needs around the home and garden. A great advantage of organic, multipurpose blends is that they can last in the soil for several months, continuing to fertilize plants and enrich the soil long after initial application.



Acid Mix 4-3-6

A fertilizer blended specially for acid soil loving plants like rhododendrons, azaleas, hydrangeas, evergreen trees and shrubs, blueberries, raspberries and other plants that thrive in a low pH soil. To encourage lush flowers and fruit, apply Acid Mix in early spring for vegetative growth and again when blooms appear. Late fall applications promote healthy root growth and boost resistance to extreme winter temperatures.

Ingredients: Cottonseed Meal, Langbeinite, Fish Bone Meal, Rock Phosphate, Humates and Kelp Meal



All Purpose Mix 4-6-2

A gentle, non-burning fertilizer perfect for vegetables, herbs, flowers and container plants, our All Purpose Mix is also ideal for all types of transplants. Formulated with top quality organic ingredients and designed to deliver a steady supply of essential nutrients to your plants while enhancing soil fertility and microbial activity naturally.

Ingredients: Fish Bone Meal, Blood Meal, Feather Meal, Rock Phosphate, Langbeinite, Greensand, Humates and Kelp Meal



Bio-Fish 7-7-2

A nutrient rich fertilizer ideal for heavy feeders like corn, cole crops and tomatoes, Bio-Fish is loaded with the finest marine based ingredients to improve your soil while nourishing your outdoor plants. An excellent source of Nitrogen and Phosphorus, Bio-Fish can be used throughout the growing season to promote vigorous growth, beautiful blooms and plentiful fruit.

Ingredients: Fish Bone Meal, Fish Meal, Feather Meal, Sulfate of Potash, Alfalfa Meal, Humates and Kelp Meal



Bio-Live 5-4-2

A rich, organic fertilizer mix infused with a generous amount of beneficial bacteria and Mycorrhizal fungi to stimulate rooting, vigor and optimal plant development. Bio-Live encourages rapid colonization of soil and soilless mixes and may be combined with other DTE fertilizers to further improve plant growth and yields.

Ingredients: Fish Bone Meal, Fish Meal, Alfalfa Meal, Crab Meal, Shrimp Meal, Langbeinite, Humates, Kelp Meal, Mycorrhizal Fungi and Beneficial Bacteria.





Bio-Turf 8-3-5

Bio-Turf is an entirely natural granular lawn fertilizer designed to provide a slow, steady release of nutrients and encourage deep root development to help reduce watering requirements. Bio-Turf's Nitrogen rich formula boosts early season growth while its extra Potassium reduces seasonal stress due to temperature change and drought. Bio-Turf is also ideal for garden vegetables like corn, tomatoes and leafy greens.

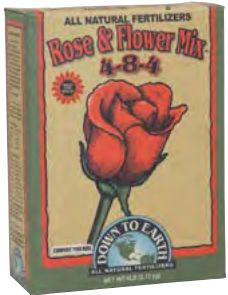
Ingredients: Feather Meal, Fish Meal, Blood Meal, Meat Meal, Bone Meal and Langbeinite



Citrus Mix 6-3-3

Designed to nourish citrus trees in home orchards and containers, our Citrus Mix is formulated with primary and secondary plant nutrients plus selected micronutrients that promote lush new growth, abundant green foliage, fragrant blossoms and bountiful fruit. It may also be used to feed other fruit trees, vines and ornamentals for equally enjoyable results.

Ingredients: Feather Meal, Fish Bone Meal, Alfalfa Meal, Greensand, Langbeinite, Basalt, Sulfate of Potash, Zinc Sulfate and Kelp Meal.



Rose & Flower Mix 4-8-4

A special fertilizer blend that provides ample nitrogen for vigorous growth, extra Phosphorous for beautiful blooms and Potassium and trace elements for healthy plant stock. Our Rose & Flower Mix supplies your favorite bulbs, annuals and perennials with the nutrients needed for a long, healthy season of sensational flowering.

Ingredients: Fish Bone Meal, Blood Meal, Langbeinite, Alfalfa Meal, Seabird Guano, Rock Phosphate, Humates and Kelp Meal



Starter Mix 3-3-3

Our starter and transplant formula is the perfect way to get your delicate young starts and new seedlings in the ground and ready to thrive. In addition to essential primary and secondary plant nutrients we've added a diverse mix of beneficial soil microorganisms to ensure successful planting, expansive root development and vigorous early growth.

