

## BASIC ORGANIC PROGRAM



Stimulating and maintaining healthy biological activity is the key to organics. It's not complicated – simply avoid doing anything that hurts the life in the soil and choose only those inputs that benefit the life in the soil and that make sense from a horticultural standpoint.

1. Stop using all synthetic fertilizers, toxic pesticides and other chemicals that harm living organisms. All high-nitrogen products are bad and nitrogen-only products are the worse.
2. Build soil health with aeration and natural organic fertilizers and amendments.
3. Use native plants and well-adapted introductions, water carefully and make wise decisions.

**SOIL AMENDING** - Apply compost, rock materials such as lava sand, granite, basalt or other paramagnetic materials and dry molasses to all planting areas. Use products that introduce and/or stimulate beneficial microbes in the soil.

## MAINTENANCE

**FERTILIZING** - Broadcast organic fertilizer to the entire site 2-3 times per year at 20 lbs. per 1,000 sq. ft. Foliar feed all plants during the growing season, at least monthly with aerated compost tea or Garrett Juice Plus. High-nitrogen salt fertilizers and products that contain synthetic material must be eliminated. Bio-solid products should be avoided on food crops. Miracle-Gro, Peters, other soluble crystal-type products and Osmocote are not acceptable in an organic program.

**MULCHING** - Mulch bare soil around all shrubs, trees, ground covers and food crops with shredded native tree trimmings to protect the soil from sunlight, wind and rain, inhibit weed germination, decrease watering needs and mediate soil temperature. Other natural mulches can be used, but avoid Bermuda grass hay because of herbicide residue. Also avoid pine bark, cypress mulch and chemically dyed wood products. Do not pile mulch on the stems of plants.

**WATERING** - Water only as needed. The organic program will reduce the frequency and volume of water needed. Add a tablespoon of apple cider vinegar per gallon of water when watering spots. Use 1 ounce of liquid humate in acid soils. Garrett Juice can be used in either case. Be careful of drip irrigation systems because with those systems, it is difficult to avoid dry and water-logged spots. Watering from above as nature does is usually best.

**MOWING** - Mow turf as needed and mulch clippings into the lawn to return nutrients and organic matter to the soil. Put occasional excess clippings in the com-post pile. Don't ever let clippings leave the site. Do not use line trimmers around shrubs and trees. Buffalo grass lawns need less care than other grasses.

**WEEDING** - Hand pull large weeds and work on soil health for overall control. Mulch bare soil in beds. Avoid all synthetic herbicides including Roundup, 2, 4-D, MSMA, preemergents, broad-leaf treatments, soil sterilants and especially the SU (sulfonyleurea) herbicides such as Manage and Oust. Spray noxious weeds as needed with vinegar-based or fatty acid herbicides.

**PRUNING** - Do not "lift" or "gut" trees. Remove dead, diseased and conflicting limbs. Do not over prune. Do not make flush cuts. Leave the branch collars intact. Do not paint cuts.

**CONTROLLING INSECT PESTS** - In general, control insect pests by encouraging beneficial insects and microbes and spraying with compost tea or the Garrett Juice Plus mixture. Spray minor outbreaks with plant oil products including orange oil, garlic-pepper tea, and essential oils. Avoid all pyrethrum products, especially those containing piperonyl butoxide (PBO), petroleum distillates and other contaminants.

**CONTROLLING DISEASES** - Most diseases such as black spot, brown patch, powdery mildew and other fungal problems are controlled by prevention through soil improvement, and avoidance of high nitrogen fertilizers and proper watering. Outbreaks can be stopped with sprays

of potassium bicarbonate, cornmeal juice, diluted milk or the commercial product Plant Wash. Viruses are controlled with 3% hydrogen peroxide.

## PLANTING

**BED PREPARATION** - Scrape away existing grass and weeds; add compost, lava sand, organic fertilizer, expanded shale, cornmeal and dry molasses and till into the native soil. Excavation of natural soil and additional ingredients such as concrete sand, peat moss, foreign soil and pine bark should not be used. More compost is needed for shrubs and flowers than for groundcover. Add greensand to black and white soils and high-calcium lime to acid soils. Decomposed granite, rock phosphate and zeolite are effective for most all soils.

