fintrac

CROP PROTECTION

PROPER APPLICATION OF A TRICHODERMA-BASED PRODUCT: MYCOSTIM

Myco-Stim is a crop protection product from Organic Laboratories that contains spores of the beneficial Trichoderma and Mycorrhizal fungi. A brief overview of their advantages is given below:

Trichoderma	Mycorrhizal fungi
Protects the roots of crop plants from harmful soil fungal diseases	Allow the plants to absorb more nutrients
Protects the roots from secondary infections (e.g. blocks access of pathogenic fungi to insect wounds in the roots)	Increases the effective nutrient uptake zone of the plant's root system
The roots grow at a faster rate and form bigger root systems	More efficient use of fertilizers
Provides prolonged protection by growing with the roots as they grow	

Trichoderma is a beneficial fungus that attacks fungal pathogens and stimulates the plant's own defense mechanisms. In particular, it is very useful in protecting against damping-off, a common seedling disease (see photographs overleaf). The trichoderma colonizes the plant roots and establishes a protective layer that continues to grow with the roots as they develop. Any disease-causing fungus near the roots is attacked.

Mycorrhizal fungi do not protect the roots but they do help the plant find and absorb nutrients. The fungi are able to do this because of their extensive network throughout the soil that reaches places that plant roots do not reach. In return, the plant gives the fungi sugars to feed on.

The best time to apply Trichoderma-based products is at planting & transplanting. This ensures early establishment to allow for continued growth with the plant roots.

At planting

The recommended dosage is 3 lbs of MycoStim per cubic yard of soil or potting mix. A 5 gallon drum would therefore need 1¼ ounces (35 grams) and a bag of Promix (3.8 cubic feet) would require 6.7 ounces (191 grams). To make this easier:

- A gallon of potting mix needs just less than 2 teaspoons (1 teaspoon = 4 grams)
- A 5 gallon bucket needs 2½ tablespoons (1 tablespoon = 14 grams)
- A bag of Promix needs about 14 tablespoons

At transplant

The initial application should be followed up by another treatment at transplant. When transplanting, it is always important to plant into a moist soil. The best way to do this is to use a **starter solution,** which is poured into each hole just before the seedling is

transplanted. Each transplant needs about 1 cup (8 fluid ounces) of starter solution. In addition to MycoStim, the starter solution may also include - vitamins, sugar & fertilizers. The solution must be kept agitated during application.

The recommended dose at transplant is 6lbs per 100 gallons. To transplant 400 hot peppers with a starter solution (using 8 fluid ounces per plant), you will need around 25 gallons of starter solution. This amount of starter solution will require 1.5 lbs of MicroStim or half the packet.

Applications to established crops

If the crop is in the ground for longer than 90 days or if a soil fungicide drench is used, a maintenance application is recommended (once every 90 days). This can be applied as a drench or through the drip system.

Soil drench: Use the same amount of MycoStim per plant as when transplanting (i.e.1.5 lbs per 400 plants). Before doing the drench, make sure the soil around the plants is moist – this may mean you have to irrigate before applying the MycoStim. When calculating how much water you need, aim to apply 10 liters or just over 2½ gallons to 400 plants.

Application through the drip system: To prevent blockages in the drip system, ensure that the MycoStim is thoroughly mixed prior to application. If there is a concern over clogging, pre-mix the powder in a bucket, stir very well and then filter through something like cheesecloth. Sugars and vitamins should also be added to the mixture. Apply the solution within 30 minutes of mixing with water. Make sure that clean water is run through the drip system after the MycoStim application.

Damping off disease



Disclaimer

Fintrac does not specifically endorse MycoStim over any other Trichoderma-based product. Information is being provided because it is presently the only product being brought into the US Virgin Islands.

On-line Resources

- Cornell University information page: http://www.nysaes.cornell.edu/ent/biocontrol/pathogens/trichoderma.html
- MycoStim label: http://organiclabs.com/images/logos/190_MycoStim.pdf
- ATTRA - National Sustainable Agriculture Information Service. General information on beneficial soil organisms: http://www.attra.org/attra-pub/soilborne.html#other_resources



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