



Restore Your Soil with MetaGrow™



Microbial Inoculants

- Liquid Shelf-Stable
- High beneficial bacteria & fungal populations
- Multiple species for every plant beneficial function
- Increased plant nutrition by microbial delivery



Microbe Food & Fertilizers

- Food and habitat for microbial colonization
- Bring microbes out of stasis into growth phase
- Generate additional plant metabolites



Seed Treatment & Soil Amendments

- Establishes healthy plant rhizosphere
- Microbial and nutrient blends for strong seed germination, emergence and stand establishment

Integrated Biological Crop Programs

At SGS we believe that crops achieve their highest potential and farms achieve sustainable profitability by following these principles:

Healthy plants direct healthy soil biology to actively deliver what nutrients it needs, when it needs them and in the proper proportions;

Broad spectrum microbe inoculants and foods will re-establish healthy soil microbial diversity, population size and plant beneficial functions;

Balanced plant and soil nutrition is key — paying attention to peak nutrient demand by plant growth stage and avoiding nutrient antagonisms that interfere with nutrient uptake;

When plants achieve proper biologically supported nutrition, most pest and disease problems go away;

You can't "make yields". A plant has an inherent genetic yield potential, that we strive to achieve. Our job as farmers is to screw that up as little as possible. Rebuild soil biology and fertility and let nature do what it was programmed to do for millions of years. Farming healthy plants with less pests and disease, lower fertilizer and pesticide costs, and higher yields brings the passion and reward back to farming.

Plant Nutrition
**Plant Directed and
Microbe Delivered**



Liquid Shelf-Stable Microbial Inoculants

Formulations for various crop and soil objectives

SGS microbe inoculants all have extremely high populations (> 5 billion per drop) and diversity (> 20,000 species) and are in stasis – so they are storable and stable for more than a year, and are ready to use.

MetaGrow™ ST

All purpose microbial inoculant, soil and plant probiotic with 20,000+ species of beneficial bacteria and fungi. **MetaGrow ST** is our soil health and plant vigor foundation, derived from earthworm compost and cultivated to huge populations for all plant beneficial purposes.

MetaGrow™ 5X+

Concentrated form of **MetaGrow ST** - with 5 times as many microbes and metabolites, and additional fungal species and seven selected microbe species with high beneficial function for plants. Use at one-fifth the rate of **ST**. Best choice for large acreage, saving on shipping cost and field handling logistics.

MetaGrow™ C

Chitin-based microbe metabolism inoculant - includes many microbes adapted to consume all forms of Chitin in the soil. This Chitin-based metabolism is useful for rebalancing soil biology and complements the diversity of microbes in our other inoculants. Use in combination with **MetaGrow CFOOD**.

MetaGrow™ D-Comp

Inoculant to break down crop residue – breaks down cellulose (leaves) and lignins (sticks) into soil humus. Humus captures and sequesters carbon in the soil which increases soil nutrient and water holding capacity. Improves seed/soil contact and denies pest and pathogen over-wintering habitat. Provides a healthier living soil and makes nutrients available for the next crop. Also an excellent compost starter.

MetaGrow™ F

Fungal dominant inoculant - includes a large and diverse fungal population to build higher level soil health and plant beneficial functions. Use **MetaGrow F** after establishing a good functioning soil microbe population with the other MetaGrow microbial products. Use in combination with **MetaGrow MFOOD** and **Pacific Gro Oceanic**.

MetaGrow™ G

Glucans-based microbe metabolism inoculant - includes a large and diverse microbe population adapted to consume all forms of Glucans in the soil. This Glucans-based metabolism is useful for rebalancing soil biology and complements the diversity of microbes in our other microbe inoculants.

Microbe Food & Fertilizers

Formulations for Targeted Functions

Wettable powder microbe foods specially formulated to facilitate rapid establishment and proliferation of the microbial inoculants

MetaGrow™ MFOOD

Maximum Diversity Microbe Food and Plant Fertilizer 2.3 – 0.9 – 3.5 with 3.5% Calcium, 1.2% Sulfur and 6% Humic Acid. **MFOOD** is 3 products in one. First it wakes up the MetaGrow microbes and provides them habitat to colonize the soil and canopy efficiently. Second it boosts native soil microbial population size and diversity by feeding them a diverse complex food which releases metabolites to benefit plant functions. Third it is a complete organic plant fertilizer.

MetaGrow™ CFOOD

Microbe Food and Plant Fertilizer to activate beneficial directed biology microbe functions 1.6 – 0 – 0.9 with 10% Calcium and 8% Humic Acid. Provides Chitin from crustacean meal. Use with **MetaGrow C** to temporarily direct soil biology to consume chitin-based proteins and increase microbe population diversity and function.

