The World of Perfect Blend

Advanced Technology for the Organic Grower

PERFECT ORGANICS® BLEND

THE STORY OF PERFECT BLEND BIOTIC FERTILIZERS

Perfect Blend has an extraordinary history. It took decades of development and repeated failure before the Perfect Blend process finally became a commercially viable program. The research that ultimately led to development of Perfect Blend fertilizers started with a simple, clear vision. Those working on the project initially believed that chemistry alone could change raw manure from an unpredictable, unreliable nutrient that was often detrimental to growers' fields into a high-quality fertilizer. The transformation of raw manure into a valuable fertilizer had eluded researchers for decades. Like many visions, this one soon expanded, as those working on the Perfect Blend formulations realized the formulations had to accomplish not only the chemical transformation but also meet very specific biological needs. Unless the chemical transformation included a focus on meeting the needs of soil microbes, the transformation by itself was useless. The researchers working on Perfect Blend realized that achieving the revised goals and vision of Perfect Blend would require the melding of two separate science disciplines, chemistry and microbiology. To further complicate this already complicated agenda, the researchers realized that in addition to the two sciences, an understanding of high-technology process engineering would be required to give birth to the Perfect Blend program, because extremely careful processing was required to manufacture an effective, pathogen-free product. It was this combination of three disciplines that resulted in the Perfect Blend fertilizer program that many now recognize as the breakthrough soil fertility technology of this century.

ONE TON OF PERFECT BLEND BIOTIC FERTILIZERS IS EQUAL TO THE FOLLOWING AMOUNTS OF APPLIED MANURE:

15 tons of manure Grade 0 – Pen-collected bovine manure – weather exposed
12 tons of manure Grade 1 – Litter-grade poultry manure – no turn
10 tons of manure Grade 2 – Turned poultry manure – apparent shavings
8 tons of manure Grade 3 – Turned poultry manure – no shavings
6 tons of manure Grade 4 – Enclosed pile storage – no turn, no shavings
4 tons of manure Grade 5 – Dehydrated poultry pellets – 33% shavings
3 tons of manure Grade 6 – Dehydrated poultry pellets – no shavings

Notes:

1. Manure equivalents based on primary, secondary, and trace mineral contents.

2. Presence of active bacteria in manure, age, and weather exposure will increase the amount of manure needed to equal a ton of Perfect Blend biotic fertilizer.

3. Presence or absence of carbon-loading materials such as shavings or litter will degrade manure performance by tending to immobilize contained
nitrogen.

4. Once dehydrated poultry manure is rehydrated, it assumes the same labile characteristics of ordinary manure.

Perfect Blend application rates for sustainable agriculture to replace and remediate exhausted chelated minerals:

Multiple rotation cultivation:
1 ½ - 2 Ton per acre

Broadcast applications: 1 ton per acre
Side-band or top-band applications:
.5 ton per acre

Hand placement – orchards:
1 pound per 1-inch tree diameter

WHY SUCCESSFUL ORGANIC GROWERS CHOOSE PERFECT BLEND BIOTIC FERTILIZERS

Successful organic growers who choose Perfect Blend realize that to grow a superior crop they must concern themselves with growing two crops. Their first crop is a healthy crop of soil microbes. Their second crop is the actual crop field they will harvest and sell for a profit.

The first crop of healthy soil microbes will establish and set the nutrition levels in the soil. The second crop requires these nutrition levels to produce a crop that achieves its full genetic potential. During its manufacture, Perfect Blend is carefully formulated to provide soil microbes with a full range of primary, secondary, and trace minerals at the correct pH level that is most advantageous to soil microbes. Perfect Blend contains chelated minerals. These are minerals that have already bonded on a molecular level with carbon atoms. As a result, the nutritional components of Perfect Blend are in an ionic form that is immediately usable by both plants and microbes. These unique features make Perfect Blend a breakthrough concept in soil fertility.

