
By Steve Diver, NCAT Agriculture Specialist
National Center for Appropriate Technology - Arkansas office
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A publication of ATTRA - National Sustainable Agriculture Information Service
(Providing technical assistance to organic and sustainable farmers in all fifty states.)

Organic farmers and gardeners use natural and organic soil amendments that are not commonly found in garden centers and farmers cooperatives.

This is an informal list of suppliers and dealers in the Deep South region of Mississippi, Louisiana, and Alabama who carry organic fertilizers, rock minerals, composts, and pelletized poultry litter. Many of these dealers also carry natural pest control products.

The second part of this resource list features a proportionally-mixed bucket organic fertilizer recipe, modern concepts in organic soil fertility and crop health, and a seven-part "how-to" approach to organic fertility. The last sections contain supplemental literature and web resources on organic fertilizers, cover crops, composts, biodynamic supplements, and microbe teas.

Note: To gain quick access to the Web sites listed below, simply "cut and paste" a Web link from this e-document and drop it into your Web browser's address bar, then "click" to open.

Examples of Organic Fertilizers, Rock Minerals, Soil Amendments, and Biological Amendments:

Rock Minerals and Rock Dusts:
Soft rock phosphate, hard rock phosphate, sul-po-mag, K-Mag, greensand, rock dust, granite meal, carbonatite, limestone, gypsum

Organic Fertilizers:
Feather meal, cottonseed meal, alfalfa meal, bat guano, kelp meal, fish meal, blood meal, bone meal, chilean nitrate, crustacean meal, blended organic fertilizers, fortified compost blends

Liquid Organic Fertilizers and Biostimulants:
Fish emulsion, seaweed extracts, soluble vermicompost granules, fermented extracts and biologicals (Nitron A-35, Efficient Microbes), and biostimulants (humic acids, seaweed)
Compost, Vermicompost, and Pelletized Poultry Litter:

Municipal yardwaste compost, humified compost, spent mushroom waste, vermicompost, pelletized poultry litter

Humic Substances:

Granular humates, humic acids, soluble humates

Microbial Inoculants and Biological Amendments:

Microbe teas, compost teas, liquid compost extracts, archaea bacteria, Effective Microorganisms, mycorrhizal fungal inoculants

Part 1

Suppliers of Organic Fertilizers, Composts, Vermicomposts, and Pelletized Poultry Litter

1.1 Organic Fertilizer Dealers

Agreaux Organics
P.O. Box 30
792 Ferguson Mill Road
Monticello, MS 39654
877-378-5407 Toll-Free
60-587-0027 Local
601-587-9274 Fax
info@agreauxorganics.com
http://www.agreauxorganics.com

Manufacturer of pelletized poultry litter fortified and blended with humates and organic fertilizers such as alfalfa meal (6-2-4, 5-5-5, 2-10-10, 3-3-3, 4-2-4). Available in 20- and 50-lb bags, bulk, and tote bag volumes. Agreaux Organics also carries a soil minerals product.

AgriGulf
[Contact: Ron Cox]
52 Cable Bridge Rd.
Perkinston, MS 39573
601-928-5837
Agrigulf@bellsouth.net
http://www.agrigulf.com

Manufacturer of ground and dried crustacean meal (combination of crab and shrimp meal) with a 4-2-1 analysis (another 4% N is slowly-released with breakdown of shell). In addition, the product has chitin (which functions as a natural nematicide) and micronutrients. Their bagging line was flooded
during Hurricane Katrina, so the crustacean meal is only available in bulk and 1,000-lb and 2,000-lb tote bags.

Agro-K Corp
[Contact: Gerd Oppenheim]
P.O. Box 267
Norwood, LA 70761
504-866-6551
trudyo@gs.net

Dealer of organic fertilizers, minerals, and biological inoculants from Agro-K in Minnesota. The Agro-K product line includes Symbex (fermentation by-product with minerals and microbial food sources), Sympray (seaweed with liquid calcium), Hytech Foliar (seaweed and fish meal), Symcoat (liquid trace elements), Vigor-Cal (liquid calcium), and related products.

