Fertilizers Compatible with Organic Landscape Management

The Fertilizers Compatible with Organic Landscape Management list identifies the range of natural fertility product suppliers that support soil fertility and soil health, which is essential to healthy plants and landscapes. The microbial activity in the soil that makes up the soil food web (including bacteria, fungi, and protozoa, nematodes and micro-arthropods, earthworms, insects, small vertebrates, and plants) is foundational to the natural cycling of nutrients that sustains plant life. Organic practices feed the biological life in the soil, not the plant directly. As communities recognize the hazards of and restrict pesticides (including insecticides, herbicides, and fungicides) used to manage their parks, school grounds, playing fields, golf courses, and public spaces (See Lawn and Landscape Factsheet), land managers are rethinking how turf systems are managed.

Since chemical-intensive practices are built on the presumption that parks and playing fields require toxic chemicals and synthetic fertilizers to be managed to community expectations, thinking about the soil system is often new to land managers. While managers often test and manage soil chemistry and plant nutrients, they typically have not evaluated and nurtured the soil food web. When restrictions on pesticides are put in place to protect public health, pets, wildlife, and the environment, land managers often ask, “What products can replace those that have been taken away or restricted?” However, when transitioning to organic management, the better question is, “What practices and products should be adopted to build healthy turf or landscapes?” The answer: A combination of soil fertility practices that nurture the soil biology, cultural practices that facilitate the natural cycling of nutrients, and products that are compatible with microbial life in the soil and organic systems. Toxic pesticide and synthetic fertility use is harmful to the soil biology, creating a dependency on toxic chemicals to solve what become unending and escalating pest problems –often referred to as a toxic treadmill.

Beyond Pesticides has compiled the *Fertilizers Compatible with Organic Landscapes* list to assist in establishing the foundation of a healthy lawn, turf system, landscape, and garden. This list complements the List of Products Compatible with Organic Landscape Management, which identifies organic compatible insecticides, herbicides, and fungicides.

Why focus on soil fertility and soil health?

The focus on soil health is a basic principle in organic agriculture that has direct applicability to all land management, including organic lawn and landscape management. The healthier the plant, the more resilient it is to the stress of playing field or park use. Organic soil systems improve water retention, reducing water consumption and making the system less vulnerable to periods of drought or low water. They also more readily sequester carbon as a food source, and slow global climate change. In organic, as defined by the Organic Foods Production Act, passed by the U.S. Congress in 1990, the only inputs allowed in certified operations are those that do not adversely affect the “biological and chemical interactions in the agroecosystem, including the physiological effects of the substance on soil organisms. . .” [7 U.S.C. 6518(m)(5)]. Because of this, synthetic fertilizers are prohibited in certified organic systems. While chemical-intensive land management relies on synthetic fertilizers that are soluble chemicals taken up by the plant and prone to run-off into waterways, organic systems rely on feeding the soil microbes, which in turn produce solubilized nutrients that are absorbed by the plant. Understanding of the living soil and the launching of organic principles in agroecology go back to the field studies (1939) and publication of The Living Soil (1943) by agriculturist Lady Evelyn Balfour, the work of Sir Albert Howard (An Agricultural Testament and The

Soil and Health), and J.I. Rodale (Pay Dirt: Farming and Gardening with Composts), among others.

Organic Matter and Composted Materials

In an organic system, organic matter (such as a material derived from compost or natural sources) is added to the turf or landscape and then broken down into nutrients. Author and professor David Montgomery, Ph.D. has said of transitioning his own lawn and garden,

> *"The microbial life—the bacteria and fungi—were the things primarily responsible for that transformation, and they turned out to be very nutrient rich—rich in nitrogen, rich in phosphorus, and rich in the micronutrients that all life forms need. Why? Well, because they are breaking down organic matter that used to have those nutrients—used to be living matter. When nematodes and microarthropods can graze on and consume these smaller creatures, it comes out later in a transformed state that can be fairly good fertilizer. I like to think of them as tiny livestock that are manuring the soil from the inside out. We are adding all that organic matter to the yard, basically feeding our grazing animals, which are then in turn being grazed. That is essentially building up the nutrient levels in the soil through a two-step soil-food web." (2017)*

Dr. Montgomery explains the importance of the rhizosphere, which is the area around a plant's root system that is rich with microbial life, and describes it as "one of the most life-dense zones on the planet." Dr. Montgomery continues, "I learned to see the rhizosphere, this life-dense zone around the roots of plants, as what we call a biological bazaar, where microbes and plants trade nutrients, metabolites, and exudates." And, "The plants are helping to feed the microbes, the microbes are helping to nurture the growth, and, it turns out, the health of the plants. Mycorrhizal fungi, reaching out into the soil, are going out and excavating things like phosphorus, manganese, or iron from the soil, bringing it back, and trading it to the plant in exchange for a cut of the photosynthetic harvest," Dr. Montgomery said. (See Dr. Montgomery's Sustaining Life: From Soil Microbiota to Gut Microbiome.)

