

## University of Missouri Extension

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# Fly Control in Caged Layer Buildings

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House flies, soldier flies and other non-biting flies can and often do become a problem in poultry buildings. They do not bite or feed on the birds but may carry pathogens because of their habit of feeding on manure, dead birds and other waste materials.

Poultry manure is an excellent development material for fly larvae. Caged layer operations concentrate a large amount of manure in a relatively small area and therefore create an ideal situation for producing many flies. Flies and odor coming from poorly managed buildings may result in legal action against the producer.

This guide gives recommendations for controlling flies only in caged layer operations where the birds are not in contact with the floor or litter. Properly managed floor operations seldom have a fly problem.

## Control

Effective and economical fly control depends on:

- Good sanitation practices to remove fly breeding areas
- Proper use of insecticides to kill adult flies
- Treatment of manure with an insecticide to control maggots if needed
- Good management practices throughout the year, especially in controlled environment buildings.

## Sanitation

The first, most important step in fly control is prompt and regular removal of waste material where flies breed. Flies lay eggs on wet, decaying material. This includes waste feed, broken eggs and dead birds. The maggots that hatch from these eggs cannot develop in manure or other dry materials.

Keep droppings dry. Repair water leaks, both in water supply lines and building roofs. Soldier fly infestations usually start around the outside of

open buildings where rain and snow have blown onto the manure and made it wet.

The caged layer operator has two options available when considering the frequency of manure removal:

- **Weekly removal**

Removing manure once each week during the active fly season (May through October) and throughout the year in controlled environment buildings doesn't allow sufficient time for the maggots to develop into adult flies. Predators and parasites that feed on the eggs and maggots also are removed. Occasional insecticide treatment to control adult flies may be needed.

- **Occasional removal**

The manure is allowed to cone up under the cages and dry and is removed once or twice a year. The predators and parasites develop to their maximum. If manure becomes wet, flies will become a problem. Occasional insecticide treatment to control adult flies may be needed as well as occasional spot treatment of manure to control maggots. Removing the manure from under one row of cages at a time instead of cleaning an entire building will leave a stock of beneficial insects and mites to move into the new manure.

The manure that is removed should be thinly spread in fields, not piled outside the buildings.

If good sanitation practices are followed, less insecticide will be needed and that used will be more effective.

## Fly control in open houses

Acceptable fly control in open houses requires strict attention to sanitation and manure management, supplemented with the use of insecticides as baits, residual sprays and spot treatment of manure for maggot control.

**Baits** consist of an insecticide and an attractant, which serves to draw flies to the insecticide. Start spreading the bait as soon as flies begin to be numerous. Place bait where flies congregate during the day — window ledges, doorways, on the floor between cages, etc.

During the first four or five days, scatter **dry bait** heavily enough that it can be seen. Continue to put out bait each day for the next week, using smaller amounts than for the first application. After the first 10 days, apply bait every two to four days to those places where the most flies were killed during the initial baiting.

To make a **liquid bait**, mix the proper amount of insecticide with water and add sugar, corn syrup or molasses. Follow the directions on the container label. Use a sprinkling can to spread the bait on the floor. On a dirt floor or where the floor is dirty, apply the bait on pieces of burlap, cardboard, etc. Apply new, fresh bait every two to four days.

Continue to use bait regularly during the summer. Don't stop as soon as fly numbers are knocked down. If you do and the numbers build up, you will have to start all over again with the heavy initial baiting.

## Recommended ready-to-use dry baits

- Dichlorvos  
Use 0.5 percent bait.
- Ronnel (Korlan)  
Use 1 percent ronnel bait.
- Trichlofon (Dipterex)  
Use 1 percent bait.

## Recommended liquid baits (must be prepared by user)

- Dichlorvos  
Use 0.5 percent bait solution.
- Ronnel (Korlan)  
Use 2 percent ronnel solution.

### Restrictions

Don't place baits where birds may come in direct contact with the material. Don't contaminate feed, water, utensils or eggs.

**Residual sprays** leave a deposit of insecticide that the fly contacts when it lands on the treated surface. Residual sprays will remain effective for a few days up to several weeks. Apply the first spray around doors and windows, walls, ceilings and rafters in late spring or early summer as soon as flies begin to be a problem. Repeat applications as needed. Apply 1 gallon of spray per 500 to 1,000 square feet of surface. On unfinished wood, brick or concrete surfaces, wettable powder formulations will give longer lasting control than emulsifiable concentrates.

