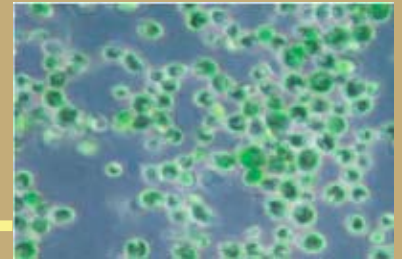


# MICROP 4XL

## IMPROVING SOILS THROUGH APPLIED MICROBIOLOGY NATURE'S BIO-FERTILITY PROGRAM

**MICROP 4XL** provides the effects of a green manure crop without taking the land out of production. Used as a companion planting, the legume-like microalgae add nitrogen from nitrogen-fixation, polysaccharides to condition the soil, and plant growth hormones for improved crops. Approved for use in organic production.



### PURPOSE:

A new concept in green manures, MICROP 4XL provides the traditional benefits of green manure crops. The intercropped microscopic plants add organic matter as they grow in the field with the cash crops. The added fertility from nitrogen-fixation helps to reduce fertilizer needs. This modern green manure product offers growers an ecologically sound method to enhance productivity and improve crop yields. Research has shown that MICROP 4XL improves soil tilth and decreases compaction, crusting, and erosion. The growing microalgae produce polysaccharides (humus material) to increase soil aggregation and build soil structure. When used as a companion green manure or cover crop, MICROP 4XL acts as a perpetual input for maintaining maximum crop yields. MICROP 4XL gives the effects of a plowdown without taking land out of production.

### HOW TO USE:

The product is composed of billions of live microalgae packaged in powder form. Mix the dried microalgae powder with water and apply to the soil surface using conventional spray equipment. MICROP 4XL can also be applied through circle, wheel-line, hand-line and flood irrigation systems. MICROP 4XL does not need to be incorporated. Apply MICROP 4XL before or after planting, during the commercial crop's growing cycle or, after harvest.

"From the point of view of the farmer, algae represent a very desirable crop to get involved with."

Dr. Fred Williams, Iowa State University, from a presentation, "Microalgae and Nitrogen Fixation."



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## TECHNICAL DATA

# MICROP 4XL

**PRODUCT PURPOSE:** Grown as a green manure biofertilizer crop which produces unmanipulated vegetative plant residues for soil and plant improvements.

**PRODUCT DESCRIPTION:** Cyanophyta and Chlorophyta single-celled plants in a dry mixture with no less than 640 million living plant cells per gram.



### DOSAGE:

One ounce per acre (70 grams per Ha), mixed with water and applied to the soil surface.

### APPLICATION METHOD:

Mix dry product in water and apply with any liquid spray equipment (aerial or ground), or apply through irrigation systems.

### GROWTH CYCLE:

After seeding onto the soil surface of a field, the microalgae colonize the upper one inch (2.5 cm.) of soil by rapid cell division. MICROP 4XL microalgae colonization reaches maturity (total biomass peaks) in about 40 days under average field conditions and is capable of maintaining itself at high biomass level for 30-60 additional days, as long as the soil environmental conditions support the colony.



### MODE OF ACTION:

MICROP 4XL growth leaves natural, unmanipulated organic residues on the soil surface. The residues are a complex of organic compounds that include polysaccharides, organic acids, nitrogen (from nitrogen fixation) and plant growth stimulating hormones. These residues infiltrate into the soil profile.

### APPLICATION TIME:

One to four times per year at 30-60 day intervals as is fitting for the weather and crop cultural practices. A general rule of thumb to follow is to employ a single application of MICROP 4XL for every 30 pounds per acre (34 Kg/Ha) reduction in "actual" chemical nitrogen.

### TANK MIXING:

Soil Technologies does not recommend that MICROP 4XL be mixed with other chemical products. However, the company has found that MICROP 4XL cells remain viable when mixed with certain chemicals and fertilizers. Before attempting to tank mix, consult with Soil Tech staff for a current listing of compatible chemicals.

### TEMPERATURE:

The microalgae in MICROP 4XL propagate readily when outside daytime air temperatures are between 45-95°F (7-35°C). The microalgae become inactive (they do not die) when the air temperatures are below 45°F (7°C) or above 95°F (35°C).

### MOISTURE REQUIREMENTS:

The top 5 inches (12.7 cm.) of soil must be above approximately 40% field capacity to support microalgae colonization in the top one inch (2.5 cm.) of soil. The cells revert to dormancy when the field moisture capacity is below 40% (approx.)

### SHELF LIFE:

The product expiration date is 12 months from the date of packaging.