Building a List of Soil Fertility Products

The Fertilizers Compatible with Organic Landscape Management identifies categories of products and companies that are currently marketing organic fertility products to general consumers and smaller purchasers. The list also indicates whether products are available for purchase through the manufacturer's website or must be purchased through a retailer or dealer. The list will grow over time, and readers are encouraged to send product names and companies that should be listed as the on-line list expands. At this time, the list does not include specific fertilizer products, but instead breaks down companies based on their specialty. While companies like Dr. Earth provide a range of consumer-friendly fertilizers for lawns and landscapes, Worm Power, for instance, specializes solely in liquid vermicompost teas (a source of microbial life). To further assist consumers in supporting companies that go organic, the list indicates whether a company's entire product line is compatible with certified organic operations, or whether only a select number of products achieve that status. Products are often labeled as "OMRI" listed, which means that manufacturers have paid the Organic Materials Review Institute to assess the product's compliance with the Organic Foods Production Act. However, there are numerous products that may be determined by a materials review organization to be compatible, but are not OMRI-listed.

But Isn't a fertilizer just a fertilizer?

There are important distinctions between synthetic (including ammonium nitrate and urea nitrate)

and organic fertilizers used on lawns and landscapes. Synthetic, salt, and ammonia-based fertilizers are not good at feeding soil, and many are actually toxic to soil organisms. Employed by lawn care companies like Tru-Green, these products give a lawn a quick boost and green-up, but the results are short-lived. Excessive synthetic nitrogen causes soil microorganisms to multiply rapidly, consuming available carbon and organic matter. Grass and plants become dependent on heavy influxes of nitrogen to maintain a green appearance, as well as toxic pesticides to keep weed, insect, and fungal pressures down, while soil quality continues to decline.

Organic fertilizers provide a gentle, slow release of a range of macro and micronutrients that nourish the lawn and landscape by feeding soil microorganisms. As biological life in the soil grows, this microorganism "microherd" can become so productive that it begins to cycle up to two pounds of nitrogen per 1,000 square feet each month of the growing season. Thus, the focus is not on using fertilizer products to sustain cosmetic appearances, but using fertilizers that enable soil life to naturally sustain grass and landscape plants. And not only is biological life feeding plants, it is also acting to prevent pest problems by building plant resiliency. Well-maintained organic lawns grow thicker grass, which crowds out weeds, and has fewer problems with insects like grubs because predators in the soil consume eggs and larvae before they have a chance to damage turf. Over time, this approach saves money by not requiring the frequent use of expensive, petroleum-based synthetic fertilizer or toxic pesticide applications.

What nutrients do grass need?
The primary nutrients that grass needs to grow are nitrogen, phosphorus, and potassium. Calcium, magnesium, and sulfur are considered secondary nutrients. A soil test will identify the levels that are required for optimal growth, but will vary for different species, cultivars, and time of year. In an organic system, the soil organisms, if properly nurtured with natural fertility, will provide the required nutrients for the healthy turf systems. Key to fertility is the facilitation of both vertical and horizontal root growth to promote a thick and resilient stand. Fertility in the fall or cooler season helps support root depth. (For other cultural practices that contribute to a healthy lawn, see Beyond Pesticides' Lawns and Landscapes webpage.

From Theory to Practice: Start with a Soil Test
The theory behind the organic approach sounds good, but how do you actually put it into practice? Start with two types of soil tests – one for soil chemistry and another for the soil food web.

Soil chemistry. Soil chemistry tests can be performed for a small fee by state agricultural extension offices or national labs such as WayPoint Analytical. Organic fertility recommendations should be requested. The soil test will identify the nutrients and minerals that are deficient in the soil. pH and lime or gypsum recommendations are important because soils that are too acidic or too basic lock up important nutrients that only pH corrections can address. Most grass species like the pH around 6.5 or 7.0.

Soil biology. The soil foodweb analysis will identify the microorganisms and the organic matter content in the soil. Generally for lawns, one application of compost sometime during the growing season is the best action you can take to jump-start soil life. Apply it at a rate of roughly ½ cubic yard per 1,000 feet – you should cover the lawn with about a quarter inch of compost. Alternatively, you can employ compost tea (vermicompost tea will also work) in place of a solid compost application. For higher-quality or heavily-used grounds and fields, you'll need a bit more work to develop and maintain soil life. In that case, applications of humate products (follow label directions for applications) like Humamend by Organic Approach, biological soil stimulants like Vitazyme by Vital Earth Resources, or Neptune's Harvest Turf Formula can further enhance your microherd's ability to supply nutrients to turf.