Complementary Products in our Integrated Crop Programs

Pacific Gro Oceanic

Fish Hydrolysate Fertilizer with Nitrogen in L-amino Acid Form 2—1—0.3
Great in combination with microbe inoculants as a microbe food and plant fertilizer. The amino acids are immediately plant available and chelate other nutrients to bring them into the plant. Beneficial fungi particularly benefit from the fish oils.

Pacific Gro Sea Phos

High Phosphorus Fish Hydrolysate 1.7—7—0 – All of the benefits as the Oceanic, but with high, immediately available Phosphorus. Extremely low heavy metals compared to other organic Phosphorous sources. Great clean source of Phosphorus for plant Bloom phase.

Sea-Crop

Liquid Mineral Complex and Fertilizer 2.9% Magnesium Provides Micro Nutrients (more than half the periodic table in liquid plant available forms) to ensure efficient plant growth and physiological processes with no limiting micronutrient factors.

Specialty Nutrient Blends

These products are used in our integrated crop programs to complete the plant nutrition and address micro-nutrient deficiencies that often are limiting factors to the next level of plant performance, health and yield.

MetaGrow Synthesis ESSENTIALS™

Liquid Nutrients for Photosynthetic and Protein Synthesis 2 – 0 – 0 with 1.4% Mg, 2% S, 0.5% B, 0.4% Cl, 0.03% Co, 1% Cu, 1 % Fe, 1% Zn Provides eight secondary nutrients to optimize photosynthesis and protein synthesis. Apply via irrigation or foliar before or during the peak vegetative growth phase just after cell division is completed, at the beginning of protein development growth phase and/or post-harvest on permanent crops for recovery of photosynthetic efficiency .

MetaGrow Bloom ESSENTIALS™

Nutrients for Bloom and Fruit Set 4 – 0 – 0.5 with 3% Ca, 3% S, 0.1% B, 1% Cu, 0.5% Fe, 0.5% Mn, 0.7% Zn and 3% Humic Acid, in a wettable powder. Provides seven secondary nutrients to optimize bloom uniformity and vigor, increase pollen tube strength, enhance embryo split and fertilization, support cell division and differentiation, improve cell wall development and support cell elongation. Apply via irrigation or foliar during pre-bloom, and foliar during bloom, and on perennials also apply post-harvest until pre-dormancy for plant storage of these nutrients for next spring's bloom development.

MetaGrow BLOOM™

Microbe Food and Reproductive Growth Phase Plant Fertilizer 4.5—2—2.5 with 4% Ca, 1% Mg, 4% S, 0.2% B, 2% Cu, 2.5% Fe, 0.5% Mn, 0.5% Zn and 14% Humic Acid, in a wettable powder. **MetaGrow BLOOM** does everything that **MFOOD** does, except with nutrient levels designed to promote plant bloom and flowering. The nutrient ratios and plant growth factors are balanced to efficiently transition the plant from vegetative growth to reproductive growth. **BLOOM** contains organic L-amino acids, surfactants, vitamins, enzymes and over 30 minerals — as well as antioxidants that reduce oxidation of plant resins for high quality finished plants.

Biochar and Microbial Soil Amendment

MetaGrow BiomeCHAR™

Microbe Inoculated Biochar Impregnated with Molasses – 0.2—0.3—0 with 0.5% Calcium
A high quality, small particle size biochar, infused with molasses and inoculated with diverse fungal dominant microbials. Provides habitat and food for microbes and increases soil water holding capacity. Mix in potting soils up to 3% by volume and as a top dress on beds. If top dressed and mixed in, it can be used to arrest excess soil nitrogen availability when transitioning to bloom growth phase.

Seed Treatments

MetaGrow™ seed treatment products provide microbes and nutrients to establish a strong rhizosphere for vigorous emergence and growth. These wettable powder blends work well with other inputs and in place of traditional synthetic nutrient starters.

MetaGrow BiomeSTARTER™

Seed and Transplant Microbe Inoculant 0.6 – 0.1 – 1.5 with 1.3% Ca, 0.5% Mg and 0.7% Fe. Provides selected species of *Mycorrhizae* and *Trichoderma* fungi with *Pseudomonas* and *Bacilli* bacteria to colonize seeds and seedlings with beneficial microbes which promote high germination rates, early and strong emergence, vigorous growth, larger roots and reduced transplant shock.

MetaGrow FF Seed Coat™

Fungal dominant seed treatment with a large complement of diverse biology - improves seed germination and stand establishment. The plant roots take this beneficial biology with them as they grow.

These powdered seed treatments can be applied by themselves or together, or in combination with our liquid microbe inoculant products, e.g. **MetaGrow F** or **MetaGrow 5X+** for a liquid seed coat.

Seed treatments are the most cost effective inputs to build beneficial soil biology.

- Increase germination rate
- Increase speed, strength and uniformity of emergence
- Stronger seedlings with more resistance to damping off diseases
- Larger root systems that bring their beneficial biology with them as they grow.