The biotic fertilizers built by Perfect Blend are Complex Nutrition Enabling Fertilizers, or CNEF (pronounced See–NEFF). Soil microbes have an amazing ability to reproduce in very high numbers when given correct nutrition. CNEF provides microbes with nutrition formulated to build very large microbial populations. When they die, CNEF-fed microbes provide large amounts of nitrogen and other complex secondary and trace nutrients to the soil. The reason is that the microbes are mostly protein, which contains about 14% nitrogen and a full range of other important nutrients.

THE UNIQUE ADVANTAGES OF PERFECT BLEND BIOTIC FERTILIZERS

Complete Biotic Nutrition

Perfect Blend biotic formulations are nutritionally complete and nutritionally balanced. Perfect Blend formulations are complete with primary, secondary, and trace mineral nutrients that are all necessary in a balanced formulation to achieve the highest level of microbial growth. As a result, Perfect Blend avoids the problems that occur when soil microbes receive only partial nutrition, which results in a slower pattern of stop-and-start growth of microbial populations.

pH-Balanced Formulations

Perfect Blend biotic fertilizers are made using proprietary stepped algorithms to lower the pH of the manure feedstock from a mid seven range to the low-six range that is ideal for use by soil microbes. This process provides a pH-balanced formulation that soil microbes find much more favorable than unbalanced blended or mono-ingredient formulations.

Homogenized Formulations

Fertilizers that are simply blended are not homogenized in the manner of Perfect Blend biotic fertilizers. By homogenizing its formulations, Perfect Blend biotic fertilizers maximize the efficiency of transformation from a solid state into forms that are microbial accessible.

Chelated Nutrients

Mineral nutrients in Perfect Blend biotic fertilizers are chelated during manufacturing. This allows all the mineral nutrients in Perfect Blend biotic fertilizers to be immediately available in an ionic form for use by plants and soil microbes. Perfect Blend biotic fertilizers avoid the need for in-ground chelation, which is a transformation step required of other fertilizers and soil amendments

THE SCIENCE BEHIND PERFECT BLEND FERTILIZERS

Any organic material that decomposes on the surface of the soil will ultimately become a humic or fulvic acid. These acids are complex molecular structures made by soil bacteria into natural polymer gels that are absorbed and held by topsoil particles. These gels can absorb and hold up to 98% of their weight in the form of moisture, so they are very important in maintaining moisture levels in the soil.

Just as importantly, soil acid gels act as a storage mechanism for soil nutrients. Any chelated soil nutrients, which are present when the gel forms, are absorbed into gels and molecularly suspended within the complex molecular structure of the gels for later use by plants or microbes. Once formed, these gels are very stable and can hold nutrients in their structures for years. Both plants and soil microbes can easily access these gels to obtain nutrition.

Perfect Blend biotic fertilizers are designed to transform into soil acid gels in an extremely efficient manner. While other organic materials will ultimately transform into some form of soil acid gels, only Perfect Blend biotic fertilizers are specifically formulated for efficient transformation from a fertilizer into the complex molecular structures required to bring crops to their full genetic potential. Only Perfect Blend contains 100% chelated minerals along with a stable, pathogen-free organic base that will provide soil bacteria with the complete complex nutrition necessary to efficiently build high-quality soil acid gels. It is the efficiency of transformation that determines the effectiveness of applied organic soil nutrients. Many consider Perfect Blend to be a breakthrough achievement in soil fertility for the simple reason that the science behind Perfect Blend works very well.

NATURE'S SUPREME RECYCLERS: *FULVIC AND HUMIC ACIDS*

Fulvic and humic acids are the true engines of the soil. For organic growers, they are the single most essential aspect of the soil as these soil acids are the foundational nutrition source for all plants, soil microbes, and larger denizens of the soil such as earthworms. Soil acids are nature's supreme recyclers. Taking nutrients from decomposing organic matter, they store the nutrients in the form of chelated structures within complex molecular structures. Scientists describe these soil acids as pigmented polymers because soil acids have a distinct brown or golden color that imparts color to the soil. Very large amounts of soil acids will, over time, turn soils black. These stable storage structures form as a result of bacterial action in much the same manner as wine. Within their complex structures, nature stores nitrogen, phosphate, potash, sulfur, calcium, and all of the trace minerals in forms that can wait for years until needed by plants or living soil denizens such as bacteria, algae, fungus, or other microbes.