## BASIC PRODUCTS

There are four basic groups of materials needed for the organic program:

### Compost, Rock Materials, Sugars and Mulch.

#### COMPOST

Compost, nature's own living fertilizer, can be made at home or purchased ready-to-use. It can be started any time of the year in sun or shade and anything once living can go in the compost. Some common ingredients include grass clippings, tree trimmings, food scraps, bark, sawdust, rice hulls, weeds, nut hulls and animal manure. Build by mixing the ingredients together into a pile on the ground. The ideal mixture is around 80% vegetative matters and 20% animal waste, although any mix will compost and work fine. Oxygen is a critical component. Ingredients should be a mix of coarse and fine-textured material to promote air circulation through the pile. Turn the pile as time allows to speed up the process. Turning is not critical but important to have consistent uniform compost. Another critical component is water. A compost pile should be roughly the moisture of a squeezed-out sponge to help the living organisms thrive and work their magic. Compost is ready to use as a soil amendment when the ingredients are no longer identifiable. The color will be dark brown, the texture soft and crumbly, and the smell will be pleasant like the forest floor. Rough, unfinished compost can be used as topdressing mulch around all plantings. For piles that are not heating and composting too slowly, add dry molasses, green plant material or organic fertilizer.

#### ROCK MATERIALS

**Lava Sand:** Nature has maintained the mineral balance of soil through volcanic eruptions, glaciers movement and bed rock erosion. Gardeners, farmers and ranchers need to apply rock materials as well. Don't worry about pH. When a balance of natural materials are used, pH will move to an appropriate level. Additional volcanic rock is not needed in volcanic soils. Useful rock products include lava sand, basalt, zeolite, humate, rock phosphate, and other rock material different from the base rock on the property.

#### SUGARS

Sugars are used to stimulate the microbes in the soil. Some sugars are better than others. Here's a run down of some of the most common options:

**White Sugar:** Table sugar is okay especially if it is dirty and unusable for food, but there are much better choices. All sugars and sugary foods provide indirect fertility to soil and plants by accelerating biological activity.

**Dry Molasses:** Dry molasses isn't really dried molasses. It's actually a solid organic residue carrier that has been sprayed with liquid molasses. Soy is a common choice. It's an excellent carbon and carbohydrate source that stimulates beneficial microorganisms effectively. And it repels fire ants from properties in most cases. It can be used as a bed preparation ingredient or applied on the surface of soil. The usual rate is 20 lbs. per 1000 sq. ft.

**Liquid Molasses:** This sweet syrup that is a carbohydrate source used as a soil amendment to feed and stimulate microorganisms. It contains sulfur, potash, and many trace minerals. Molasses is the best liquid sugar for horticultural use because of its trace minerals and effectiveness. Blackstrap is hard to find, and it is the best molasses because of the sulfur and iron, but any kind of molasses will work. Molasses also has a nice side benefit. When it is used with compost tea and orange oil, it kills fire ants and other insect pests. By itself, molasses repels fire ants effectively.

Molasses is a good, quick source of energy for soil life and microbes in compost piles. Liquid molasses is used in sprays, and dry molasses is broadcast. Liquid molasses is an excellent foliar feeding material and can be mixed with other organic liquids. Use at 2-4 quarts/acre for soil application. For foliar application, use up to 1 quart per acre. Use 1 – 2 oz. per gallon of spray for small scale work. Liquid molasses can also be used to increase the life and effectiveness of

organic and biological pest control sprays such as Bt (*Bacillus thuringiensis*).

**Cornmeal:** This food product has many horticultural uses. Regular cornmeal from the grocery store has minor fertilizer and disease fighting properties. The Horticultural cornmeal is a more concentrated form. Horticultural cornmeal is either hominy (the outside edge of the corn kernel) or it can be whole cornmeal. Read the label to know for sure, but both are effective.

