

Note: The instructions for use of the recommended pesticides are not as current or comprehensive as the pesticide labels and are intended to be used as guidelines only. Before using any pesticide READ THE LABEL for more specific instructions. Many insecticides are sold under brand names not listed in this publication. Check labels for the names of recommended active ingredients.

Fly Control in Poultry Operations

Successful fly control is accomplished through the integration of nonchemical and chemical control methods. Reliance on the use of insecticides alone seldom results in satisfactory fly control. SANITATION AND MANURE MANAGEMENT is very important. Ideally, manure should be removed at least twice each week to remove fly breeding materials. Spread manure thinly with a flail-type spreader to allow drying and to prevent the completion of fly development in the field. At least 450 flies can breed in one pound of manure which is why THOROUGH CLEANUP is essential.

If manure is allowed to build up, MOISTURE CONTROL is essential to insure that it dries rapidly. Proper ventilation, temperature control, cutting of grass and weeds around buildings and use of fans to increase air movement over droppings will enhance drying. Keep waterers from leaking, cull birds that habitually produce very loose manure, remove broken eggs and dead birds and reduce feed spillage to improve fly control.

Proper use of SCREENING on all doors and windows will keep flies out of egg rooms and offices. Air curtains and properly positioned fly electrocutor traps are also useful in preventing flies from entering buildings.

Chemical fly control measures are a necessary part of a successful fly control program. Residual sprays and baits will give up to six weeks control. When large numbers of adult flies are present in untreated areas, the use of contact fogs, mists, and space sprays will provide rapid but short term suppression of the population. Fogs, mists, space sprays and residual sprays are also useful for controlling mosquitoes in poultry houses.

Larvicides sprayed directly onto accumulated droppings will give some control but removal or controlling the moisture in the droppings is preferable. Insecticide feed additives (Larvadex) are also available which, when incorporated into the feed, pass through the bird and prevent larval development in the droppings.

Contact sprays, fogs or space sprays

Insecticide	Amount
Pyrethrins (0.1 to 0.6%) plus Piperonyl Butoxide (1 to 6%)	Ready-to-Use
Dibrom 37% EC (naled)	1 cup/10 gal water

Pyrethrins: Apply for 5-6 sec/1000 cu ft as a fog when flies are present. Keep room closed for 15 minutes following application. Use as necessary. DO NOT contaminate feed or water or spray birds directly. Various types of aerosol, mist, and ULV (ultra low volume) equipment are available for making these applications.

Residual Fly Sprays

Insecticides may be applied as residual surface sprays, non-residual space sprays, baits, manure sprays, or feed additives. Always read and follow label instructions before applying insecticides for fly control. Treat walls, ceilings, posts, and other fly resting sites. Spray these areas thoroughly and to the point of runoff. In order to minimize control failures due to insecticide resistance, do not apply the same insecticide, or insecticide within the same chemical class (particularly pyrethroids), repeatedly throughout an entire season. See product labels for rates.

Synthetic Pyrethroid Insecticides	Organophosphate Insecticides
cyfluthrin - Countdown 2 EC OR 20% WP or Tempo 2E	stirofos - Rabon 50% WP
fenvalerate - Ectrin 10% WDL	stirofos + vapona Ravap EC
<i>lambda</i> -cyhalothrin - Grenade 10% WP	
permethrin - Atroban 25% WP or 11% EC, Ectiban 7% EC or WP, Expar, Gardstar, Insectaban, Insectrin, Overtime, Permaban, Permethrin II 10% or 25% WP	

Do not contaminate food, water or utensils with spray. Do not treat animals directly. Remove animals from barns when using Diazinon or Baytex. One gallon of spray treats 500-1,000 square feet, depending on the type of surface (See label directions). Apply to walls, ceilings and other fly resting sites. Alternate applications of pyrethroids and organophosphates. Residual fly spray materials listed above provide control for 1-7 weeks.

Fly Parasite Release Programs

Several commercial firms offer a fly parasite release program that can be used to supplement fly control around concentrated livestock operations. These small wasp parasites attack house flies or stable flies. The benefits of parasite release programs in livestock operations have not yet been proven. Several parasite species are available. *Spalangia nigroaenea* attacks house flies and stable flies in feedlots. Parasites in the genus *Muscidifurax* attack house flies while those in the genus *Spalangia* attack stable flies. Do not buy blends of unknown species and do not buy shipments of *Nasonia vitripennis*, a species that has been ineffective in midwestern feed lots. See ENTFACT 502- "Biological Control of Flies".

Fly Traps

Large numbers of flies can be caught in baited fly traps but the traps do not cause any significant reduction in total fly numbers. In addition, this approach does nothing to eliminate fly breeding sites. Electrocuting light traps may reduce house fly and stable fly numbers in closed buildings.

Fly baits can be scattered where house flies congregate to provide some temporary reduction in numbers. Never use baits where cattle or other domestic livestock can eat them. Place baits in areas where flies congregate, such as window sills or doorways. Baits alone will not control fly populations. They should be used along with sanitation and other insecticidal methods (e.g., residual and space sprays). Baits containing the active ingredient methomyl include Apache, Golden Malrin Fly Bait Plus, and Tailspin. Diptorex 1% Bait contains trichlorfon.