Despite claims to the contrary, humans cannot manufacture soil acids, nor can these acids be made from reconstituted forms dug out of the earth. Only nature can make living soil acids and the only place nature does so is in the air-breathing sections of the earth known as topsoil.

Organic growers who focus on building soil acids receive the award of rich, erosion-proof soils that are filled with nutrients and capable of long-term sustainable agriculture.

THE BENEFITS OF SOIL ACIDS

It is difficult to overestimate the importance of soil acids. These powerful humic substances are the foundation of all good soil. Soil acids, and their moisture-rich forms, soil acid gels, are universally found in healthy topsoil all over the world — in all climates and in every place. The benefits of these acids are staggering in scope and in the role they play in the soil.

Soil Acids Store Nutrients From Decomposed Organic Matter

All elemental nutrients from decomposed organic matter are stored in the form of soil acids until needed by plants or soil organisms.

Soil Acids Feed Plants Directly

Fulvic acid is trans-cellular in that it can easily pass directly into a plant's roots, carrying with it the stored primary, secondary, and trace mineral nutrients critical to a plant's health.

Soil Acids Feed Plants Indirectly

Soil Acids are a prime source of food for soil microbes. These microbes use soil acids as their primary food source. As they reproduce and die, they leave behind their protein-rich bodies, which contain 14% nitrogen and the complete spectrum of plant nutrients.

Soil Acids Enrich and Protect the Soil

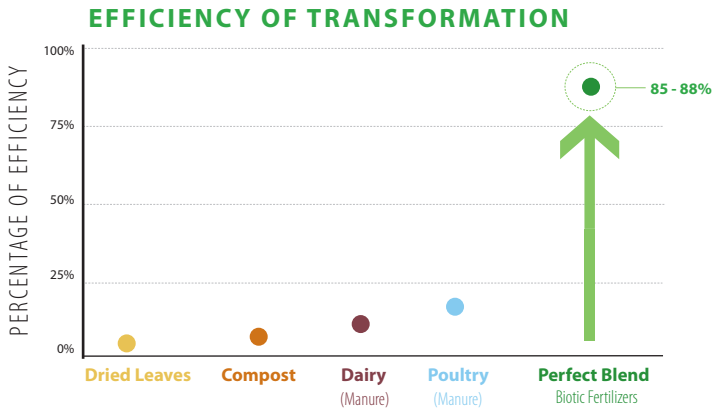
Soil acids collect and hold up to 98% moisture in their structures to form gels that separate soil particles and open up the soil. In heavy rainfall, these gels protect soil from erosion.

Soil Acids Are a Primary Chelation Mechanism

Soil acids act as a primary chelating agent to render elemental minerals into a chelated carbon molecular form that plants and microbes can use.

EFFICIENCY OF TRANSFORMATION OF ORGANIC MATERIAL FROM A SOLID FORM INTO HIGH SOIL ACIDS

It's not about nitrogen units! The nitrogen unit used in conventional growing is a measurement of inefficient synthetic nitrogen which must be applied at twice the amount a plant needs due to the volatile nature of synthetic nitrogen. Organic growers build nitrogen in a symbiotic manner by feeding microbes the food they can quickly and easily digest. By doing so a grower explodes the microbe population which contains 14% nitrogen in their bodies. As a biotic fertilizer enlarges the microbial population large amounts of organic nitrogen are left in the soil when the microbes excrete and die. In organic nutrition the efficiency of transformation is the critical measurement of nutrients delivered to biotic soils. Perfect Blend biotic fertilizers deliver complete, ready to use chelated minerals and nutrients directly into the soil at the pH preferred by soil microbes.



Organic Food Program Registered Material

In accordance with chapter 15.86 Revised Code of Washington and rules as set forth in chapter 16-160 WAC, the following material has been verified to comply with 7 CFR, Part 205 United States Department of Agriculture National Organic Program.