Many cornmeal products in the grocery store consist of the starchy endosperm (insides of the kernel). Dr. Joe McFarland and his staff at the A & M Research station in Stephenville, Texas discovered that cornmeal is effective at controlling fungal diseases on peanuts. I started playing with it and discovered that it is effective on brown patch in St. Augustine and damping off disease in seedlings. The usual rate is about 20 lbs. per 1,000 sq. ft. of surface area of soil. Cornmeal will help control diseases on photinia, Indian hawthorn, roses, fruit trees, turf and seed flats. Corn gluten meal is the protein part of the kernel and used as a weed and feed fertilizer. It also has some disease fighting properties.

## MULCH

Covering the bare soil around plants is critical and there are several mulch choices. The best mulch for any site is recycled plant material (leaves, twigs, spent plants, buds, bark, flowers and other plant debris) that grew on the property. That's the natural way it is done in the forest and on the prairie. Shredded native tree trimmings are the easiest to find and purchase. Third in line is shredded hardwood bark. Then there is a group that is not high on my list. I don't recommend cypress because it does not break down well. We want the mulch to break down. That's what creates the true natural food for feeding microbes and plant roots. It is also an environmental problem in the way it is harvested. Pine needles make good mulch, but it looks a little out of place when used on a property where no pines are growing. Lava gravel makes good mulch and has the extra benefit of keeping squirrels and cats out; looking harsher than organic mulches and not breaking down into humus are the negative points. I'm not at all a fan of shredded rubber products, dyed wood or pine bark. It's interesting that the most popular mulch material, pine bark, is not very good. First, it won't stay in place - it washes and blows away. When it does stay put, it breaks down into a mucky material that does not help plant growth. My favorite commercial mulch is a mixture of compost and shredded tree trimmings.

## FORMULAS

## GARLIC PEPPER TEA INSECT REPELLENT

In a blender with water, liquefy two bulbs of garlic and two hot peppers such as cayenne or habanera. Strain away the solids. Pour the garlic-pepper juice into a one gallon container. Fill the remaining volume with water to make one gallon of concentrate. Shake well before using and add 1/4 cup of the concentrate to each gallon of water in the sprayer. To make garlic tea, simply omit the pepper and add another bulb of garlic. For additional power, add one tablespoon of seaweed and molasses to each gallon. Always use plastic containers with loose fitting lids for storage.

## GARRETT JUICE

Mix the following per gallon of water: 1 cup of compost tea or liquid humate, 1 cup liquid seaweed, 1 oz. molasses and 1 ounce apple cider vinegar. To make a mild insect control product, add 1 oz. of citrus oil per gallon of spray. To make the fire ant killer, add 2 oz. of orange oil per gallon. When spraying the foliage of plants, don't use over 2 ounces of orange oil per gallon of spray. This mixture also works as a soil detox product if you are just starting your organic program. It is also an excellent soil drench and root stimulator.

## POTTING SOIL

Potting soil – as opposed to native soil, loam, dirt or landscaper's soil – is what should be used in pots - no matter what the crop. Potting soil should be light weight.

I do not recommend peat moss potting soils. Peat moss is anti-microbial. Microbes don't grow well in it. That's just the opposite of what we want. Peat moss is excellent for storing bulbs or shipping food or other perishable material that would otherwise decay.

Potting soil should not be sterile as some recommend but alive and dynamic. It should be light, loose, well aerated, fertile, full of microorganisms and have the ability to stimulate quick and sustained growth.

Interior plants and outdoor potted plants should be planted in a well-drained, organic potting soil like I recommend. My favorite basic ingredients are compost, coconut fiber and expanded shale.

My latest recommended formula is as follows:

30% Compost  
30% Coconut Fiber  
15% Decomposed granite  
15% Expanded Shale  
5% Alfalfa meal

4% Lava sand  
1% Greensand  
Beneficial microbes (bacteria and fungi)

Soil Mender makes my specific formula, but there are other "non-peat moss" potting soils on the market. Two others that we know of are Ladybug and Nature's Guide Bagman's Blend.

Some of the best fertilizers for interior plants include earthworm castings, kelp meal and coffee grounds. They are mild and odor free. Garrett Juice is also an excellent fertilizer for plants in containers.