Fertrell Dealerships:

Newton County Farm Supply
406 Scanlan Street
Newton, MS  39345
601-683-3911
http://www.fertrell.com

Gotreaux Family Farm
205 Facile Rd
Scott, LA  70583
337-873-0383
http://www.fertrell.com

Red Root Herb & Vegetable Garden
[Contact: Gary Weil]
9304 Hwy 29 N.
Banks, AL  36005
334-243-4072

Fertrell, based in Bainbridge, PA, is the oldest organic fertilizer company in the U.S. Fertrell dealers in Alabama, Mississippi, and Louisiana carry a complete line of Fertrell products, including pre-blended and pelletized organic fertilizers, plant-meals, animal-meals, marine products, mined minerals, trace elements, and animal feeds.

Circle One
18744 Titus Rd.
Hudson, FL 34667
877-359-6753  Toll-Free
727-697-3661  Local
727-697-3868  Fax
inquiry@circle-one.com
http://www.circle-one.com

Circle One is a prominent and long-established manufacturer of organic fertilizers, biostimulants, and natural pest control products in the Southeastern U.S.

Nature Safe Natural & Organic Fertilizers
4221 Alexandria Pike
Nature Safe manufactures a line of blended and fortified organic fertilizers (5-6-6, 8-5-5, 10-2-8, 12-2-0) comprised of plant- and animal-meals, humates, sugars, and yeasts. See the Nature Safe web page for a list of distributors in the South.

Nitron Industries
[Contact: Frank Finger]
479-587-1777 (Local)
800-835-0123 (Mail Order)
ffinger@nitron.com
http://www.nitron.com
http://www.gardeniq.com

Nitron is the oldest dealer of organic fertilizer products in Arkansas. They manufacture Nitron A-35, a fermented microbial biocatalyst, as well as liquid organic fertilizers and biostimulants such as "Tomato Booster." Nitron carries a broad range of bagged plant- and animal-meal organic fertilizers as well as the Bradfield Organics line of blended organic fertilizers.

Bradfield Organics
Feed Solutions
P.O. Box 66812
St. Louis, MO  63166-6812
BradfieldOrganics@landolakes.com
800-551-9564
http://www.bradfieldorganics.com

Bradfield Organics is a brand of blended organic fertilizers in 25-lb bags with five products geared to lawns, tomatoes, pasture and farm, and vegetables. In addition, corn gluten is available as a source of nitrogen and natural weed control. The product is nationally distributed through Purina Feed dealers (animal feeds and farm supplies) and Sustainable Growth, Inc. (www.sustainablegrowth.com).

1.2 Directories of Organic Fertilizers and Rock Dusts

Sources of Organic Fertilizers and Amendments (ATTRA)
ATTRA - National Sustainable Agriculture Information Service
http://attra.ncat.org/attra-pub/orgfert.html

ATTRA is the national sustainable agriculture information service providing technical assistance to organic and sustainable farmers in all fifty states. The database on "Sources of Organic Fertilizers and Amendments" contains over 145 dealers and suppliers carrying bulk organic fertilizers, biological inoculants, and specialty products. The products are organized by category of fertilizer material.
Organic Materials Review Institute (OMRI)
http://www.omri.org

The OMRI Products List is an extensive directory of soil fertility products approved for use in certified organic farming under the National Organic Program. The crops section is divided into three large files that contain Generic Materials, Brand Name, and Suppliers. The products are organized by category of fertilizer material. Products that indicate "OMRI Listed" have been officially approved to bear the OMRI label.

Remineralize the Earth (RME)
http://www.remineralize.org

Remineralize the Earth promotes the use of rock dusts in agriculture. Rock dusts contain a broad spectrum of secondary, trace, and rare earth elements in low concentration. The RME web site contains a comprehensive listing of suppliers of rock dusts and mined "broad spectrum" minerals.

2.0 Suppliers of Compost, Mushroom Compost, and Vermicompost

Currie's Organic Poultry Compost
Larry Currie
Route 2, Box 681
Forest, MS 39074
601-536-3368
scurrie@hughes.net

Located off Hwy 35, south of Forest, MS. Larry Currie produces compost from poultry litter and sawdust and will ship up to 100 miles in distance.

