



Elimination of Coffee Berry Borer Organic Coffee Farm, Bogota, Colombia

Agrostim™ is a liquid or dry, organic based, fully balanced, water soluble concentrate of humate, kelp, yucca, and extracts from fish, bird, and animal sources. The **Agrostim** formulation contains greater than 130 primary and secondary elements, enzymes and coenzymes, amino acids, naturally occurring root and foliage growth promoters (Cytokinins, Auxins and Gibberellins), vitamins, carbohydrates, and essential chelated trace minerals, and micronutrients which significantly enhance crop yields, plant quality, vigor, and resistance to environmental stress and pests.

Increased plant quality and vigor obtained from **Agrostim** utilization enables plants to resist the attack of Pathogenic Plant Diseases (Fungi, Bacteria, & Viruses), Nematodes and **Insect Herbivores**.



Coffee trees, growing in Coffee Berry Borer (*Hypothenemus hampei* – Coleoptera: Scolytidae) infested areas of Colombia (Fig. 1) were foliar sprayed with **Agrostim** organic based fertilizer over a three month period. While Coffee trees in surrounding farms were heavily infested with this beetle, the **Agrostim** fertilized area was essentially free of infestation (Fig. 2).

The Colombian Ministry of Agriculture is recommended the usage of **Agrostim** for increasing the coffee yields and reducing the damage caused by the Coffee Berry Borer Beetle (= la broca) throughout the country.

The Coffee Berry Borer beetle is a major pest of Coffee throughout the world arriving in Central America from Africa around 1970. Current countries affected by this beetle include Mexico, the Caribbean, Guatemala, El Salvador, Honduras and Colombia.

Andaman Ag
P.O. Box 609
Corte, Madera, CA 94976
t. (415) 785-7325
f. (415) 785-7332
www.Andaman-Ag.com
info@Andaman-Ag.com

The basic life style of this insect makes control very difficult – Endosulfan has been a key pesticide because of its “vapor” effect but highly pesticide resistant strains of *H. hampei* have appeared. In some cases the concentration of Endosulfan required for



any control can be 25 to 100 times the dosage of only a few years ago. Of course, with this significant increase in pesticide requirements comes the concomitant increase of human exposure directly or through poisoning the soil and/or ground water. Recently, a number of concerns have been raised about the use of this highly toxic insecticide, Endosulfan, in Colombia which has led to hundreds of poisonings and several

deaths of coffee plantation workers in the last two years. Endosulfan was banned by the Colombian government in 1995 but it is still in widespread usage. The government mandated to use of other agricultural practices and the application of **Agrostim** was one of the new practices employed.

A number of major research projects have attempted “biological control” of la broca through various species of beetle parasites, especially those from Africa, but these programs have been somewhat ineffectual.

Increased nitrogen fertilizer applications have gone hand in hand with the widespread removal of shade cover from American coffee plantations. Heavy synthetic chemical fertilizer (Urea, etc.) in coffee have contributed greatly to “nitrate” contamination of drinking water aquifers.

Ecotech LLC manufacturers proprietary product formulations containing primary and secondary nutrients, chelated micronutrients, enzymes and coenzymes, amino acids, naturally occurring root and foliage growth promoters, vitamins and essential trace minerals. Recommended usage includes tree, vine, vegetable, grain and forage crops, turf, greenhouse floriculture, composting, and nursery stock.

Agrostim by providing a fully balanced nutritional organic based fertilizer, has significantly improved the overall “health” of the plants, thereby providing the Coffee trees the ability to fight off predator attacks such as the Coffee Berry Borer.

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