

# PRODUCT RESOURCE

## USE BIFEN I/T TO CONTROL DARKLING BEETLES IN POULTRY BARNs

### ECONOMIC, PERFORMANCE & BIOSECURITY IMPACT

Darkling beetles (also known as lesser mealworms or litter beetles) are the most important insect pest in broiler production. Left uncontrolled, these beetles can cause significant damage and economic loss:

- Destroy insulation and structural wood in broiler houses
- As much as 67% increase in energy costs
- Consume poultry feed
- Carry and transmit disease organisms and parasites
- *Salmonella*
- *Campylobacter*
- Newcastle disease virus
- 26 pathogenic types of *E. coli*
- In dry litter, larvae burrow into young chicks for water, & can kill younger birds

With today's current production practices, insecticide application is one of the more practical and effective ways to control darkling beetles.

### WEAPON OF CHOICE: BIFEN I/T INSECTICIDE/TERMITICIDE

ACTIVE INGREDIENT: BIFENTHRIN 7.9%

BIFEN I/T is a liquid suspension concentrate (SC) formulation containing 2/3 lb of bifenthrin per gallon. It controls pests of poultry and livestock facilities,

including biting flies, filth-breeding flies, litter beetles, hide beetles, bed bugs, mites and ticks.

Apply as a general surface (including directed spray) and/or crack and crevice treatment. Control is enhanced when interior and exterior perimeter applications are made in and around the livestock or poultry housing structures. Normal cleaning practices of the structure also must be followed along with applications of Bifen I/T to effectively control crawling and flying insect pests.

Do not apply to milk rooms. Pay attention to animal areas including stanchions, pipes, windows, doors and areas where insect pests hide or congregate. Exterior applications to walls and foundation perimeters can help prevent interior infestations of flying and crawling insect pests. Apply Bifen I/T at a rate equivalent to 0.33 to 1 fl. oz per 1,000 sq. feet.

### DARKLING BEETLE CONTROL

To control darkling beetles in broiler houses, apply Bifen I/T at 1 fl. oz per 1,000 sq. feet to the litter, lower portions of inside walls, posts and exterior perimeter. Reapply between each flock.

Feeders and waterers must be raised off of the floor or covered before application to prevent contamination. Exterior applications to walls and foundation perimeters can help prevent interior infestations of crawling and flying insects. Apply Bifen I/T at a rate of 1 fl. oz per 1,000 sq. feet.

### RESISTANCE & INSECTICIDE ROTATION

Darkling beetles are becoming resistant to a number of different insecticides. A practical and effective way to manage insecticide resistance is to avoid using insecticides with the same mode of action (MoA) over and over again. Instead, alternate or "rotate" insecticides every 6 months. For example, if you've been using a pyrethroid like Bifen I/T, rotate to an organophosphate like Pyrofos CS for the next 6 months, then rotate to another MoA class for the next 6 months, and so on.

### OTHER INSECT PESTS

Bifen I/T is a broad spectrum insecticide that controls a wide array of pests indoors, as well as outdoors around buildings, in lawns and on ornamental plants, including:

- Ants
- Bees
- Boxelder bugs
- Cockroaches
- Crickets
- Earwigs
- Fleas
- Flies
- Gnats
- Millipedes
- Mosquitoes
- Moths
- Scorpions
- Silverfish
- Spiders
- Stink bugs
- Ticks
- Wasps



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## BIFEN I/T APPLICATION OPTIONS

### DARKLING BEETLE CONTROL APPLICATION OPTIONS

Two different application methods are commonly used for broiler houses.

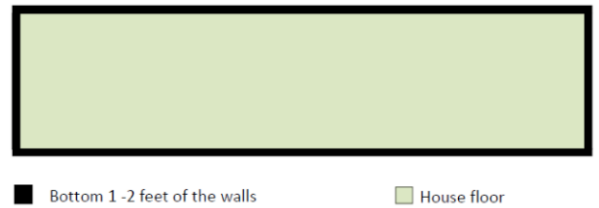
### WHOLE HOUSE TREATMENT

This method treats the entire floor area of the broiler house and lower portions of the walls.

#### Whole house treatment area calculations (example)

##### HOUSE DIMENSIONS

- Length = **500 ft.**
- Width = **40 ft.**
- Floor Area = 500 ft. X 40 ft. = **20,000 ft.<sup>2</sup>**
- Length of walls = (2 X 500 ft.) + (2 x 40 ft.) = **1,080 ft.**
- Height to treat on walls = **1 ft.**
- Wall Area to treat = 1,080 ft. X 1 ft. high = **1,080 ft.<sup>2</sup>**
- Total Area to treat = 20,000 ft.<sup>2</sup> + 1,080 ft.<sup>2</sup> = **21,080 ft.<sup>2</sup>**
- Bifen I/T Needed: 21,080 ft.<sup>2</sup> X 1 fluid ounce/1,000 ft.<sup>2</sup> = **21 fluid ounces (621 mL)**



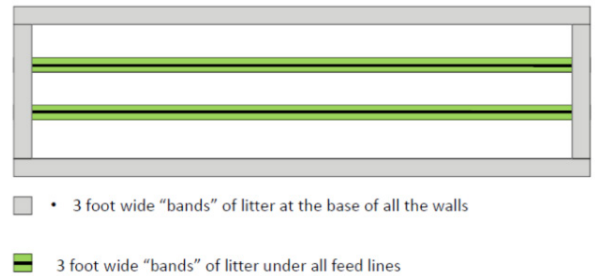
### BAND TREATMENT

Band treatments apply insecticides to areas where darkling beetles tend to concentrate: along the walls and under the feed lines.

#### Band treatment area calculations (example)

##### HOUSE DIMENSIONS

- Length = **500 ft.**
- Width = **40 ft.**
- "Band" width = **3 ft.**
- Number of Feed Lines = **2**
- Length of walls = (2 X 500 ft.) + (2 x 40 ft.) = **1,080 ft.**
- Area to treat along walls = 1,080 ft. X 3 ft. = **3,240 ft.<sup>2</sup>**
- Area to treat under feed lines = 500 ft. X 3 ft. X 2 = **3,000 ft.<sup>2</sup>**
- Total Area to treat = 3,240 ft.<sup>2</sup> + 3,000 ft.<sup>2</sup> = **6,240 ft.<sup>2</sup>**
- Bifen I/T Needed: 6,240 ft.<sup>2</sup> X 1 fluid ounce/1,000 ft.<sup>2</sup> = **6 1/4 fluid ounces (185 mL)**



Applications should be made between flocks, after the litter in each house has been prepared for placement of the next flock (i.e., AFTER cake is removed, litter raked, and any new material added).



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