Perfect Blend 100% Natural Organic Fertilizer Enhanced 7-2-2

Material Type: Fertilizer & Soil Amendment
Material Sub-Type: Blended Fertilizer
Restrictions on Use: Soil deficiency must be documented by testing

Registered by: Perfect Blend LLC
dba Perfect Blend Organics
114000 SE 8th St.,
Suite 220
Bellevue, WA 98004

Registration valid through October 31, 2007

Issue date: October 13, 2006

Miles McEvoy
Organic Program Manager

AGR 2291 (R/9/06)

ORGANIC
Approved under
Washington State
Department of Agriculture
Organic Food Program

PERFECT BLEND ORGANICS

ENHANCED

4-4-4

ALL NATURAL ORGANIC FERTILIZER WITH 15 ESSENTIAL ELEMENTS

Perfect Blend 4-4-4 is designed, when applied correctly, to meet all your fertilizer needs for 100% NOP Certified Organic Crops.

Proprietary Organic Process!

Perfect Blend fertilizers are made using a proprietary process that produces a high quality Complex Nutrition Enabling Fertilizer (CNEF™). CNEF™ provides high quality complex nutrition to soil microbes that are responsible for breaking down minerals for plants while helping to maintain a balanced pH in your soil.

Mycorrhizal Spore Inoculants

Mycorrhizal is a valuable beneficial microbe, not hazardous to humans, that is of great benefit to most turf grasses, plant, shrubs, and trees. Perfect Blend fertilizer is inoculated with a blend of three dormant mycorrhizal spore species, Glomus intraradices, G. aggregarum and G. mosseae at approximately .125 propagules per cc total. 100% mycorrhizal strength guaranteed for two years after bag crimp date if product is kept in a dry location at less than 110º F. Fertilizer nutrient values expire after seven years.

Application Directions:

Small Garden - Vegetables: Apply 2 lbs. along the bottom of a 24 foot section of the seed furrow, then cover the fertilizer with a thin layer of soil. Place your seeds on this soil layer, then cover the seeds with an additional layer of soil to the depth recommended on the seed package. For hill plants such as squash and potatoes place one cup in the bottom and sides of the planting hole, followed by a layer of soil, then the seeds. Cover the seeds with ground level soil and then water. For legumes, such as beans and peas, less nitrogen is required. Put half as much Perfect Blend, or one cup every 50 feet, for best results. During the growing season apply an additional 2 lbs. every 50 feet after your plants bloom. Work these plant nutrients into the soil around the plant root zone. A good time to do this is when you are weeding or hilling-up your plants. Always water in newly applied fertilizer.

Field Vegetables & Orchard Applications:

Broadcast - Broadcast up to one ton per acre using conventional spreading equipment. Fertilizer is most efficient if tilled in immediately after application.

Side Banding - Side-band at the rate of one-half ton per acre in most soils. In sandy or poor soils, this rate can be increased.

Hand Application - Applications by precise hand measure can are efficient at approximately one-quarter ton per acre.

Wheat - Fertilize in front of drill during seeding at a rate of one-quarter to one-half ton per acre.

Rice - Follow above directions however allow at least two weeks before flooding field to provide time for soil microorganisms sufficient air to full soil foodweb integration.

New Orchards - Place one pound of PB 4-4-4 in the bottom of the planting hole, cover with at least one inch of dirt and then place tree.

Revitalization of Old Orchards - Drill a 2″ hole approximately 12″ deep at a distance of 18″ – 24″ from the trunk of the tree. Fill to the top with fertilizer. Permanent PVC pipes can be placed in hole to prevent the need for re-drilling the following season.

Application Rates - Most crop lands require two applications, one in the spring and one in the fall. High nitrogen crops may require up to three applications during the primary growing season.