3.0 Pelletized Poultry Litter

Agreaux Organics
P.O. Box 30
792 Ferguson Mill Road
Monticello, MS 39654
877-378-5407 Toll-Free
60-587-0027 Local
601-587-9274 Fax
info@agreauxorganics.com
http://www.agreauxorganics.com

Manufacturer of pelletized poultry litter fortified and blended with humates and organic fertilizers such as alfalfa meal (6-2-4, 5-5-5, 2-10-10, 3-3-3, 4-2-4). Available in 20- and 50-lb bags, bulk, and tote bag volumes. Agreaux Organics also carries a soil minerals product. Several products are OMRI Listed.

AG-Org
[Contact: Richard Kuper]
4906 S. Hwy 252
Charleston, AR 72933
479-462-4880
richard.kuper@gmail.com
http://www.ag-org.com
AgOrg produces a pelletized poultry litter in Ozark, AR (Northwest Arkansas), but their headquarters is located near Houston, Texas. Product is available in 40-lb bags, bulk, or 1-ton tote bags. Bryan Hostick with Poultry Litter Solutions in Oklahoma (918-231-7200) is a major distributor for the South.

Organic Growing Systems, Inc.
3012 Farrell Road
Houston, TX 77005
800-979-6474
281-821-9959 Fax
ogsi@sbcglobal.net
http://www.organicgrowingsystems.com

Distributor of pelletized poultry litter in 3-3-3 and 4-2-2, available in 40-lb bags and 1-ton tote bags. Several products are OMRI Listed.

Perdue AgriRecycle
http://www.perdueagrirecycle.com

MicroStart-60 is an OMRI Listed pelletized poultry litter. Perdue AgriRecycle is headquartered in Delaware but maintains a wholesale warehouse location in Augusta, AR, (near Bald Knob) in Woodruff County, available by the ton in bulk.

Part 2

Organic Fertilizer Recipes, How-To Methods, and Technical Resources on Soil Fertility, Cover Crops, and Composts

4.0 Practical Organic Fertilizer Recipes

4.1 Nitron's "Great Tomato Formula"

1 part of each, mixed together in a bucket. Place a heaping handful in bottom of planting hole and stir into soil.

    Alfalfa meal
    Fish meal
    Nature Meal for Tomatoes
    Limestone
    Soft Rock Phosphate

4.2 Steve Diver's "Bucket Organic Fertilizer Blend"

Ideally, gardeners will first amend the soil with compost during bed preparation to build soil organic matter and enhance soil biology, soil tilth, and soil moisture holding capacity.

The following organic fertilizer recipe can ensure good soil fertility in the absence of compost, or it can be used as a fertility boost while viewing
compost primarily for its soil conditioning benefits.

Use a 4" pot for each part. Mix together in bucket, spread and mix into soil per 100 square foot of growing bed.

4 parts by volume, Feather Meal (or Cottonseed Meal)
4 parts by volume, Fish Meal
2 parts by volume, Vermicompost
2 parts by volume, Rock Dust
1 part by volume, Alfalfa Meal (or Kelp Meal)
1 part by volume, Soft Rock Phosphate
1 part by volume, Limestone

[This blend has performed superbly in several Ozark gardens in 2006]

4.3 Biodynamic Supplement

Biodynamic (BD) farming uses fermented plant and animal parts (called BD preparations) to facilitate biological and dynamic-energetic processes in soils and crops and to enhance humus formation, plant health, and food nutrition.

Add the following to the "bucket organic fertilizer blend":

Add a big pinch of Barrel Compost (BC), also known as Cow Patty Pit (CPP)
Add a big handful of Biodynamic Compost

Available in 1-lb (BC/CPP) and 5-lb bags (BD Compost) through Natural Science Organics in New York

Natural Science Organics
http://www.naturalscienceorganics.com

Homeopathic BD sprays are easy to use. Apply to beds after amending soil and raking smooth, and then again when plants are growing. Homeopathic BD sprays are available through GW Agriculture in Texas.