Ingredients: Alfalfa Meal, Fish Bone Meal, Bat Guano, Feather Meal, Langbeinite, Oyster Shell, Greensand, Volcanic Ash, Kelp Meal and Mycorrhizal Fungi.



Tree & Shrub 4-2-4

Formulated for transplanting bare root trees, ball and burlap shrubs and container plants, our Tree & Shrub Mix has a generous amount of mycorrhizal Root Growth Enhancer blended in to promote extensive root development and to help protect against a variety of plant stresses including drought and environmental extremes.

Ingredients: Fish Bone Meal, Soybean Meal, Langbeinite, Feather Meal, Rock Phosphate, Basalt, Kelp Meal, Humates and Mycorrhizal Fungi.



Vegan Mix 3-2-2

The indispensable all purpose fertilizer blended specially for vegan gardeners. Free of any animal products or by-products, Vegan Mix is formulated with plant derived essential nutrients and natural mineral elements plus humic acids. Its slow release formula is designed to continually nourish your vegetables, flowers and herbs while stimulating and building soil health.

Ingredients: Soybean Meal, Canola Meal, Rock Phosphate, Langbeinite, Greensand, Humates and Kelp Meal.

Single Ingredient Fertilizers

Down To Earth™ Single Ingredient Fertilizers are used for specific needs in certain stages of a plant's development. Use a high-nitrogen source to give heavy-feeding plants an additional boost early in the season, or use a high-phosphorus fertilizer to promote big, beautiful blooms on your flowering plants. Perfectly customizable, mix and match Single Ingredient Fertilizers on their own or with other DTE™ products to create specialized NPK recipes to control plant nutrition at every stage of the growth cycle.



Alfalfa Meal 2.5-0.5-2.5

An excellent soil conditioner, Alfalfa Meal is a rich source of trace elements and natural growth stimulants. Recommended for all flowering shrubs and especially roses, Alfalfa Meal accelerates growth and promotes larger, more plentiful blooms. It is also useful as a compost bio-activator due to its high organic matter content and ideal Carbon-to-Nitrogen ratio.



AZOMITE™ Granulated

The "A to Z of Minerals Including Trace Elements" is a mined volcanic mineral product that has been granulated for easy application. An excellent way to re-mineralize depleted garden soils, composts or potting mediums, AZOMITE is proven to increase crop yield, quality and overall plant growth.



AZOMITE™ SR Powder

Slow-Release grade of AZOMITE volcanic minerals with particle sizes ranging from 4 to 200 mesh. Ideal for blending with other fertilizer materials and amendments as a trace mineral resource to help meet complete plant nutritional needs. An economical way to fortify and re-mineralize soils, composts and potting mediums.



Bat Guano 0-7-0

An excellent source of Phosphorus and Calcium naturally mined from ancient fossilized deposits, our Bat Guano 0-7-0 promotes exceptional flower and fruit development in all types of plants, trees and ornamentals while encouraging strong root growth and plant hardiness. Can be mixed into soils, applied as a side dress or prepared as a liquid for foliar sprays or hydroponics.





Bat Guano 9-3-1

The undisputed champion of organic fertilizers, Bat Guano is rich in readily available Nitrogen, Phosphorus and Micronutrients, and provides essential plant nutrition for vigorous vegetative growth and early fruit and flower development. Bat Guano is fast acting and highly effective when mixed into potting mediums, applied as a side dress or steeped to make a potent guano tea or foliar spray.



Blood Meal 12-0-0

A high Nitrogen source, our Blood Meal is guaranteed to promote rapid, green growth. A wonderful fertilizer for heavy feeders like corn, spinach, salad greens and garlic in the early spring, it also helps compost piles heat up and break down fast.



Bone Meal 3-15-0

A wonderful source of Phosphorus and Calcium for flowering plants, trees and ornamentals, Bone Meal is recognized as the ideal organic fertilizer when planting bulbs to promote strong root development and enhance early season growth. One of the indispensable soil amendments all organic gardeners should have on hand.



Cottonseed Meal 6-2-1

We select only the finest feed grade Cottonseed Meal, which has little or no pesticide residue, and contains no animal by-products. Somewhat acidic in nature, Cottonseed Meal is excellent for plants that need a low pH and is perfect for flowering acidic shrubs, berries and trees when used as a slow-release fertilizer.