Guaranteed Analysis

Total Nitrogen (N)	4.00%
0.40% Ammoniacal Nitrogen	
0.03% Nitrate Nitrogen	
1.50% Water Soluble Nitrogen	
2.07% Water Insoluble Nitrogen	
Available Phosphate (P_2O_5)	4.00%
Soluble Potash (K_2O)	4.00%
Calcium (Ca)	7.0000%
Magnesium as (Mg)	0.7000%
0.70% Water Soluble Magnesium (Mg)	
Sulfur (S)	3.0000%
3.00% Combined Sulfur (S)	
Boron (B)	0.0200%
Chlorine (Cl) Not more than	0.1000%
Cobalt (Co)	0.0005%
Copper as (Cu)	0.0500%
0.05% Chelated Copper (Cu)	
Iron as (Fe)	0.1000%
0.10% Water Soluble Iron (Fe)	
Manganese as (Mn)	0.0500%
0.05% Chelated Manganese (Mn)	
Molybdenum (Mo)	0.0005%
Sodium (Na)	0.1000%
Zinc as (Zn)	0.0500%
0.05% Chelated Zinc (Zn)	

Derived From:
Chicken Manure, Elemental Sulfur, Manganese Lignosulfonate, Ferrous Sulfate, Copper Lignosulfonate, Cobalt Sulfate, Molybdenum Oxide, Citric Acid, Sulfate of Potash, Boric Acid*.

Mycorrhizal spore species:
Glomas intraradices 0.42 propagules per cc
Glomas aggregarum 0.42 propagules per cc
Glomus mosseae 0.42 propagules per cc

*Soluble Boron is derived from Boric Acid

F1542

This product meets all National Organic Program Standards

Information regarding the contents and levels of metals in this product is available on the internet at **http:www.aapfo org/metals.**

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7-2-2

ALL NATURAL ORGANIC FERTILIZER

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Proprietary Organic Process!

Perfect Blend fertilizers are made using a proprietary process that produces a high quality Complex Nutrition Enabling Fertilizer (CNEF™). CNEF™ provides high quality complex nutrition to soil microbes that are responsible for breaking down minerals for plants while helping to maintain a balanced pH in your soil.

Mycorrhizal Spore Inoculants (Optional)
Mycorrhizal is a valuable beneficial microbe, not hazardous to humans, that is of great benefit to most turf grasses, plant, shrubs, and trees. Perfect Blend fertilizer is inoculated with a blend of three dormant mycorrhizal spore species, Glomus intraradices, G. aggregarum and G. mosseae at approximately 1.26 propagules per cc total. 100% mycorrhizal strength guaranteed for two years after bag crimp date if product is kept in a dry location at less than 110º F. Fertilizer nutrient values expire after seven years.

Application Directions:

Small Garden - Vegetables: Apply 2 lbs. along the bottom of a 24 foot section of the seed furrow, then cover the fertilizer with a thin layer of soil. Place your seeds on this soil layer, then cover the seeds with an additional layer of soil to the depth recommended on the seed package. For hill plants such as squash and potatoes place one cup in the bottom and sides of the planting hole, followed by a layer of soil, then the seeds. Cover the seeds with ground level soil and then water. For legumes, such as beans and peas, less nitrogen is required. Put half as much Perfect Blend, or one cup every 50 feet, for best results. During the growing season apply an additional 2 lbs. every 50 feet after your plants bloom. Work these plant nutrients into the soil around the plant root zone. A good time to do this is when you are weeding or hilling-up your plants. Always water in newly ap plied fertilizer.

Field Vegetables & Orchard Applications:

Broadcast - Broadcast up to one ton per acre using conventional spreading equipment. Fertilizer is most efficient if tilled in immediately after application.

Side Banding - Side-band at the rate of one-half ton per acre in most soils. In sandy or poor soils, this rate can be increased. Broccoli and Romaine - 1200 lbs. per acre.

Hand Application - Applications by precise hand measure can are efficient at approximately one - quarter ton per acre.

Wheat - Fertilize in front of drill during seeding at a rate of one-quarter to one-half ton per acre.

Rice - Follow above directions however allow at least two weeks before flooding field to provide time for soil micro-organisms sufficient air to full soil foodweb integration.

New Orchards - Place one pound of PB 7-2-2 in the bottom of the planting hole, cover with at least one inch of dirt and then place tree.

Revitalization of Old Orchards - Drill a 2″ hole approximately 12″ deep at a distance of 18″ – 24″ from the trunk of the tree. Fill to the top with fertilizer. Permanent PVC pipes can be placed in hole to prevent the need for re-drilling the following season.