GW Agriculture
http://gwagriculture.com

Traditional BD preparations include Horn Manure (BD 500) sprayed on soils during tillage and bed preparation and Horn Silica (BD 501) sprayed on foliage during the growing season. The BD Compost Preparations (BD 502-507) are inserted into compost piles. Josephine Porter Institute (JPI) in Virginia is the principal source for traditional BD preparations in the U.S.

Josephine Porter Institute for Applied Biodynamics, Inc.
http://www.jpibiodynamics.org

5.0 Steve Solomon's "Complete Organic Fertilizer" and Resources on William Albrecht

The following notes and reference material provide historical background to the genesis of:
proportionally-mixed organic fertilizer recipes (such as 4.2 above),
• concepts and practices from Dr. William Albrecht (University of Missouri),
• the importance of blending minerals and organic amendments together,
• the importance of humus,
• the importance of biological activity in soils,
• and the influence of soil fertility on crop health and nutritional quality of foods.

5.1 Steve Solomon's book

Organic Gardener's Composting
Chapter Eight, Maintaining Soil Humus
by Steve Solomon
In: Soil and Health Library
http://www.soilandhealth.org/03sov/0302hsted/030202/03020208.html
Index to Chapter One thru Chapter Nine, plus Bibliography
http://www.soilandhealth.org/03sov/0302hsted/030202/03020201.html

See Box:
"Making and Using Complete Organic Fertilizer"

Use any pot or coffee can for the portion size. Mix together in bucket, spread and mix into soil about one gallon per each 100 square feet of growing bed or 50 feet or row. Can also be used as a band fertilizer in row crops.

4 parts by volume, seed meals (nitrogen based)
1 part   by volume, rock phosphate
1 part   by volume, limestone
0.5 part  by volume, kelp meal

[See variations in the leaflet below from Kris Johnson]

5.2 Kris Johnson's Collection on Steve Solomon & William Albrecht

Complete Organic Fertilizer
_____ 2-page summary of Steve Solomon's recipe for an Albrecht-minded organic fertilizer blend

Mercy View Meadows
-----The Web site of Bill & Kris Johnson-----

Also see:

Gardening for Maximum Nutrition

Albrecht Principles
http://home.woh.rr.com/billkrisjohnson/Garden/AlbrechtPrinciples.htm

How to Read Standard Soil Tests
(based on information from Logan Labs)
http://home.woh.rr.com/billkrisjohnson/Garden/LoganLabsStandardSoilTestRT.rtf
Producing High Brix Plants
As explained by John Marler of Perfect Blend
http://home.woh.rr.com/billkrisjohnson/Garden/HiBrix.htm

5.3 Papers and Newsletters from Gary Kline with Black Lake Organics

Gary L. Kline with Black Lake Organic Nursery (BLO) in Olympia, WA, has several web page downloads that piece together ideas from Dr. William Albrecht and Steve Solomon into the organic fertilizer blend approach he calls "Mineral-Augmented-Organic"; i.e., MOA.

The BLO web page features a series of Newsletter and Seminar presentation downloads that I've found to be a great read, with background notes and references on theories and practices on organic soil management and humus development, paying special attention to minerals.

See:

Black Lake Organics: Newsletters and Presentations
http://www.blacklakeorganic.com/aboutus.html

- 1998 BLO Newsletter
- 1999 BLO Newsletter
- 2001 BLO Newsletter
- 2003 BLO Newsletter - "The Soil Fertility Connection To Nutrition And Heath"
- Practical Nutrient Management and Its Implication for Nearly Everything
- Soil Fertility and Human Nutrition Earth Day 2004 Panel Discussion
- 2005 January - Why Organic Is Not Enough

Of special interest is Gary Kline's summary on organic fertilizer blends from Steve Solomon and Carl Eliot, two of the leading authors on organic gardening in the Pacific Northwest. Kline's summary is found in the 2003 BLO Newsletter - "The Soil Fertility Connection To Nutrition And Heath", starting on page 20.... with the notes and recipes on page 24-25. See:

Vegan's Dream Fertilizer Recipe
Steve Solomon's Not-So-Secret Organic Fertilizer Formula

The relationship between soil fertility and food nutrition is critical. These papers from Gary Kline are an obscure but helpful summary on soil fertility and human nutrition, based on concepts and practices of William Albrecht, Steve Solomon, and others.