Crab Meal 4-3-0

Crab Meal is a superb source of organic nutrients for vegetable gardens and flower beds and is wonderful for building soil tilth. Crab Meal enhances beneficial soil microorganism populations due to its rich chitin content and also makes an incredible compost bio-activator.



Feather Meal 12-0-0

Feather Meal is a great source of slow release Nitrogen that is perfect for heavy feeders like corn, cole crops and leafy green vegetables. Incorporate into your soil before Spring plantings for best results.





Fish Bone Meal 3-16-0

Fish Bone Meal is a marine based alternative to traditional steamed Bone Meal and is wonderful for all flowering plants, trees and shrubs. A great source of Phosphorus and Calcium, Fish Bone Meal also contains a small amount of Nitrogen and is an ideal fertilizer for new garden beds, perennials and bulbs.



Fish Meal 8-6-0

Fish Meal is an excellent source of Nitrogen and Phosphorus and is recommended for vegetable gardens, flower beds and all types of outdoor plants, trees and shrubs. Fish Meal enhances soil microbial life, promotes vigorous root development and provides an early season boost for all of your plants.



Granular Humic Acids

A highly concentrated source of humic acids ideal for use on fields, turf and vegetable gardens. Derived from the ancient remains of decomposed organic plant materials, humic acids enhance nutrient uptake and stimulate soil microbial life. Naturally occurring, unaltered oxidized lignite containing 70% total humic and fulvic acids, crushed, screened and graded to a particle size of 1-3 mm.



Kelp Meal 1-0.1-2

Down To Earth™ Kelp Meal is pure *Ascophyllum nodosum* seaweed from the clean, cold waters of the North Atlantic Ocean. Hand-harvested, carefully dried and finely milled, our Kelp Meal is a rich natural source of Potash and is ideal for early Spring or Fall application.



Langbeinite 0-0-22

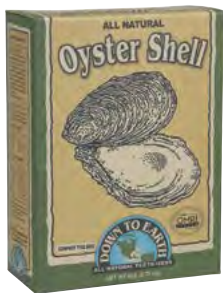
A unique 3-in-1 combination of Potassium, Magnesium and Sulfur, Langbeinite is a naturally occurring source of these vital plant nutrients. Potassium is essential for high quality fruit, Magnesium is required for the synthesis of chlorophyll and Sulfur is needed for enzyme activation. Contains 22% K₂O, 11% Mg and 22% S.



Neem Seed Meal

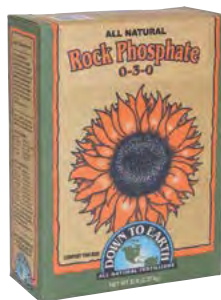
Neem Seed Meal is produced during the extraction of oil from the seed of the Indian Neem tree (*Azadiracta indica*). It is an excellent way to strengthen root systems, improve plant immunity and balance nutrient levels in the soil. Neem Seed Meal can be mixed into soil or potting mediums, used as a top dress or steeped to make a potent foliar tea.





Oyster Shell

Oyster Shell flour is an all natural source of high quality Calcium that is ground into varying sizes to ensure an immediate and sustained release of this valuable nutrient. Calcium promotes strong root development, improves nutrient uptake and boosts plant immunity. Oyster Shell builds optimum tilth by improving the texture, aeration and water penetration of soils.



Rock Phosphate 0-3-0

Soft rock phosphate, or colloidal phosphate, is a natural, untreated source of long-lasting phosphate and soil-building Calcium. Phosphate will remain available across a wide pH range. For best availability, soft rock phosphate should be mixed into soil or compost prior to planting. A superb nutrient resource for all types of plants.



Seabird Guano 0-11-0

Use our high Phosphorous Seabird Guano to dramatically increase both the amount and size of blooms throughout the flowering period for all indoor and outdoor plants. Seabird Guano greatly enhances beneficial bacterial activity in the soil and because it's water soluble, it makes an excellent tea or foliar spray when filtered.