Application Rates - Most crop lands require two applications, one in the spring and one in the fall. High nitrogen crops may require up to three applications during the primary growing season.

Guaranteed Analysis

Total Nitrogen (N)	7.00%
0.60% Ammoniacal Nitrogen	
0.04% Nitrate Nitrogen	
4.86% Water Soluble Nitrogen	
1.50% Water Insoluble Nitrogen	
Available Phosphate (P_2O_5)	2.00%
Soluble Potash (K_2O)	2.00%
Calcium (Ca)	7.0000%
Magnesium as (Mg)	0.7000%
0.70% Water Soluble Magnesium (Mg)	
Sulfur (S)	3.0000%
3.00% Combined Sulfur (S)	
Boron (B)	0.0200%
Cobalt (Co)	0.0005%
Copper as (Cu)	0.0500%
Iron as (Fe)	0.1000%
0.10% Water Soluble Iron (Fe)	
Manganese as (Mn)	0.0500%
Molybdenum (Mo)	0.0005%
Sodium (Na)	0.1000%
Zinc as (Zn)	0.0500%

Derived From:
Chicken Manure, Feather Meal, Elemental Sulfur, Manganese, Sulfate, Ferrous Sulfate, Copper Sulfate, Cobalt Sulfate Molybdenum Oxide, Sulfate of Potash, Boric Acid* Zinc Sulfate, Copper magnesium zinc sources chelated with citric acid.

ALSO CONTAINS NONPLANT FOOD INGREDIENTS

Mycorrhizal spore species:

Glomas intraradices	0.42 propagules per cc
Glomas aggregarum	0.42 propagules per cc
Glomus mosseae	0.42 propagules per cc

Chlorine (Cl) Not more than	0.1000%

*Soluble Boron is derived from Boric Acid

F1542

This product meets all National Organic Program Standards

Information regarding the contents and levels of metals in this product is available on the internet at http:www.aapfo org/metals.

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CAUTION
KEEP OUT OF REACH OF CHILDREN
Perfect Blend, LLC recommends that this product, as well as any fertilizer, be kept out of reach of children. This product, while of a relatively mild nature, may be harmful or fatal if swallowed and may cause skin and eye irritation. Avoid breathing in the dust. Avoid contact with skin, eyes, and clothing. Washing skin with water and soap after handling. If in eyes, flush eyes thoroughly with water for 10 minutes. Repeat as needed, and follow up with a physician.

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Proven benefits of the most advanced, science-driven biotic fertilizers in the world!

Provides Soil Microbes the Nutrient Basis to Sustain Soils and Build High-Density, High-Brix Crops

pH-Balanced Chelated Mineral Nutrient Base Increases Protein Synthesis and Polysaccharides to Eliminate Disease, Destructive Fungus, and Predatory Insects in Crops

Pathogen-Free: All Human Pathogens Eliminated in 3-Step Process

Unique Process Uses Kinetic, Chemical, and Infrared Treatment to Eliminate Any Possibility of Human Pathogens Such As E. Coli Completely Free of Weed Seeds, Insect Eggs, and Insect Casements

NOP-Approved Formulations for Sustainable Organic Programs Remediate Worn Soils While Growing Crops to Their Full Genetic Potential

- Biotic Formulated for Maximum Efficiency By Soil Microbes
- 100% Chelated Mineral Nutrients
- Complete, Balanced Mineral Formulations
- High in Primary, Secondary, and Trace Mineral Content
- High in Amino Acids
- Slow Natural Release

Designed for Maximum Efficiency of Transformation Into Soil Acids

- 6.0–6.1 pH Formulation Promotes Rapid Soil Microbe Growth
- Altered Molecular Structure of Manure Base Increases Efficiency
- Homogenous Granules for High Efficiency of Transformation
- Mycorrhizal Inoculants to Replenish Depleted Colonies
- High in Amino Acids for Direct Uptake by Plants
- High in Chelated Minerals for Direct Uptake by Plants