

TECHNICAL BULLETIN

USE PIVOT® 10 TO CONTROL DARKLING BEETLES AND HOUSE FLIES IN POULTRY HOUSES

ECONOMIC, PERFORMANCE & BIOSECURITY IMPACT

Darkling beetles and house flies are two major insect pests in poultry production facilities. Left uncontrolled, these insects can cause significant damage and economic loss.

Darkling Beetles:

- Destroy broiler house insulation, increasing energy costs for heating and ventilation
- Consume poultry feed
- Carry and transmit disease organisms, including Salmonella, Campylobacter, Newcastle disease virus and pathogenic *E.coli*

House Flies:

- Annoy animals and workers
- Carry and transmit disease organisms and parasites
- Create a serious nuisance for residences near poultry facilities, leading to legal action and significant law suit awards

Insecticide application is an important component integrated pest management for these insects, and one of the more practical and effective tools for controlling darkling beetles and house flies in poultry housing.

WEAPON OF CHOICE: PIVOT® 10 IGR CONCENTRATE

ACTIVE INGREDIENT: PYRIPROXYFEN 10%

Pivot® 10 is an insect growth regulator (IGR) for the control of darkling beetles and house flies in poultry operations. Pyriproxyfen (PPF), the active ingredient in Pivot® 10, prevents beetle and fly larvae from pupating and developing to the adult stage, breaking the insects' life cycles.

- Darkling beetles
- Flies
- Gnats

- Mealworms
- Spiders (except black widow & brown reclus)

USE STIES: Pivot® 10 can be applied to litter, manure, animal bedding and other insect breeding sites in and around broiler houses, layer houses, other poultry buildings, calf hutches, dairies, barns, farm buildings, feedlots, livestock housing and swine facilities.

APPLICATION DARKLING BEETLES

Apply Pivot® 10 to poultry house litter infested with darkling beetles at the rate of 8 milliliters (mL) per 1,000 square feet of surface in 1/2 – 2 gallons of water/1,000 square feet). Apply between flocks, after the litter has been prepared for placement of the next flock (i.e., AFTER any cake removal, windrowing, raking, tilling and addition of new material).

IGR's like Pivot® 10 don't kill adult beetles. Tank mix Pivot® 10 with a conventional insecticide such as Cyzmic® CS, Dominion® 4L or Pyrofos® CS to get immediate control of adult stages while inhibiting successful development of immature stage.

HOUSE FLIES

To control house flies in layer houses, turkey growout houses and other facilities, use 8 mL Pivot® 10 per 1,000 square feet of surface applied in 3 - 5 gallons of water/1,000 square feet. Apply to litter, manure piles and other materials where house fly larvae (maggots) are developing.

RESISTANCE MANAGEMENT & INSECTICIDE ROTATION

An easy and effective way to manage insecticide resistance is to avoid using products with the same mode of action (MoA) over and over again. Alternating or "rotating" conventional insecticides is a common practice for much of the poultry industry.

Although IGR's have some unique features that make them different from conventional insecticides (pyrethroids, neonicotinoids and organophosphates), at the end of the day they are still insecticides. If they are overused (or applied at too low of a rate), beetles will also become resistant to them.

Going forward, it would be a good practice to also rotate IGR's. For example, if you've been using Pivot® 10 in your tank mixes for a number of flocks, "rotate" to Tekko® 10 for the next several flocks. These two IGR products - Tekko® 10 and Pivot® 10 - contain active ingredients belonging to two different MoA classes, so rotating their use will help prevent resistance from developing.



Pivot® 10 ►

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PIVOT® 10 APPLICATION OPTIONS

WHOLE HOUSE TREATMENT

Apply insecticides to the entire floor area of the broiler house and lower portions of the walls.

Whole house treatment area calculations (example)



■ Bottom 1 -2 feet of the walls ■ House floor

HOUSE DIMENSIONS

- Length = 500 ft.
- Width = 40 ft.
- **Floor Area** = 500 ft. X 40 ft. = **20,000 ft.²**
- 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.²**
- **Total Area to treat** = 20,000 ft.² + 1,080 ft.² = **21,080 ft.²**
- **Pivot® 10 Needed:** 21,080 ft.² X 8 milliliters (m/L)/1,000 ft.² = **169 mL (5.7 fluid ounces)**



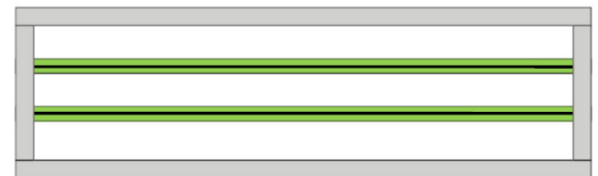
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BAND TREATMENT

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

Band treatment area calculations (example)



■ • 3 foot wide "bands" of litter at the base of all the walls

■ 3 foot wide "bands" of litter under all feed lines

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.²
- Area to treat under feed lines = 500 ft. X 3 ft. X 2 = **3,000 ft.²**
- **Total Area to treat** = 3,240 ft.² + 3,000 ft.² = **6,240 ft.²**
- **Pivot® 10 Needed:** 6,240 ft.² X 8 milliliters (m/L)/1,000 ft.² = **50 mL (1.7 fluid ounces)**



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