

balEnce™ BioPesticide Fly Spray - Pest Control for Poultry

Flies and beetles are known to transmit a number of poultry diseases as well as harbor several parasites. In addition, these insects constitute a nuisance to nearby residential areas and, in the case of beetles, consume large quantities and feed, driving up the cost of production.

Terregena Inc.© provides effective, economical and safe balEnce™ adult fly, fly larvae, darkling beetle and hide beetle control products to the poultry layer, broiler and turkey industries.

The active ingredient in balEnce™ products is a naturally occurring fungus (*Beauveria bassiana*). This fungus is a host specific pathogen that targets and kills flies or beetles but does not affect humans, animals, pets, beneficial insects or the environment.

In order to provide our customers with a complete solution to their fly control problems, Terregena© includes parasitic wasps and Hister beetles (*Carcinops pumilio*) as an important part of its product offering.

SEE FULL DIRECTIONS FOR USE ON PRODUCT LABEL. Always follow the instructions on the product label.

Always read and follow label directions for all products. Information here is not a substitute for directions on the product labels.

balEnce™ BioPesticide Liquid Spray for Adult Flies and Fly Larvae balEnce™ Bait for Adult Flies for Poultry

Harmful and Beneficial Insects

balEnce™ BioPesticide is a host specific pathogen that kills adult flies and, in a more concentrated solution, fly larvae but is safe for humans, animals, beneficial insects and the environment. balEnce™ is available in a concentrated liquid spray for adult flies and fly larvae and as a bait for adult flies. After application, adult flies and fly larvae die in 24 to 72 hours.

The active ingredient in balEnce™, *Beauveria bassiana*, is a fungal spore that infects the adult fly and fly larvae on contact. The fungus consumes and ultimately kills the insect. Flies do not develop resistance to balEnce™ as with most chemical pesticides - so rotation of pesticides is not necessary or desirable. balEnce™

MIXING AND USAGE GUIDELINES

balEnce™ Spray for Adult Flies One 15 oz. bottle of balEnce™ Spray treats 50,000 sq. ft.

- 1,000 square feet - 0.3 oz. of balEnce™ in one gallon of water
- 2,000 square feet - 0.6 oz. of balEnce™ in two gallons of water
- 5,000 square feet - 1.5 oz. of balEnce™ in two gallons of water
- 10,000 square feet - 3.0 oz. of balEnce™ in two gallons of water

The amount of water is not critical - it is important that the bottle be shaken vigorously to suspend the spores before mixing and that all of the balEnce™ solution is sprayed.

Spray manure, walls and ceiling three to four times per week until flies are under control, then once or twice per week as required. balEnce™



Spray for Fly Larvae One 15 oz. bottle balEnce™ Spray treats 12,500 sq. ft.

- 1,000 square feet - 1.2 oz. of balEnce™ in one gallon of water
- 2,000 square feet - 2.4 oz. of balEnce™ in two gallons of water
- 5,000 square feet - 6.0 oz. of balEnce™ in two gallons of water
- 10,000 square feet - 12.0 oz. of balEnce™ in two gallons of water

The amount of water is not critical - it is important that the bottle be shaken vigorously to suspend the spores before mixing and that all of the balEnce™ solution is sprayed.

Spray manure two times per week for two weeks until larvae are under control, then once or twice per week as required.

balEnce™ Bait for Adult Flies

- balEnce™ Bait may be placed in the balEnce™ bait station or used as a “scatter bait.”
- Refill bait stations and/or scatter balEnce™ bait twice per week when flies are present in large numbers
- Throw used bait onto the floor or manure as there may still be active material present to control flies.

Non-Beneficial and Beneficial Insects Found in Poultry Manure Pits

Poultry manure pits are ideal breeding environments for a variety of insects— some beneficial as they are natural fly predators while others carry diseases and damage structures.

NON-BENEFICIAL INSECTS

Darkling and hide beetles are definitely not beneficial to poultry management. Darkling beetles can transmit many poultry diseases as well as harbor several parasites. Examples include leucosis (Marek's),

Infectious Bursal Disease (Gumboro), coronavirus, Newcastle Disease Virus, avian influenza, Salmonella sp, E. coli, Aspergillus sp, Eimeria spp., round worms and tape worms. Darkling beetles serve as a very attractive food source to poultry. When exposed to beetles, chickens and turkeys prefer eating them rather than poultry feed. Consumption of beetles at any age can needlessly expose the animal to disease, alter intestinal microflora, and alter normal intestinal function. The damaging effects reduce productivity and ultimately financial returns. Darkling beetles consume feed and contaminate feed similar to the presence of mice, driving up the cost of production. In addition, large beetle populations found in manure diminishes available plant nutrients and generates nuisance complaints from rural residence near fields where it is applied. When applied to open fields, beetles seek the nearest sheltered environment and will become uninvited pests in rural homes. These pests damage property by burrowing into insulation.

Hide beetles normally breed and feed in the carcasses of dead animals. Damage to poultry houses and other nearby structures occurs when hide beetle larvae burrow into wood and other structures.

BENEFICIAL INSECTS

Beneficial insects include parasitic wasps, hister beetles (*Carcinops pumilio*) and earwigs. Terregena© provides parasitic wasps and hister beetles as an important part of its product offering. These beneficial insects are an essential



part of an Integrated Pest Management (IPM) system that also includes the Terregea© line of balEnce™ BioPesticide products.

Female parasitic wasps deposit their eggs inside the fly pupae and, once hatched, the parasitic wasp larvae consume the pupating fly – killing the fly before it emerges. These wasps are approximately 2.5 mm (half the size of a gnat). Parasitic wasps may be added, especially after clean-out, at a rate of approximately 500,000 wasps per house per week for several weeks.



Hister beetles consume up to 40 fly eggs per day. They resemble darkling beetles but are smaller at approximately 1.5 mm (1/16 in.). Hister beetles fall prey to darkling beetles and hide beetles.

Earwigs are very aggressive and consume fly larvae. Earwigs cannot be bred in captivity.

Begin releasing parasitic wasps and hister beetles with the first warm weather. Use balEnce™ BioPesticide Spray for adult flies and fly larvae and balEnce™ bait for adult flies along with maintaining dry manure to minimize the fly breeding habitat for effective and economical fly control. It is important to note that chemical pesticides kill beneficial insects while balEnce™ BioPesticide is not harmful.