While the list of *Fertilizers Compatible with Organic Landscape Management* should prove to be a good resource for sourcing high quality organic fertilizers, products alone will not achieve the desired results. Fertilizers are only one part of a system that requires attention to cultural practices, such as mowing high, aeration, proper watering, overseeding, and dethatching. Fall is the best time to apply compost or compost tea topdressing, as well as aerating and overseeding. For more information on the cultural practices that support an organically fertilized lawn, see Beyond Pesticides' Lawn and Landscapes program webpage.

Company	Website	Specialty	All Fertilizer Products Certified Org	Available for Puchase on Website?
Advanced Marine Technologies	www.countrygemorganics.com	Sea-based Fertilizer	Yes	Yes
AgTonik	www.agtonik.com	Humates	Yes	Wholesale only.
Anasazi Gold Organics	www.anasazigoldorganics.com	Humates	No	Yes
Aquasap	www.aquasapseaweed.com	Sea-based Fertilizers	Yes	Call or webform.
Beneficial Biologics	www.beneficialbiologics.com	Misc Fertilizers	No	Yes
BioAgricultural Services	www.bioag.com	Humates	Yes	No.
BioChar Now	www.biocharnow.com	BioChar	Yes	Call or webform.
Biochar Supreme	www.biocharsupreme.com	BioChar	Yes	Yes
BioFert Manufacturing	http://www.biofert.ca	Misc Fertilizers	No	Distributer list available.
BioFlora Systems	https://www.bioflora.com	Misc Fertilizers	No	Yes (Amazon link) and retailer list.
BioScientific	www.greatbigplants.com	Misc Fertilizers	Yes	Yes
BioWorks	www.bioworksinc.com	Misc Fertilizers	No	Distributor list.
BlackEarth	www.blackearth.com	Humates	No	Call or Webform.
Blessing Blends	www.blessingsblends.com	Compost	Yes	Call or Webform.
Botanicare	www.botanicare.com	Liquid Fertilizers	No	Call or webform.
Calcium Products	www.calciumproducts.com	Lime/Gypsum	No	Call or webform.
California Organic Fertilizers	www.organicag.com	Misc Fertilizers	Yes	Call or webform.
Coast of Maine	www.coastofmaine.com	Misc Fertilizers	Yes	Call or webform.
Cold Creek Compsot	www.coldcreekcompost.com	Compost	No	Call or webform.
Compost Weks	www.compostwerks.com	Compost	No	Yes
Converted Organics	www.convertedorganic.com	Misc Fertilizers	Yes	Call or webform.
rop Services International	www.cropservicesintl.com	Misc Fertilizers	No	Call or webform.
Avenger Organics	www.avengerorganics.com	Misc Fertilizers	No	Yes
Cutting Edge Solutions	www.cuttingedgesolutions.com	Misc Fertilizers	No	Call or webform.
Down to Earth Distributors	www.downtoearthfertilizer.com	Misc Fertilizers	No	Call or webform.
Dr. Earth	www.drearth.com	Misc Fertilizers	Yes	Call or webform.
Dramm	www.dramm.com	Fish Fertilizer	Yes	Call or webform.
Earth Green	http://www.earthgreen.com	Humates	No	Call or webform.
Earthworm Organics	www.vermigrowproducts.com	Vermicompost Tea	Yes	Call or webform.
EB Stone Organics	www.ebstone.org	Misc Fertilizers	No	Call or webform.
Eco Friendly Products	www.ecofriendlyonline.com	Turf Care	No	Yes
Eco Nutrients	www.econutrients.com	Sea-based Fertilizers	No	Call or webform.
Ecoscraps	www.ecoscraps.com	Compost	Yes	Call or webform.
Enterra Food Corporation	www.enterrafeed.com	Insect-based Fertilizer	Yes	Call or webform.
Envirem Organics	www.envirem.com	Compost	No	Call or webform.
EnviroKure	www.envirokure.com	Liquid Fertilizers	Yes	Call or webform.
Environmental Care and Share	www.ecands.bio	Misc Fertilizers	Yes	Call or webform.
-Z Gro	www.ez-gro.com/	Misc Fertilizers	No	Call or webform.
Fertilizers USA	www.fertilizersusa.com	Misc Fertilizers	Yes	Must go through distributor.
Ferti-Organic	www.ferti-organic.com	Misc Fertilizers	Yes	Call or webform.
Fox Farm	www.foxfarmfertilizer.com	Misc Fertilizers	No	Call or webform.
Geoponics	www.geoponicscorp.com	Misc Fertilizers	No	Yes
Healthy Grow	www.healthygrow.com	Poultry-based fertilizers	No	Call or webform.
Healthy Soil	www.healthysoil.com	Misc Fertilizers	Yes	Call or webform.
Humic Growth Solutions	www.humicgrowth.com	Humates	No	Call or webform.
JH Biotech	www.jhbiotech.com	Misc Fertilizers	No	Call or webform.
Jobes	www.jobescompany.com	Misc Fertilizers	No	Call or webform.
John and Bob's Fertilizer Company	www.johnandbobs.com	Misc Fertilizers	No	Yes
Jongs Organic	www.jongs.com	Misc Fertilizers	No	Yes. (Link to Amazon)
Juniper Farms	www.juniperfarms.com	Mulch/Growing Media	No	Call or webform.
Kellogg Garden products	www.kellogggarden.com	Misc Fertilizers	Yes	Call or webform.
LiveEarth	www.livearth.com	Misc Fertilizers	No	Call or webform.
Maxicrop	www.maxicrop.com	Sea-based Fertilizers	No	No (Call)
McGeary Organics	www.mcgearyorganics.com	Misc Fertilizers	Yes	Yes
Mighty Grow Organics	www.mightygrow.com	Misc Fertilizers	Yes	Call or webform.
MontanaGrow	www.montanagrow.com	Silicon Amendments	Yes	Yes
Monterey	www.montereylawngarden.com	Misc Fertilizers	No	Yes
Monty's Plant Food Company	www.montysplantfood.com	Humates	No	Call or webform.
Nature Safe	www.naturesafe.com	Turf Care	No	Call or webform.
Neptune's Harvest	www.neptunesharvest.com	Sea-based Fertilizers	No	Yes
North Country Organics	www.norganics.com	Misc Fertilizers	No	Call or webform.
NutriAg	www.nutriaghomeandgarden.com	Misc Fertilizers	No	Call or webform.
OceanGrown	www.oceangrown.com	Sea-based fertilizers	Yes	Call or webform.
Organic Ag Products	www.organicagproducts.com	Misc Fertilizers	Yes	Call or webform.
Organic Approach	www.organicapproach.com	Misc Fertilizers	No	Yes
Pacific Gro	www.pacificgro.com	Sea-based Fertilizers	No	Call or webform.
PJC Organic	www.pjcorganic.com	Misc Fertilizers	No	Call or webform.
remier Tech	www.pthomeandgarden.com	Misc Fertilizers	Yes	Call or webform.
Progressive Farms	www.microbemakers.com	Compost Teas	No	Yes