Shrimp Meal 6-6-0

An excellent all purpose organic fertilizer derived from ground Pacific Northwest shrimp shells. Rich in Nitrogen, Phosphorus and Calcium, Shrimp Meal is wonderful for all types of garden vegetables, flowers, herbs and ornamentals, and also acts as an exceptional compost bio-activator. Shrimp Meal is rich in Chitin, a natural polysaccharide that stimulates the growth of beneficial soil micro-organisms.



Soybean Meal 7-2-1

Soybean Meal is an outstanding source of slow release Nitrogen for promoting vegetative growth and early plant development. Our Soybean Meal is derived from organically grown, GMO-free soybeans that are mechanically processed to preserve the highest plant nutrient value.

Liquid & Soluble Fertilizers

Down To Earth™ Liquid and Soluble Fertilizers supply primary nutrients to encourage vigorous plant growth and to increase bloom and enhance root development for more bountiful harvests. Our fertilizers are specially formulated to correct nutrient deficiencies and sustain plant growth while reducing stress during extreme heat or drought. Either in liquid or water-soluble forms, the fast acting fertilizers quickly penetrate leaves and root systems for quicker results.



Liquid All Purpose 4-1-3

Designed to promote increased shoot, flower, fruit and root development in all types of plants. Ideal for use throughout the growing season in foliar and soil applied solutions, this easy to use concentrated liquid formula provides the primary nutrients needed for vigorous growth, abundant fruits and a plentiful harvest.



Liquid Bloom 2-6-4

Designed to promote enhanced bud, flower, fruit and root development in all types of plants including flowers, fruits, herbs, ornamentals and vegetables. This easy to use concentrated liquid formula provides primary and secondary nutrients needed for beautiful blooms while sustaining overall plant growth. Use Liquid Bloom throughout the growing season to support the natural progression of plant development for prolific flowers, flavorful fruits and a wonderful harvest.



Liquid Bone Meal 0-12-0

A readily available source of Phosphorus and Calcium, our Liquid Bone Meal is a convenient liquid concentrate that encourages increased flower, fruit, vegetable and seed production.

Derived from micronized and stabilized bone meal, it contains slow and fast reacting forms of phosphorus that are uniformly dispersed throughout the root zone for improved availability and rapid uptake. Designed for use in soil, soilless and foliar applications, Liquid Bone Meal will stimulate early root development, aid in plant establishment and improve flavor, quality and yields.



Liquid Calcium 5.0%

Calcium is essential for regulation of nutrient uptake, formation and development of cell wall membranes and translocation of proteins and sugars throughout plant tissue. Calcium deficiency can result in poor root development, yellowing of new plant tissue and fruit and vegetable abnormalities (such as blossom end rot in tomatoes). Our Liquid Calcium is completely water soluble and chelated with unique organic acids to enhance utilization and increase foliar absorption.





Liquid Kelp & Potash 0-0-8

An all natural source of Potassium and Sulfur derived from *Ascophyllum nodosum* seaweed extract and sulfate of potash recommended for use on all types of crops and plants to promote plant vigor and enhanced stress resistance. These valuable nutrients play key roles in a myriad of plant physiological processes vital for plant growth and may help improve tolerance to environmental extremes such as heat and drought conditions. Kelp is universally acknowledged for its beneficial natural compounds that increase growth rates, fruit production and quality.



Liquid MicroNutrient 2-0-1 +2%Fe 2%Mn 2%Zn

Our micronutrient blend provides five plant essential micronutrients (Boron, Copper, Iron, Manganese and Zinc) plus an additional boost of Nitrogen and Potassium in an easy to use concentrate. Formulated with unique organic compounds that allow the chelated nutrients to remain in plant available form until needed for uptake, it's ideal for correcting nutrient deficiencies in vegetable gardens, field crops, fruit trees, vines and turf grasses through foliar or soil applications.



AGmino 14-0-0

Professional grade, water soluble, organic nitrogen fertilizer derived from non-GMO vegetable proteins. Does not contain any animal proteins! AGmino is ideal for supplementing plant nitrogen needs or correcting deficiencies in all types of plants. Blend with other soluble powders or liquids as needed. It is fast acting, user friendly and effective as a foliar spray or in soil applications. Chloride free and safe around plants, people and pets. Pleasant, savory odor makes it great for use in greenhouses and other enclosed areas.