6.1 Basic Approaches to Soil Fertility

The central themes of organic soil fertility are based on well established practices of "humus management," "feed the soil," "proper tillage", "keep the soil covered", and "remineralize the soil." These can be supplemented with modern approaches to mineral balancing, microbial bioaugmentation, and foliar fertilization.

Soil quality or "soil health" results from a balance between all three soil
components: soil biology and the soil foodweb, soil physical structure and soil tilth, and soil chemistry and mineral nutrition.

Soil organic matter (SOM) is part of each soil component and can be viewed as the binding thread that ties them together. SOM is maintained and improved through "organic matter management", which can also also called "humus management" or "humus farming".

6.2 Modern Concept of Organic Soil Fertility and Crop Health

1. Feed the soil (with organic matter, compost, cover crops)
2. Provide a balance of minerals from rock powders (Ca, P, K, Mg, S, and micros)
3. Provide a diversity of trace and rare earth elements (rock dusts and sea solids)
4. Microbial bioaugmentation of root and leaf zones (microbe teas and inoculants)

Rock dusts (trace elements and rare earth elements) and fully mineralized soils (rock minerals, especially paying attention to calcium and phosphorus) are an important contribution to complete food nutrition.

Soil biology practices (composts, cover crops, and microbe teas) help facilitate the bioavailability of mineral elements; i.e. "microbially enhanced nutrient delivery". Soil biology mechanisms underly every aspect of soil tilth, soil humus formation, soil water holding capacity, soil fertility, and soil disease suppression.

6.3 Seven-Step Approach to Organic Soil Fertility

This is the seven-step approach to organic soil fertility that I presented to the Student Organic Farm Club at University of Arkansas in April 2006.

Feed the Soil = Three Pillars of Organic Farming Fertility
1. Cover Crops and Crop Rotations
2. Compost
3. Rock Minerals and Rock Dusts

Fertilize the Crop
5. Sidedress or Fertigate (with Nitrogen source)

Supplemental Fertility and Biological Inoculation
6. Foliar fertilization
7. Bioaugmentation (with Biological Inoculants and Microbe Teas)

[Refer to Section 4.2 for the Bucket Organic Fertilizer Blend recipe]

7.1 Cover Crops for the South

Cool-Season Winter Legumes
- Crimson Clover
- Subterranean Clover
- Austrian Winter Pea
- Bigflower Vetch / Hairy Vetch
- Berseem Clover
- Balansa Clover

Cool-Season Winter Cereals and Broadleaves
Annual Ryegrass
Winter Rye
Winter Wheat
Rapeseed
Oilseed Radish

Warm-Season Summer Legumes and Broadleaves
- Buckwheat
- Cowpeas, viny type
- Soybeans, viny type
- Sunn hemp

Warm-Season Summer Grasses and Cereals
- Sorghum-Sudan Grass
- Japanese Millet
- Pearl Millet

7.2 Resources on Cover Crops

The following resource guides point to a wealth of books, research reports, and Web-based documents on cover crops and their use in cropping systems. Seed sources are listed in the SAN handbook, "Managing Cover Crops Profitably, 2nd Edition."

Overview of Cover Crops and Green Manures
ATTRA - National Sustainable Agriculture Information Service

Resource Guide to Organic & Sustainable Vegetable Production
Section 3.0: Soil Management and Cover Crops
ATTRA - National Sustainable Agriculture Information Service

Managing Cover Crops Profitably, 2nd Edition
Sustainable Agriculture Network
http://www.sare.org/publications/covercrops.htm

8.1 Compost Application Rates

- Low: 3-5 tons per acre
- Medium: 5-10 tons per acre
- High: 10-20 tons per acre

8.2 Resources on Composting, Compost Use, Compost Benefits

Farm-Scale Composting Resource List
ATTRA - National Sustainable Agriculture Information Service

[Market-farming] Alfalfa pellets for leaf-based compost bins
Wed May 25 2005

9.0 Soil Fertility Resources
10.0 Microbe Teas for Microbial Bioaugmentation

The term "microbe teas" reflects a broad category of farm-made compost teas and liquid compost extracts as well as beneficial indigenous microorganism cultures known as IMO in Asia. But "microbe teas" can also include purchased biological inoculants.

