TECH CENTER

Soil problems? Try an 'amendment'

Though they come in all shapes and sizes, each has specific functions. Here are some available products and what they can do for you.

■ Soil problems are the bane of landscape managers everywhere. In most turf textbooks, entire chapters are devoted to soil characteristics and the problems they create in growing healthy turf.

When problems arise with soil composition, turf managers might turn to a class of products known as "soil amendments," which can modify soil characteristics in any number of positive ways.

Soil amendments can modify:

1) soil texture
2) soil structure
3) the soil's chemical properties
4) the soil's long-term stability
5) availability of nutrients, water, etc. to the plant
6) amount of other treatments (fertilizer, pesticides) required
7) cost of maintaining healthy plants

Soil amendments are used to increase air porosity, change permeability, or increase water retention. Many contain micronutrients or in some way benefit nutrient release and/or overall plant health.

Soil amendments come in as many different forms as there are uses. They range from sand—found naturally in the environment—to many specialty products like super-absorbent polymers.

Some common types of soil amendments are **inorganic**, usually in granular form. They can improve pore space, water retention, percolation and infiltration, and correct acidity. The most commonly used coarse amendment is sand because of its effectiveness, stability and low cost.

BENEFITS OF SOME SOIL AMENDMENTS

Calcined clay	improves	pore space
		water retention
		water infiltration
		water percolation
Lime	improves	soil chemical properties
		(corrects) acidity
Organic amendments (compost, peat, etc.)	improve	soil structure
		pore space
		nutrient retention
		water retention
		soil resiliency
		cation exchange capacity
Processed mica	improves	water retention
		pore space
		cation exchange capacity
Sand	improves	aeration
		water infiltration
		water percolation
Wetting agents	improve	water infiltration
		water retention

ments are calcined clay *(Dialoam, Turface, Terra-Green)*, processed mica (vermiculite, *Terralite*), lime (*Limestone F, Lime Crest*), perlite, diatomite, ureaform aggregates (*Hydromul, Styromul*), clinoptilolite zeolite (*Aquasand*), expanded shales (*Haydite, Weblite, Idealite*), activated charcoal, pumice, slag, fly ash, and cation and anion exchange resins.

Another kind of soil amendment is **organic** in nature. They improve soil structure, aeration, nutrient and water retention, resiliency, aggregation and cation exchange capacity, and increase the population of beneficial microorganisms.

(*Canadian Sphagnum Peat Moss, Partac Peat, Baccto*), humus (*Humate, Liquid Humus, Iron Sea Humus, Sea Humus, New Mexico Memefee Humate*), manure, sludge, sawdust, tree barks and fibers (*Top N' Turf*), seaweed (*SeaGreen*), kelp (*Potent Sea, Sea Green*), activated charcoal, poultry litter, peanut and pecan hulls, corncobs, cotton burr compost, rice hulls, and vegetable wastes.

Another type of soil amendment is called the **surfactant** or **wetting agent**. They are used to improve water infiltration and water retention. Good examples are *Aqua-Gro, Hydrowet, Lescowet,* and

Terra-Sorb.

In some cases, **compost materials** are also considered soil amendments. They are used to improve soil structure and water retention.

Other types of soil amendments:

- **soil conditioners,**
- **polymers** (like *Krilium* for reducing erosion, *Terra-Sorb, StockSorb*),
- **sewage sludge** (for enhancing soil texture, improving aeration, infiltration and water-holding capacity, like *Earthmate*);
- **clay balls** (for infiltration, nutrient and moisture retention),
- **starch polymers** (like *Super-Slurp* for water retention), and
- **mulches** (for temperature stability, less water evaporation).

Following is a partial list of the many soil amendments available.

—Jerry Roche

Soil amendments

Accuwet: (see Lescowet)

Actosol: an organic humic acid with fertilizer additives that improves soil texture, promotes microorganism activity and increases moisture retention. (Arctech)

Agroroots: a kelp-based plant stimulant that promotes root growth and plant vigor. (Agro-Tech 2000)

Aqua-Gro: non-ionic organic wetting agent that alleviates localized dry spots and compaction, promotes nutrient uptake. (Aquatrols)

Aquasand: a form of zeolite (volcanic ash) that absorbs ammonium and other soil impurities, absorbs and releases moisture for less watering, and prevents root rot. (Creative Curb)

Axis: made from diatomaceous earth that reduces watering requirements, increases aeration, reduces compaction and improves percolation. (Agro-Tech 2000)