## Recommended residual sprays

- Dimethoate  
Use 1 percent dimethoate made by mixing 1 pint 23.4 percent dimethoate emulsifiable concentrate in 3 gallons of water.
- Fenthion (Baytex)  
Use 1 percent fenthion made by mixing 15 tablespoons of 46 percent Baytex emulsifiable concentrate in 3 gallons of water.
- Permethrin  
Use 0.1 percent permethrin made by mixing 1 cup 5.7 percent emulsifiable concentrate or 8 level tablespoons of 25 percent wettable powder in 3 gallons of water.
- Rabon  
Use 1 percent Rabon made by mixing 1/2 pound of 50 percent Rabon wettable powder in 3 gallons of water.
- Ronnel (Korlan)  
Use 1 percent ronnel made by mixing 1 pound of 25 percent Korlan wettable powder or 1 pint of 24 percent Korlan emulsifiable concentrate in 3 gallons of water.

## Restrictions

Remove birds and eggs before applying dimethoate. Don't apply fenthion, permethrin, Rabon or ronnel directly onto birds. Avoid application where drift or droplets contact birds; this may necessitate covering the cages during the application of fenthion, permethrin, Rabon or ronnel. Cover feed and water troughs before spraying with any insecticide.

### **House fly resistance to permethrin**

In some areas of Missouri, house flies have become resistant to residual sprays of permethrin. Rates that have good control the previous season often fail suddenly when reapplied in the spring. If this happens, do not continue permethrin use. Instead, apply an organophosphorous insecticide as a residual surface treatment. Ensure adequate sanitation and consider using bait and fogs to reduce populations of adult flies.

### **Maggot control**

Maggots should not develop in manure that is kept dry. If the manure becomes wet, correct the cause of the moisture. If maggots develop in the wet manure, make spot applications of one of the recommended maggot sprays to the infested manure. Apply as a coarse spray or with a sprinkling can. Apply approximately 1 gallon per 100 square feet of surface area.

## Recommended maggot sprays

1. Dimethoate  
Use 1 pint of 23.4 percent dimethoate emulsifiable concentrate in 2-1/2 gallons of water.
2. Rabon  
Use 5 tablespoons of 50 percent Rabon wettable powder in 1 gallon of water.

## Restriction

Don't apply where birds may come in contact with the treated manure.

### **Feed-through fly control**

Insecticide may be applied to the droppings of caged laying hens by incorporation in the feed. This ensures even distribution in the droppings and is very labor-economical. An adequate batch mill is required for even distribution of the material in large quantities of feed.

### **Recommended feed-through**

Use cyromazine (Larvadex) 0.3 percent pre-mix at the rate of 1 pound per ton of finished feed (final rate of 1.5 parts per million) for control of house flies. Feed continually until house fly larval development is suppressed, then feed every other week for the remainder of the fly season. Do not cease sanitary practices and scheduled removal of the droppings. Spot-treat any maggot infestations with a maggot spray as described above.

## Fly control in closed houses

Flies should not become a problem in closed houses if good sanitation practices are followed and all openings are kept screened. Screen air inlets with fly screening and keep good springs on screen doors.

### **Fog**

If a fly problem does develop in a closed house, apply a fog of insecticide to knock down the adult population.

## **Recommended fog insecticides**

- Dichlorvos  
Use 0.5 percent solution.
- Pyrethrin plus piperonyl butoxide  
Use a 0.1 percent solution.

Make the application in early morning before flies become active or late afternoon after flies go to roost. Turn off fans; make fog application; then turn fans on. Direct fog toward ceiling for best results.

### **Baits**

As a supplemental treatment, use baits as described under the "Fly control in open houses" section. Apply around doorways and on the walkway floor between cages.

### **Restrictions**

Don't place baits where birds may come in direct contact with the material. Don't contaminate feed, water, utensils or eggs.

### **Maggot control**

If maggots develop in the manure under the cages, follow the directions in the "Fly control in open houses" section.

### **Feed-through fly control**

Use cytomazine as described in the "Fly control in open houses" section.

### **Residual sprays**

Applications of a residual spray on outside surfaces near doors and other openings will aid in reducing the number of flies that enter the building. Follow the directions and restrictions as given in the "Fly control in open houses" section.

### **General precautions**

Don't apply non-registered materials directly to poultry or within poultry houses. To do so may cause the meat or eggs to become contaminated and unsalable. Be sure to read and follow the safety precautions given on the label of the container.

**Missouri insect control recommendations are revised annually and are subject to possible change during the season. No discrimination is intended, and**

**no endorsement is implied.**

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