A fundamental principle of soil biology and humus farming is that Number (higher populations) and Diversity (greater complexity) of microbial species drives soil functions, including fertility.

Microbe teas have become a standard tool in modern organic farming to inoculate and bioaugment soil and crop fertility programs.

Graeme Sait with Nutri-Tech Solutions coined the term "microbially-enhanced nutrient delivery", or MEND. It states "The higher the number and diversity of micro-organisms living on the leaf-zone or root-zone, the more efficient the utilization of applied nutrients".

10.1 Effective Microorganisms (EM)

Effective Microorganisms, the microbial inoculant developed by Dr. Teruo Higa in Japan, is available from two manufacturers in the United States: Sustainable Community Development in Missouri and EM America in Texas.

Sustainable Community Development
http://www.scdworld.com

EM America
http://www.emamerica.com

10.2 Compost Teas (ACT)

Aerated compost tea is a compost extract that has been aerated and stimulated with microbial food sources for 12 to 24 hours. The ATTRA publication below provides an introduction to this technology with references and resources.

Notes on Compost Teas
ATTRA - National Sustainable Agriculture Information Service
http://www.attra.org/attra-pub/compost-tea-notes.html

10.3 Nature's Own Microbe Tea

T&J Enterprises sells the "Natures Own Growing System Microbe
Tea Brewing Kit”, which contains a blend of pre-packed beneficial microbes and a simple microbial aerator in a bucket kit. It is a simple and effective alternative to compost tea brewing.

T&J Enterprises
http://www.tandjenterprises.com

11.0 Sustainable Agriculture Resources from Mississippi State University

Farmers and gardeners can rely on standard recommendations from land-grant universities for establishment of cover crops (e.g., forage species, seeding rates, and establishment dates), management of cover crops and crop rotations, and related ecological soil management procedures that are specific to their region.

Likewise, land-grant universities are an excellent source for agrometerological data such as the last frost date in the Spring and first frost date in the Fall.

Cover Crops, P1552
http://msucares.com/pubs/publications/p1552.htm

Starting Vegetable Transplants, P1995

Table 3. Last frost dates for spring planting in Mississippi

- Upper Delta - North Central - Northeast - Lower Delta - Central
- East Central - Southwest - South Central - Southeast - Coastal

Forage Species, Varieties, Planting Dates, and Rates, IS1168
http://msucares.com/pubs/infosheets/is1168.htm

Forage: Cool Season Legumes, IS910
http://msucares.com/pubs/infosheets/is0910.htm

Inoculating Forage Legumes, IS83
http://msucares.com/pubs/infosheets/is1083.htm

Forage: Bigbee Berseem Clover, IS1306
http://msucares.com/pubs/infosheets/is1306.htm

Planting Methods and Seeding Rates for Small Grain Crops, P2401

Interpreting a Mississippi St. Univ. Soil Test Report, IS346
http://msucares.com/pubs/infosheets/is0346ex.pdf

Soil pH and Fertilizers, IS372
http://msucares.com/pubs/infosheets/is0372.pdf

Rate of Application per 100 square feet

Interpreting Soil Testing Laboratory Results for Vegetable Crops, IS1584
http://msucares.com/pubs/infosheets/is1584.htm

Organic Vegetable IPM Guide, P2036

Table 1. Nutrient value of some organic fertilizer materials
Table 4. Vegetable varieties that have shown some tolerance to specific pests

12.0 Sustainable Agriculture Resources from Louisiana State University

Tons to Teaspoons - How to Convert Rates of Fertilizer Per Acre to Amounts
for Small Areas
soil_testing_lab/faq/Fertilizer+Conversion+Table+for+Small+Area.htm

13.0 Sustainable Agriculture Resources from University of Georgia

How to Convert an Inorganic Fertilizer Recommendation to an Organic One
http://pubs.caes.uga.edu/caespubs/pubcd/C853.htm

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ATTRA - National Sustainable Agriculture Information Service
www.attra.ncat.org
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479-442-9824 (local)
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Last Revised: January 11, 2007
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