#### **TREE GOOP**

Mix 1/3 of each in water and paint on trunks: diatomaceous earth, rock phosphate and manure compost. Paint onto cuts, borer holes or other injuries on trunks or limbs. Reapply if washed off by rain or irrigation.

### **ORGANIC ROSE PROGRAM**

Roses should only be grown organically since they are one of the best medicinal and culinary herbs in the world. When they are loaded with toxic pesticides and other chemicals, this use is gone, or at least, it should be. Drinking rose hip tea or using rose petals in teas or salads sprayed with synthetic poisons is a really bad idea. For best results with roses, here's the program:

#### **SELECTION**

Buy and plant well-adapted roses for your area. The old roses will have the largest and most vitamin C filled hips. *Rosa rugosa* roses have the most vitamin C. Some of my favorites are Ducher, Knockout, Homerun, Metabilis, and Kathy Road Pink.

#### **PLANTING**

Prepare beds by mixing the following into existing soil to form a raised bed: 6" compost, 1/2" lava sand, 1/2" expanded shale, 1/2" of decomposed granite, 30 lbs. zeolite and 20 lbs. of sul-po-mag per 1,000 sq. ft. Apply one of the mycorrhizal fungi products. Soak the bare roots or root ball in water with one tablespoon of Garrett Juice per gallon. Settle the soil around plants with water - no tamping.

#### **MULCHING**

After planting, cover all the soil in the beds with one inch of compost or earthworm castings followed by 2-3" of shredded native mulch. Do not pile the mulch up on the stems of the roses.

#### **WATERING**

If possible, save and use rainwater. If not, add one tablespoon of apple cider vinegar and 1 oz. Garrett Juice per gallon of water. If all that fails, just use tap water, but don't over water. Avoid using salty well water if possible.

#### **FEEDING SCHEDULE**

**Round #1** February 1-15: organic fertilizer @ 20 lbs. / 1,000 sq. ft., lava sand at 80 lbs. / 1,000 sq. ft. and horticultural cornmeal at 10 -20 lbs. / 1,000 sq. ft.

**Round #2** June 1-15: organic fertilizer @ 20 lbs. / 1,000 sq. ft., greensand @ 40 lbs. / 1,000 sq. ft. or rock phosphate at 30 lbs. / 1,000 sq. ft. if in acid soil areas.

**Round #3** September 15-30: Alfalfa meal or other organic fertilizer @ 20 lbs. / 1,000 sq. ft., sul-po-mag @ 20 lbs. / 1,000 sq. ft.

#### **PEST CONTROL**

Apply dry granulated garlic to the soil. For disease control in general, spray roses with garlic tea or Garrett Juice Plus and Plant Wash.

For insect pests, spray plant oil products, Garrett Juice, and Plant Wash. Dust if necessary with natural diatomaceous earth.

For thrips, apply beneficial nematodes to the soil in early spring or when foliage begins to grow.

### **ORGANIC PECAN & FRUIT TREE PROGRAM**

Pecan trees and most other fruit trees can be grown organically with great success. Pecan trees and other fruit trees should never have bare soil. The root zone should always be covered with mulches and/or native grasses and legumes. The trees should be planted high with natural organic techniques. Root flares should be easily visible.

#### **SOIL FEEDING SCHEDULE**

**Round #1 February 1-15:** Apply organic fertilizer @ 20 lbs. per 1,000 sq. ft., lava sand or other volcanic sand at 80 lbs. per 1,000 sq. ft., decomposed granite at 80 lbs. per 1,000 sq. ft., whole ground cornmeal at 20 lbs. per 1,000 sq. ft., dry molasses @ 20 lbs. per 1,000 sq. ft., and zeolite at 20 lbs. per 1,000 sq. ft.

**Round #2 June 1-15:** Organic fertilizer @ 10

lbs. per 1,000 sq. ft. and greensand @ 40-80 lbs. per 1,000 sq. ft. Use soft rock phosphate at the same rate if in acid soils.

**Round #3 September 15-30:** Organic fertilizer @ 10 lbs. per 1,000 sq. ft. and sul-po-mag @ 20 lbs. per 1,000 sq. ft. Clean wood charcoal can also be used. See Terra Petra on my website.