Fish Powder 12-1-1

Premium quality and solution grade, this high-nitrogen fertilizer is for promotion of rapid plant growth or correction of nitrogen deficiencies. Fish Powder is enzymatically hydrolyzed and spray-dried fish protein concentrate. It provides a valuable and plant-available source of organic nitrogen, amino acids and minerals. It is more concentrated and economical than liquid fish fertilizers. Combine with seaweed powder, biological inoculants or other soluble nutrients as part of a comprehensive fertility program.



FulPlex Gold

A concentrated source of pure, low molecular weight golden humic acids. FulPlex Gold is made using a proprietary cold enzymatic extraction process. Use it to optimize plant growth, nutrient uptake, crop quality and yields. Increase effectiveness of foliar applied fertilizers and nutrients in soil/soiless mixes, hydroponics, compost teas and more.



HumaPlex

All natural, easy-to-use, water soluble concentrated humic and fulvic acid extract. HumaPlex activates soil micro-organisms and increases micronutrient availability. It is extracted from the highest quality raw humates in the world. Use in garden soils, containers, soil/soiless mixes, hydroponics, field crops or turf.



KelPlex 0.5-0-17

Professional grade, water soluble, dehydrated seaweed extract that can be used in combination with other fertilizers and soil additives. Kelplex stimulates root development, shoot growth and bud initiation to maximize plant growth. It improves fruit set, harvest quality and yields in all types of plants. Use throughout the growing season as a foliar or soil applied solution to combat plant stress.



Mycorrhizal Fungi & Beneficial Bacteria

Down To Earth™ Mycorrhizal products contain the most diverse and effective strains of mycorrhizal fungi available. Mycorrhizal fungi colonize plant roots, greatly enhancing the effective surface area of the root system. More than 90 percent of plant species form a symbiotic relationship with these types of beneficial soil fungi, bringing more water and nutrients to the host plant's roots. By utilizing a robust mix of beneficial soil organisms, plants can survive and thrive the way they naturally evolved. Apply all these products so they come into direct contact with existing or emerging plant roots.



Granular Root Growth Enhancer

- A granular all purpose combination of 11 species of mycorrhizal fungi for inoculating a diverse selection of plants, trees and shrubs
- Easy to use granular composition for preparing garden soils, transplanting and inoculating soil mixes
- Increases root growth and development, improves nutrient and water uptake and aids in minimizing effects of plant stress



Soluble Root Growth Enhancer

- A soluble all purpose combination of 11 species of mycorrhizal fungi and humic acids that dissolves in water for soil-applied, irrigation, fertigation and transplant applications (can pass 70 mesh screen)
- Ideal solution for established plants, containers, propagation trays, seeds, bare root, turf and landscape
- Increases root growth and development, improves nutrient and water uptake and aids in minimizing effects of plant stress





Granular Root Zone

- Super concentrated combination of 16 species of mycorrhizal fungi, 2 species of *Trichoderma*, 12 species of bacteria, organic nutrients and humic acids
- A powerful blend of microorganisms and food resources designed to stimulate and energize the living soil
- Easy to use granular composition for preparing garden soils, transplanting and inoculating soil mixes
- Enhances root, shoot and plant development for increased vigor, growth and yields
- The most diverse and effective biological product available that is approved for use in organic crop production



Soluble Root Zone

- New and improved super concentrated combination of 16 species of mycorrhizal fungi, 2 species of *Trichoderma*, 12 species of bacteria and soluble humic acid extract
- A powerful blend of microorganisms and food resources designed to stimulate and energize the living soil
- Easily dissolves in water for soil-applied, irrigation, fertigation and transplant applications (can pass 70 mesh screen)
- Ideal solution for established plants, containers, propagation trays, seeds, bare root, turf and landscape
- Enhances root, shoot and plant development for increased vigor, growth and yields



Granular Endo

- All purpose combination of 4 species endomycorrhizal fungi for common vegetables, fruits, herbs and grasses
- Most popular garden plants (about 85%) form endomycorrhizal relationships only and will benefit from these species
- Easy to use, concentrated granular material for preparing garden soils, transplanting and inoculating soil mixes



Ultrafine Endo

- All purpose combination of 4 species endomycorrhizal fungi for common vegetables, fruits, herbs and grasses
- Most popular garden plants (about 85%) form endomycorrhizal relationships only and will benefit from these species
- Ultra concentrated super fine powder for watering into soils and growing media or for direct applications as a seed coat or root dip



Potting Soil, Compost & Seed Starting Media

Down To Earth™ Potting Media and Composts let you strengthen the complex soil environment of your garden to promote healthy, vibrant plant growth. Good soil provides aeration, proper water absorption and plenty of space for roots to expand, which allows plants to grow at a natural pace and produce the best tasting, most nutritious foods for you and your family. DTE™ Potting Media and Composts can help develop poor soil structures, change the pH levels, add water-holding capacity and stimulate microbial life.

