

**MetaGrow C** includes an extremely broad spectrum of biology activated to consume all forms of Chitin in the soil and plant canopy. This Chitin-based metabolism is useful for rebalancing soil and plant canopy biology and complements the diversity of microbes in other **MetaGrow** inoculants.

Designed to reset the balance of the microbial community and to enhance microbial species diversity.

**MetaGrow C** is unique in that the microbes grown are only supplied with Chitin based proteins. These microbes can produce chitinase enzymes to break down Chitin as a protein source to grow and reproduce.

Applying **C** with **MetaGrow C FOOD** results in a temporary change in the metabolism in the soil or canopy due to the chitin-based food chain. This metabolism change is like you changing your diet for a couple weeks. By temporarily taking the microbiology in this new metabolic direction, it creates the opportunity to restore and repopulate the soil or canopy biology. While this metabolism persists (peaks in about a week and persists for about a month), the chitinase capable microbes will be generating chitinase enzymes.

Once this peak is past, augment the reset of the soil or canopy biology by restoring the microbial diversity with other **MetaGrow** microbe products such as **ST** or **5X+**. Once the microbes have been repopulated and restored to balance and full function, the soil and crop will be healthier and more resilient.

When combined with **MetaGrow M FOOD** as a food source, **C** can be used to increase the diversity of the microbial community for a healthier and more resilient soil and plant canopy.

#### PLANT BENEFICIAL FUNCTIONS

Microbe populations in **MetaGrow C** include:

**Nitrogen Fixing** - 28 different species of Nitrogen fixing microbes at total populations of  $1 \times 10^8$ /ml – both free Nitrogen fixers as well as Rhizobium N-fixers for legumes.

**Phosphorus Solubilizing** - more than a dozen species at total populations of  $1 \times 10^9$ /ml including endophytic fungi which perform much of the plant phosphorus delivery. Many competitor microbe inoculant products are missing these vital workers.

**Cation Chelating** - dozens of Siderophore microbe species at total populations of  $1 \times 10^9$ /ml improve plant nutrient status of **Potassium, Calcium, Magnesium, Manganese, Molybdenum, Copper, Iron** and **Zinc**.

In addition to the broad spectrum chitin consuming microbe population, **MetaGrow C** also contains organic acids, amino acids, vitamins, enzymes and plant bioactive compounds. These bioactive compounds are built up in our **MetaGrow** products so the plants respond right after application. Competitor microbe products have to produce these compounds over time after application (which ours also do) which means our products provide faster and more effective plant response than competitor inoculants.

- Liquid shelf-stable product that mixes easily for irrigation and foliar use
- Compatible for tank-mixing with all fertilizer inputs
- Suitable for organic crop production. CDFA-Organic listed.
- Proven on over 50 different crops on every soil type to improve soil health and crop production

## A healthy and diverse microbial community provides many crop benefits:

- Improves soil structure and porosity, which:
  - Improves soil oxygen exchange for healthier roots and microbe metabolism;
  - Increases soil water infiltration rates which reduces erosion, runoff and ponding of water — enabling earlier planting;
  - Improves soil moisture holding capacity of lighter textured soils;
- Increases soil Cation Exchange Capacity (CEC) which improves soil nutrient retention and plant nutrient availability;
- Supplies and builds soil organic matter (SOM) – 1% SOM increases in a year are not uncommon;
- Provides plant growth factors for increased germination rate, stronger and faster emergence with more uniform stands;
- Reduces the frequency and severity of plant diseases by improved nutrient status and natural plant defense processes;
- Promotes larger root growth which improves drought tolerance and nutrient efficiency.

## Application Guidance

**MetaGrow C** can be applied in-furrow at planting, by irrigation injection and foliar application. For general use, apply 2 to 5 gallons per acre, 1 to 5 times per year. To reset the soil biology, apply **C** to the soil at 3 to 5 gallons per acre, weekly for 4 to 6 weeks. Apply together with **MetaGrow CFOOD** (0.1 to 0.5 lbs per gallon of **C**) as a food source, to multiply the population and effect.

For improved microbial diversity, apply **C** together with **MetaGrow MFOOD** (0.1 to 0.2 lbs per gallon of **C**), and apply **MetaGrow** microbe products such as **ST** or **5X+** after a series of **C** applications.

For best results, use MetaGrow microbes and **MFOOD** or **CFOOD** with other components of a balanced, biological fertility program. Please refer to the product label for additional information ([metagrow-c-label.pdf](http://metagrow-c-label.pdf)) and follow the advice of a qualified agronomist.

## Food Safe Production Process

MetaGrow microbes are grown at our facilities from a diverse range of microbe cultures sourced from all over the world. No manure or waste product is used in our source materials. We utilize an intensively aerobic production process which assures pathogens and other plant toxins are not present. MetaGrow products are tested and certified free of pathogens. There are no application restrictions on re-entry or days to harvest.

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## SGS MetaGrow Principles

SGS MetaGrow inoculants are designed to correct various imbalances in soil health, while also providing an extremely broad spectrum of microbes that repopulates the entire beneficial soil microbe biology and many different microbe species for each plant beneficial function. As a result of this diversity, MetaGrow products work well on all soils and all crops.

SGS MetaGrow crop programs lower the total cost of inputs by reducing the need for fertilizer and pesticides. When plants achieve proper biologically supported nutrition most pest and disease problems just don't occur.

At SGS we believe that healthy plants **direct** healthy soil biology to actively **deliver** the nutrients they need, when needed and in the proper balanced proportion.

## Plant Directed Microbe Delivered Nutrition