Notes: Once soil health has been achieved, round #3 can be omitted. Rock powders are optional after the first 3 years.

Large pecan orchards can use livestock manure or compost at 1-2 tons/acre per year along with establishing green manure cover crops. Lava sand and other rock powders can be applied any time of the year. Foliar feed with compost tea, liquid compost or Garrett Juice twice monthly.

#### **ALTERNATE PROGRAM**

**Round #1 Feb – Mar:** Organic fertilizer with mycorrhizal fungi per label directions.

**Round #2 June:** Zeolite laced with mycorrhizal fungi and bacteria or the products applied separately. Spray compost tea, liquid compost or Garrett Juice monthly.

#### **FRUIT AND NUT SPRAY PROGRAM**

Spray Garrett Juice or Garrett Juice Plus at least monthly. Add garlic pepper tea and/or Plant Wash if pest insects appear. These products can be used as preventatives if problems have occurred in the past.

#### **SPRAY\* SCHEDULE**

**1st spraying:** At pink bud

**2nd spraying:** After flowers have fallen. For best results spray every two weeks, but at least once a month.

**3rd spraying:** About June 15th (later in northern locations).

**4th spraying:** Last week in August.

\* Use additional sprayings as time and budget allow.

#### **PRUNING**

Very little pruning is needed or recommended. Maintain cover crops and/or natural mulch under the trees year round. Never cultivate the soil under pecan and fruit trees.

#### **INSECT RELEASE**

**Trichogramma wasps:** Weekly releases of 10,000 - 20,000 eggs per acre or residential lot starting at bud break for 3 weeks.

**Green lacewings:** Release at 4,000 eggs per acre or residential lot weekly for one month.

**Ladybugs:** Release 1,500 - 2,000 adult beetles per 1,000 sq. ft. at the first sign of shiny honeydew on foliage.

## **SICK TREE TREATMENT**

Trees become infested with insect pests and diseases because they are in stress and sick. Mother Nature then sends in the clean up crews. Insects and pathogens are just doing their job - trying to take out the unfit plants. Most plant sickness is environmental - too much water, not enough water, too much fertilizer, wrong kind of fertilizer, toxic chemical pesticides, compaction of soil, grade changes, ill-adapted plant varieties and/or over planting single plant species and creating monocultures, as was done with American elms in the Northwest and the red oak/live oak communities in certain parts of the South.

My tree health plan is simple. Keep trees in a stress free condition so their immune systems can resist insect pests and diseases. For example - it has been noticed by many farmers and ranchers that oak wilt doesn't bother some trees - especially those that have properly exposed root flares, and those where the natural habitat under trees has been maintained. The Sick Tree Treatment is not just good for oak wilt, but for any other tree problem as well. Here is the updated version and how it works:  
Sick Tree Treatment

#### **Step 1: Stop Using High Nitrogen Fertilizers and Toxic Chemical Pesticides**

Toxic chemical pesticides kill beneficial nematodes, other helpful microbes, good insects, and also control the pest insects poorly. Synthetic fertilizers are unbalanced, harsh, high in salt, often contaminated and destructive to the chemistry, the physics and the life in the soil. They also feed plants poorly and contaminate the environment.

#### **Step 2: Remove Excess Soil from the Root Flare**

A very high percentage of trees are too deep in their containers and also have been planted too low or have had fill soil or eroded soil added on top of the root flares. Soil on top of the root flare reduces oxygen availability and leads to circling and girdling roots. Soil, or even heavy mulch on trunks, keeps the bark constantly moist which can rot or girdle trees. Ideally, excess soil and circling and girdling roots should be removed before planting. Removing soil from the root flares of existing trees should be done professionally with a tool called the Air Spade.

Homeowners can do the work by hand with a stiff broom or brush. Gentle water and a shop-vac can be used if done very carefully. Vines and ground covers should also be kept off tree trunks. They should actually be pruned back away from the flares, at least on an annual basis.