Down To Earth™ All Natural Potting Soil



Contains: Aged Pacific Northwest Bark, Coir Fiber, Worm Compost, Earthworm Castings, Perlite and Diatomite plus Organic Fertilizers and Mycorrhizal Fungi



- Our custom blend of premium ingredients makes this soil an excellent all purpose mix for seed starting, transplanting and container gardening.
- Rich in pure Earthworm Castings, Worm Compost and Organic Fertilizers, our biologically active potting soil nourishes your plants while retaining adequate moisture to help reduce watering needs.
- Diverse strains of mycorrhizal fungi promote extensive root development, increased nutrient uptake and improved stress resistance in a wide variety of plants, trees and shrubs.

Down To Earth™ Pro-Organix Mix



Contains: Coarse Sphagnum Peat Moss, Coconut Coir Fiber, Perlite, Worm Compost, Diatomite, Mycorrhizal Fungi, Natural Wetting Agent and Organic Fertilizers



- A professional potting medium specifically formulated for organic growers who want a lightweight, biologically active seed starting, transplant and container mix with exceptional water retention.
- Enhanced with beneficial microorganisms and mycorrhizal fungi to encourage expansive root development and efficient nutrient uptake.
- Pro-Organix Mix is designed to meet the USDA National Organic Program (NOP) requirements and can be used by certified organic growers for a wide variety of crops and applications.

Down To Earth™ 100% Natural Compost



Contains: Composted Forest Products, Composted Bark, Composted Dairy Manure, Kelp Meal and Oyster Shell (for pH adjustment).

- Perfect for amending garden soils, creating your own potting mix or making beneficial compost teas and extracts.
- Adding generous amounts of organic matter to vegetable gardens and flower beds helps build soil structure, improves moisture retention and promotes more productive fruits, vegetables and flowers. Top dressing or mulching with compost throughout the year enriches the soil, stimulates root development, suppresses weeds and helps prevent erosion.
- Our compost does not contain any municipal yard wastes like grass clippings or leaves and is free of any herbicide or pesticide residues commonly found in commercial composts.



Coconut Coir Fiber

A compressed, all purpose medium shredded fiber and pith blend that makes an excellent addition to potting mixes to provide structure, aeration and improved water holding capacity. An ideal alternative to coarse peat moss in bulk potting media, compost bins, garden beds and soil mixes designed for medium to large containers.



Coconut Coir Fiber Fine Pith

A compressed, fine grade pith and short fiber blend that we recommend as a superior alternative to screened peat moss. Our Coir Fiber Pith is a light, fluffy organic material that provides exceptional water and nutrient retention in all seed starting and sprouting mediums. Use anywhere a fine texture is desired such as in propagation trays and seedling flats.



Coconut Husk Chips

An ideal bark medium that provides excellent aeration and structure while retaining moisture for the plant. Coconut Husk Chips are perfect for orchids, *Bromeliads*, *Anthiriums* and any other plant that thrives in bark, rockwool or clay media.



Earth Plugs

All Natural Plant Starters for Propagating Cuttings and Germinating Seeds

- Completely biodegradable
- Made of composted natural materials and a plant derived polymer
- Provides optimum aeration and water penetration for expansive root development
- Protects delicate young roots during handling and transplanting

Earth Plugs are an easy, effective method of starting seeds or rooting cuttings. The pre-formed plugs provide a flexible, aerated design that resists compaction and will not crumble when transplanting. Earth Plugs promote superior root development for rapid plant establishment and vigorous new growth.



Diatomite Rock

Diatomite Rock is a naturally mined mineral composed entirely of the skeletal remains of trillions of microscopic, unicellular plankton called diatoms. It permanently improves the structure, drainage and oxygen exchange of heavy soils and horticultural growing media, because it is indefinitely stable and non-compactable. The porous aggregate particles wet rapidly and will absorb greater than 100% of their own weight in water, acting as a reservoir for plant available water (PAW) and nutrients. Fine to medium particle size (2-7 mm).