Purple Cow Organics	www.purplecoworganics.com	Misc Fertilizers	Yes	Call or webform.
Red Worm Power	www.redwormpower.com	Vermicompost Tea	Yes	Yes (Webform and invoice)
Reforestation Technologies International	www.reforest.com	Tree Fertilizers	No	Call or webform.
Safer Brand	www.saferbrand.com	Misc Fertilizers	No	Yes
Southern Organics and Supply	southernorganicsandsupply.com	Misc Fertilizers	No	Call or webform.
Sun Gro	www.sungro.com	Mulch/Growing Media	No	Call or webform.
SurVerda	www.surverda.com/	Misc Fertilizers	No	Call or webform.
Sustane Natural Fertilizers	www.sustane.com	Misc Fertilizers	No	Call or webform.
TechnaFlora Plant Products	www.technaflora.com	Liquid Fertilizers	No	Call or webform.
Terra Fresh	www.terrafreshhome.com	Plant Extracts	Yes	Yes
The Ahimsa Alternative	www.neemresource.com	Neem Products	Yes	Yes
The Worm Farm	www.thewormfarm.net	Vermicompost	No	Yes
Therm-O-Rock	www.thermorock.com	Pearlite/Vermiculate	Yes	Call or webform.
Thorvin	www.thorvin.com	Sea-based Fertilizers	Yes	Call or webform.
True Organic Products	www.true.ag	Misc Fertilizers	Yes	Call or webform.
Vermicrop Organics	www.vermicrop.com	Vermicompost	Yes	Call or webform.
Vermitechnology	www.vermitechnology.com	Vermicompost	Yes	Call or webform.
Vital Earth Resources	www.vitalearth.com	Misc Fertilizers	Yes	Call or webform.
Western Nutrients	www.westernnutrientscorp.com	Misc Fertilizers	No	Yes
Westland	www.westlandltd.com	Misc Fertilizers	No	Call or webform.
WisEarth Organics	hwww.wisearth.com	Misc Fertilizers	Yes	Yes
Worm Power	www.wormpower.net	Vermicompost Tea	Yes	Yes

For a printable version of **Products Compatible with Organic Landscape Management**, **click here**.
And for a printable version of **Fertilizers Compatible with Organic Landscape Management**, **click here**.