### Step 3: Aerate the Root Zone Heavily

Don't rip, till or plow the soil. That destroys all the feeder roots. Punch holes (with turning forks, core aerators or agriculture devices such as the Air-Way) heavily throughout the root zone. Liquid injectors and the Air Spade can also be used. Start between the drip line and the trunk and go far out beyond the drip line. Holes 6-8" deep are ideal, but any depth is beneficial.

### Step 4: Apply Organic Amendments

Apply zeolite 40-80 lbs. per 1000 sq. ft., greensand at about 40-80 lbs. per 1,000 sq. ft., lava sand at about 80-120 lbs. per 1,000 sq. ft., horticultural cornmeal at about 20-30 lbs. per 1,000 sq. ft. and dry molasses at about 10-20 lbs. per 1,000 sq. ft. Cornmeal is a natural disease fighter and molasses is a carbohydrate source to feed the microbes in the soil. Apply a 1" layer of compost followed by a 3" layer of shredded native tree trimmings; however, do not pile mulch up on the root flare or the trunk. Smaller amounts of these materials can be used where budget restrictions exist. Also, any rock dust material different than the base rock on the site will help.

### Step 5: Spray Trees and Soil

Spray the ground, trunks, limbs, twigs and foliage of trees with compost tea or the entire Garrett Juice Plus mixture. Do this monthly or more often if possible. For large-scale farms and ranches, a one-time spraying is beneficial if the budget doesn't allow ongoing sprays. Adding garlic oil tea or cornmeal juice to the spray is also beneficial for disease control while the tree is in trouble. Cornmeal Juice is a natural fungal control that is made by soaking horticultural or whole ground cornmeal in water at 1 cup per 5 gallons of water. Screen out the solids and spray without further dilution. Cornmeal Juice can be mixed with compost tea, Garrett Juice or any other natural foliar feeding spray. It can also be used as a soil drench for the control of soil borne diseases. Dry granulated garlic can also be used on the soil in the root zone at about 1-2 lbs. per 1000 sq. ft. for additional disease control. Adding Plant Wash to the spray is also helpful against insect pests and disease pathogens.

During drought conditions, adding soil moisture is a critical component.

## ORGANIC INFORMATION

WEBSITE: [www.DirtDoctor.com](http://www.DirtDoctor.com)

**DIRT DOCTOR LIBRARY:** Thousands of topics on natural organic gardening products, techniques and other information.

**NATURAL ORGANIC STORE:** Find the products that are the latest technology, most effective and hardest to find.

**ORGANIC BUSINESS DIRECTORY:** Up to date listing of top organic retailers across the country.

**ORGANIC FORUMS:** Read, ask questions and get helpful advice from other people who care about natural, organic gardening and living.

**NEWSLETTER:** Dirt Doctor Weekly Newsletter – receive free by sending your email to [info@dirtdoctor.com](mailto:info@dirtdoctor.com).

**DIRT:** A bi-monthly magazine full of helpful articles, organic information, the monthly gardening calendar, plant of the month, kid's projects and more.

**GROUND CREW MEMBERSHIP:** Includes great videos, seminars, the DIRT magazine, value coupons, interactive forums and much more.

**BOOKS:** Howard has published thirteen books. *Texas Gardening - the Natural Way* is the best selling book ever published by UT Press. Other books by Howard—*Dirt Doctor's Guide to Organic Gardening*; *Dear Dirt Doctor*; *The Organic Manual*.

**NEWSPAPER COLUMN:** "The Natural Way" is in Friday's *House & Garden* Section of the *Dallas Morning News*.

**TEXAS ORGANIC RESEARCH CENTER:** TORC's mission is to improve our health and thus our quality of life by making natural organic management programs the new mainstream.

**E-MAIL:** [info@DirtDoctor.com](mailto:info@DirtDoctor.com)



**RADIO:** Howard Garrett Organic Talk Radio  
Listen live on [DirtDoctor.com](http://DirtDoctor.com)

**Dallas/Fort Worth - KSKY 660AM**

**Saturday** 11:00am – Noon

**Sunday** 8:00am – 11:00 am --syndicated across the nation. See the website for a station near you.

Phone number during the show – **1-866-444-DIRT**.