Baccto Peat Moss: comes in either sphagnum or horticultural mixes. (Michigan Peat)

Back to Earth: cotton burr compost products that can be used as soil conditioners and/or topdressings. (Back to Earth Resources)

Beam Clay: a baseball diamond surfacing product. (Partac Peat)

BioGroundskeeper: (Sustane)

Break-Thru: a non-ionic wetting agent/surfactant that increases the effectiveness of pesticides. (Agro-Tech 2000)

Canadian Sphagnum Peat Moss: (Conrad Fafaro)

Dakota Peat: (Dakota Peat & Blenders)

DryRoots Greens Grade: an organic soil conditioner that increases root growth and microbial activity. (Roots/RGB)

Earthmate: a natural organic sewage sludge that can be used as a mulch but retains moisture better. (PRS Materials)

Essential: a product derived from plant extracts and hydrolyzed organic protein that stimulates the natural breakdown of organic matter in the soil. (Growth Products)

Gro-Power: a soil conditioner, with or without soil penetrant. (Gro-Power)

Grozyme III: a product that can activate locked nutrients. (Master Turf)

Gypsum-F: a flowable product that increases permeability and lowers sodium. (W.A. Cleary)

Humate Ag, LS and **Stress Reliever:** soil conditioners and biostimulants made of slow-release, granular humic acids. (Humate International)

Hydro Gel: a plant watering aid that absorbs and holds several hundred times its weight in water. (Finn Corp.)

Hydro Source: a water-absorbing, synthetic polymer that increases long-term water-holding capacity. (Jonathan Green)

Hydrowet: a blend of synthetic surfactants that improves water infiltration into the soil profile, thus increasing the moisture content of the soil. (Kalo)

Iron Sea Humus: cold-processed seaweed plus humic acid plus iron that enhances root growth. (Humus Products)

IronRoots: a biostimulant that promotes root growth and color. (Roots/RGB)

Kick: a natural humic acid-based wetting agent with kelp, iron complex and sugars that stimulates root development and helps release tied-up nutrients. (Earthworks)

Lescowet and **Accuwet:** surfactants plus soil conditioners (87% and 25% active ingredient, respectively) that reduce water use, eliminate localized dry spots and encourage deep rooting. (Lesco)

Limestone-F: a flowable limestone that neutralizes pH. (W.A. Cleary)

Liquid Humus: a 12% concentrate humic acid soil conditioner and root stimulant. (Humus Products)

Luma-pHix: a highly concentrated chelated liquid calcium to treat calcium-deficient soils, or soils where pH is high from excessive sodium. (Aabaco)

Luma-Plex: a concentrated liquid humic acid that acts as a chemical aerifier and organic input to eliminate compaction and flush salt out of the rootzone. (Aabaco)

Marine-Gro: an organic conditioner and stimulant that improves plant root structure and helps turf resist stress. (Agro-Tech 2000)

Basic suppliers...

For more information about a specific company's products, please circle the number on LM's Reader Service Card that corresponds with the number listed below:

Agro-Tech 2000 (#190)
Aimcor (#191)
Amereq (#192)
Aquatrols (#193)
Arctec (#194)
Back to Earth (#195)
Bonide (#196)
W.A. Cleary (#197)
Conrad Fafaro (#198)
Creative Curb (#199)
Dakota Peat (#200)
Doggett (#201)
Earthgreen (#202)
Earthworks (#203)
Emerald Isle (#204)
Evans Landscaping (#205)
Finn Co. (#206)
Floratine Products (#207)
Four Star Services (#208)
Jonathan Green (#209)
Green Pro Svcs. (#210)
Gro-Power (#211)
Growth Products (#212)
Harford Industrial (#213)
Humate Int'l. (#214)
Humus Products (#215)
Industrial Services (#216)
JaiTire (#217)
JRM Chemical (#218)
Kalo (#219)
Kurtz Brothers (#220)
Lesco (#221)
Master Turf (#222)
Michigan Peat (#223)
National Bark (#224)
Nature's Touch (#225)
Northwoods Organ. (#226)
Parkway Research (#227)
Partac Peat (#228)
Prism (#229)
PRS Materials (#230)
PSA (#231)
Roots/RGB (#232)
Sartec (#233)
Soil Seal (#234)
Stabilizer (#235)
Stockhausen (#236)
Sustane (#237)