

BioStart™ Defensor

Description:

BioStart™ Defensor is a microbial soil inoculant that enhances biodiversity and discourages the growth of undesirable microorganisms in the soil ecosystem. This is a natural process that is promoted by BioStart™ Defensor.

The two *Bacillus* species used in BioStart™ Defensor are naturally occurring and have been selected for their high degree of microbial competitiveness. They are produced in stainless steel bioreactors under controlled conditions that assure potency, stability and batch-to-batch uniformity. Both are OMRI approved for use in organic agriculture.

Microbial Composition:

BioStart™ Defensor contains viable spores of the following *Bacillus* microorganisms:

- *Bacillus cereus* (CM-1c strain – has chitinase activity)
- *Bacillus subtilis* (CM-5 strain – a strong microbial competitor)

Product Characteristics:

Appearance: opaque liquid – light orange color

Odor: citrus

pH: 3.9 – 4.1

Bacillus spore count: 1 trillion (1 x 10¹²) CFU/gallon

Shelf Life: 18 months at 35° - 86° F. Do Not Freeze.

Packaging and Handling:

BioStart™ Defensor is packaged in 15 and 55 gallon plastic drums. The ideal storage temperature range is 50°- 75° F (10° - 24° C). Do not store over 90° F (32° C) for more than two weeks. Store tightly closed in a cool place out of direct sun.

BioStart™ Defensor is a non-toxic, viable microbial culture containing *Bacillus* spores in water suspension. Wear OSHA approved eye protection and rubber gloves when handling. Avoid contact with eyes and open wounds, rinse contacted areas with plenty of water. If ingested, give water and call a physician. Wash hands after use.

Distributed by
Rincon-Vitova Insectaries, Inc.
PO Box 1555, Ventura, CA 93002
800-248-2847 * 805-643-5407 * fax 805-643-6267
www.rinconvitova.com

BioStart™ Defensor Applications:

BioStart™ Defensor can be applied to crops either through the irrigation system or as a foliar spray. The product can be diluted in chlorine free, tap water in any ratio suitable for efficient application; diluted product should be applied within 48 hours. Use only clean, well rinsed, equipment when handling BioStart™ Defensor chemical contaminants can reduce the viability of the microorganisms in BioStart™ Defensor

Do not apply BioStart™ Defensor simultaneously with crop chemicals such as fungicides and pesticides, space applications by at least three days.

BioStart™ Defensor is typically applied to fruit and vegetable crops at the rate of one (1) quart (or 1 liter) per acre per application. Repeated applications separated by 7-14 days give best results. When applied as a foliar spray it is recommended that a suitable, non-toxic sticker-spreader (such as NuFilm-17™) be co-applied.

Certain organic nutrients may benefit the performance of BioStart™ Defensor. Molasses or dextrose, for example, when co-applied at 1-5 kg/acre with BioStart™ Defensor, enhances the germination of the Bacillus spores and facilitates their biological activity.

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No warranty is made for the performance of this product in any specific application.