Fertilizer Chart

- ★ Best Usage
- ✓ Good Usage

	Bulbs	Flowers	Containers	Fruits	Herbs	Low pH Plants	Lawns	Shrubs	Trees	Vegetables	New Gardens	Existing Gardens	Compost Activator	Compost Tea	Teas & Foliar Feeding
SOIL & AMENDMENTS															
Down To Earth™ Compost	✓	★	✓	★	★		✓	✓	★	✓	✓	★	★	✓	✓
Down To Earth™ Potting Soil	✓	✓	★	✓	✓					★					
Pro-Organic Mix		✓	★	✓	✓	✓				★					
Diatomite Rock		✓	★		✓						★				
Coconut Coir Fiber	★	★	★	✓	✓	★	✓	✓	✓	✓	★	★	★		
MYCORRHIZAE															
Granular Root Growth Enhancer	✓	★	★	★	★		✓	★	★	✓	★	★			
Soluble Root Growth Enhancer	✓	★	★	★	★		★	★	★	✓	★	★	★	★	
Granular Root Zone with Beneficial Bacteria		★	★	★	★	✓		★	★	★	★	★	★		
Soluble Root Zone with Beneficial Bacteria		★	★	★	★			★	★	★	✓	✓	★	★	
Granular Endo	★	★	★	★	★		★	✓	✓	★	★	✓			
Ultrafine Endo	★	★	★	★	★		★	✓	✓	★	★	★		✓	
FERTILIZER BLENDS															
Acid Mix 4-3-6	✓	★	★	✓	✓			★	★	★	★	★	✓		
All Purpose Mix 4-6-2	✓	★	★	★	✓	✓		★	★	★	★	★	★	★	
Bio-Fish 7-7-2	✓	★	★	★	✓			★	★	★	★	★			
Bio-Live 5-4-2	★	★	★	★				★	★	✓	✓	✓			
Bio-Turf 8-3-5	✓	✓	✓	✓				★	★	✓	✓	✓			
Citrus Mix 6-3-3	✓	★	✓	✓				★	★	✓	✓	✓			
Rose & Flower Mix 4-8-4	★	★	✓	✓	✓			★	★	★	★	★	★		
Starter Mix 3-3-3	★	★	★	★	✓			✓	✓	★	✓	✓			
Tree & Shrub Mix 4-2-4	✓	✓	✓	✓	✓			★	✓	★	★	★			
Vegan Mix 3-2-2	✓	✓	✓	✓	★			✓	✓	★	★	★	★		
SINGLE INGREDIENT FERTILIZERS															
Alfalfa Meal 2.5-0.5-2.5	✓	★	✓	✓	✓			✓	✓	✓	✓	✓	★	★	
AZOMITE™ Granulated Trace Minerals 0-0-0.2	★	★	★	★	★			★	★	★	★	★	★	★	
AZOMITE™ SR Trace Minerals 0-0-0.2	★	★	★	✓	✓			★	★	★	★	★	★	★	
Bat Guano 9-3-1	★	★	★	✓	✓			★	★	✓	✓	✓	★	★	★

★ Best Usage
 ✓ Good Usage

Bulbs
 Flowers
 Containers
 Fruits
 Herbs
 Low pH Plants
 Lawns
 Shrubs
 Trees
 Vegetables
 New Gardens
 Existing Gardens
 Compost Activator
 Compost Tea
 Teas & Foliar Feeding

