

Nosema locustae (117001) Fact Sheet

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Summary

Nosema locustae is a naturally-occurring microbe that infects and kills grasshoppers and Mormon crickets when these pests ingest bait that contains *Nosema locustae*. Based on appropriate testing, this active ingredient is safe for humans, wildlife, and the environment when used according to label directions.

I. Description of the Active Ingredient

Active Ingredient Name: *Nosema locustae*

OPP Chemical Code: 117001

The active ingredient consists of spores of the naturally-occurring microbe *Nosema locustae*. For use in pesticide products, the spores are mixed with bait, which is then applied to soil as a solid or liquid. When a target insect ingests the bait, the spores become active, the microbe grows and replicates in the insect's digestive system, and the insect soon dies. The bait is most effective if used when the insects are still in their immature nymph stage, before they become adults.

Technical Note: Most live microbes that are used as pesticides are bacteria; *Bacillus thuringiensis* (*Bt*) is one of the better known examples. *Nosema locustae*, by contrast, belongs to a category of microbes called protozoans. Protozoans are *one-celled animals*, just as bacteria are *one-celled plants*. As of October 2000, *Nosema locustae* was the only protozoan registered as a pesticide active ingredient.

II. Use Sites, Target Pests, and Application Methods

- **Use Sites:** Agricultural crops; rangeland and grasses; ornamental plants
- **Target pest:** Grasshoppers; Mormon cricket
- **Application Methods:** The active ingredient is a powder. It is mixed with other materials, such as bran, to become part of a bait. The bait is then applied to infested areas as a solid or liquid using ground equipment.

III. Assessing Risks to Human Health

No risks to humans are expected from use of products containing *Nosema locustae* as the active ingredient. Toxicity tests in rats and mice showed no harmful effects. *Nosema locustae* does not infect mammals and birds, and cannot replicate in them. Almost all the leftover bait will be on the soil surface rather than on the crop, thus minimizing exposure when people consume the crops.

IV. Assessing Risks to the Environment

Various toxicity tests showed that *Nosema locustae* does not harm mammals, birds, fish, aquatic invertebrates, or honeybees. No adverse effects to the environment are expected when *Nosema locustae* is used in pesticide products.

V. Regulatory Information

Nosema locustae was initially registered (licensed for sale and distribution) in 1980 to control grasshoppers and crickets. EPA prepared a reregistration document in 1992 to ensure that the registered products met updated safety standards. As of October 2000, there were three products containing *Nosema locustae* as the active ingredient.

VI. Producer Information

Two companies have pesticide products registered with *Nosema locustae* as the active ingredient.

VII. Additional Contact Information

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