SINGLE INGREDIENT FERTILIZERS										
Bat Guano 0-7-0	★	★	★	★	★	★	★	★	★	★
Blood Meal 12-0-0	✓	✓	✓	✓	✓	✓	✓	✓	✓	★
Bone Meal 3-15-0	★	★	★	✓	✓	✓	✓	✓	✓	✓
Crab Meal 4-3-0	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Cottonseed Meal 6-2-1			★							
Feather Meal 12-0-0	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Fish Bone Meal 3-16-0	★	★	★	✓	✓	✓	✓	✓	✓	✓
Fish Meal 8-6-0	★	★	★	★	★	★	★	★	✓	✓
Granular Humic Acids	★	★	★	★	★	★	★	★	★	★
Kelp Meal 1-0-1-2	★	★	✓	✓	✓	✓	✓	✓	✓	✓
Langbeinite 0-0-22	✓	★	★	✓	✓	✓	✓	✓	✓	★
Neem Seed Meal 6-1-2	✓	✓	★	✓	✓	✓	✓	✓	✓	✓
Oyster Shell	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Seabird Guano 0-11-0	★	★	★	★	★	★	★	★	★	★
Shrimp Meal 6-6-0	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Soybean Meal 7-1-2	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
LIQUID FERTILIZERS										
HumaPlex	✓	★	★	★	★	★	★	★	✓	★
FujiPlex Gold	✓	★	★	★	★	★	★	★	★	★
Fish Powder 12-1-1	✓	✓	★	✓	✓	✓	✓	✓	✓	★
KelPlex 0.5-0-17	✓	★	★	✓	★	★	★	✓	★	★
Liquid All Purpose 4-1-3	✓	★	★	✓	★	★	★	★	★	✓
Liquid Bloom 2-6-4	★	★	★	✓	★	★	★	★	★	★
Liquid Bone Meal 0-12-0	★	★	★	✓	★	★	★	★	★	★
Liquid Kelp & Potash 0-0-8	★	✓	★	✓	★	★	★	★	★	★
Liquid MicroNutrient 2-0-1	✓	✓	★	✓	★	★	★	✓	✓	★
Liquid Calcium 5%	✓	✓	★	✓	★	★	★	✓	✓	★
AGmino 14-0-0	✓	✓	★	✓	★	★	★	✓	✓	★

Anatomy of Down To Earth™ Fertilizer

Bigger Boxes, Better Values!

Our larger size gives you more fertilizer for the same price as other boxes. With over 31 varieties of single-ingredient and mixed-blend fertilizers in the large boxes, every gardening project is covered.

Mini Boxes, Fun Solutions!

Our smaller size is great for small spaces and unique endeavors. With over 13 varieties of single-ingredient and mixed-blend fertilizers in the mini boxes, they are an economical and convenient option for your garden.

Endless possibilities!

Down To Earth™ fertilizers are designed with the ardent gardener in mind. Beside boxes, we also offer medium and large bags for the avid grower, small farmer or commercial crop producer.

100% Recycled, Unbleached Paper

Manufactured to keep dioxins and waste out of the environment

Plant-Based Inks

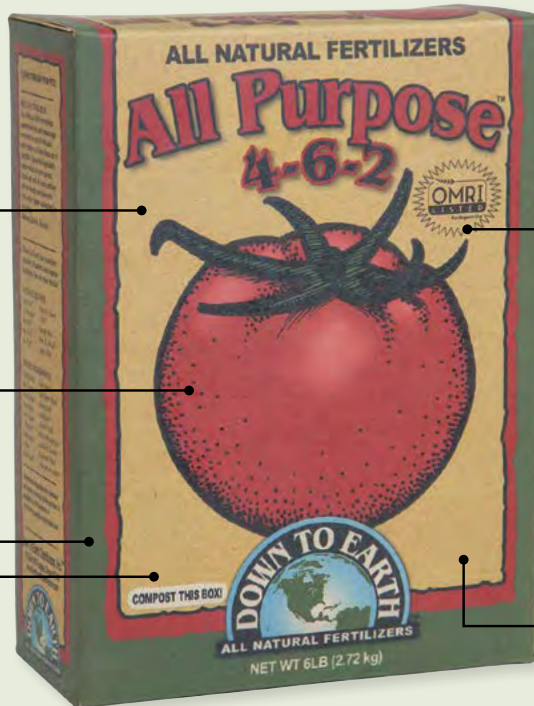
A safe, sustainable resource that produces vivid and bold designs

Box Liner

Helps keep product fresh and reduce odor

Completely Recyclable

Shred the box and add it to your compost pile



Approved for Organic Gardening

Many Down To Earth fertilizers are approved by *OMRI* and *CDFA*

Superior Ingredients

Sourced to provide highest quality and minimal environmental impact

Diverse Selection

Larger variety of single ingredients and blended mixes

Marine-Based Formulas

Many of the ingredients are sourced locally in the Pacific Northwest

Down To Earth™ Brand Fertilizers
Brought to You by:

Find us online at:
downtoearthfertilizer.com