Never use baits where loose birds are housed or in areas accessible to poultry. Place baits in pans or protected locations where flies congregate such as window sills or doorways. Indiscriminant scattering of bait is wasteful and unnecessary. For maximum effect, baits should be used in conjunction with other chemical or nonchemical approaches. Read the label for further instructions.

Manure sprays kill fly larvae that are developing in treated areas. They are recommended where manure cannot be removed on a 7 to 10 day schedule. Apply at a rate of approximately 1 gal/100 sq. ft. to kill maggots. Do not spread treated manure onto crops not listed on the insecticide label. Apply sprays at rates that wet the manure surface, it is not necessary to soak the manure. Repeat treatments as necessary but no more often than every 7 days. Rates to use in per 25 gallons of water include: ■ Larvadex 5% SC (cyromazine) 1 quart ■ Rabon 50% WP or 24% EC (stirofos) 4 lbs or 1 gal OR ■ Ravap 28.7% EC (stirofos + dichlorvos) 1 gallon.

Larvicides and Feed Through Treatments

Use larvicides strictly according to the label. Insure that there is thorough but not excessive coverage and penetration of droppings to achieve control. Larvicides are designed to be used in caged bird houses only.

Insecticide	Amount
Golden Malrin Liquid 24.8% EC (dimethoate + DDVP)	1 gal/20 gal water
Rabon 50% WP Rabon 24% EC	2.5 oz/gal water/100 sq. ft. 6 oz/gal water/100 sq. ft.
Ravap 28.7% EC	5 oz/gal water/100 sq. ft. droppings

Larvadex Premix (cyromazine) can be used as a feed through larvicide on for caged layer hens. Use at 1 pound per ton of feed for house fly control or 3-1/3 pounds per ton for little house fly control.

Fly Parasite Release Programs

Several commercial firms offer a fly parasite release program that can be used to supplement fly control around concentrated poultry operations. These small wasp parasites lay their eggs in the larvae or pupae of house flies. For optimum results, a parasite release program must be instituted on locations where excellent manure management and sanitation has already reduced the fly population. In addition, the proper species of parasite must be released regularly and in large numbers. However, at this time it is not known when, how many, and which species of fly parasites to release for optimum results.

Lice and Northern Fowl Mites (Bird Treatments)

Insecticide	Application Rate	Comments and Days to Slaughter
Co-Ral 25% WP	6 oz or 3 oz per 5 gal water, use high rate for lice, low rate for mites	0 Do not treat within 10 days of vaccination or stress
Ectiban 5.7% EC Permethrin II 10% EC (permethrin)	1 qt/25 gal water 1 qt/50 gal water Use 1 gal/100 birds	Retreatment may be needed in 4-12 weeks. 0 days
Rabon 50% WP (stirofos) Rabon 3% D	6-1/2 oz/5 gal water Use 1 gal/100 birds 1 lb/300 birds	Do not treat more than once every 14 days. 0 days
Ravap EC	5 oz per 2 gal water	Use 1 fl oz per bird Do not treat again within 14 days
Sevin 80% SP	4 oz/ 5 gal water Use 1 gal/100 birds	Thorough coverage and feather penetration is essential. 7 days
Sevin 5% D	1 lb/100 birds.	Do not treat more than once every 4 weeks. 7 days

Note: Sprays should be applied at high pressure (100-125 PSI) to provide good coverage and penetration of feathers. Treat vent area thoroughly.

Depluming mite Dip birds in a sulfur-soap mixture (2 oz. sulfur and 1 oz soap per gallon of water). Wet feathers thoroughly to the skin. Dip only on warm nights.

Scaly-leg mite dip shanks in undiluted crude petroleum oil.

Fleas Insecticides listed in the following table may provide some flea control.

Lice, Chicken Mites and Northern Fowl Mites (Poultry House and Litter Treatments)

Insecticide	Amount	Days to Slaughter	Comments
Rabon 50% WP (stirofos)	6-1/2 oz/5 gal water 1-2 gal/1000 sq ft OR Dust 2-1/2 oz/100 sq ft	0	Do not treat more than every 14 days. Treat litter thoroughly.
Sevin 80% SP Sevin 5% D	6.5/lbs/ 100 gal water 1 lb/40 sq ft*	7	Use 1-2 gals of spray per 1,000 sq. ft.

* Do not apply dust to eggs or nests. Do not treat more than once every 4 weeks.

Note: Poultry house and litter treatments should be applied thoroughly to litter, walls, floors, roosts, and similar areas where pests hide. Force sprays into all cracks and crevices.

Bedbugs

Insecticide	Amount	Preslaughter Interval (days)	Precautions & Remarks
Sevin 80% SP	5 lb/100 gal Use 1 to 2 gal per 1,000 sq ft.	7	Apply thoroughly to walls, litter and roost surfaces, especially cracks and crevices.
Permethrin			See label.
Countdown 20 WP	2 scoops /1,000 sq ft		Apply to walls

Lesser mealworms (litter beetles) are stored grain pests that can cause structural damage, become an annoying nuisance, and may serve as a reservoir of diseases. Remove birds prior to treatment with Countdown / Tempo or Grenade. Do not treat with Rabon if birds are 6 weeks old or less. Wall sprays can reduce numbers of adults. Sevin or Rabon can be used as litter treatments. Frequent and thorough litter clean out will keep beetle numbers down. 10% Beetle Bait (carbaryl) can be spread over the litter as a supplement to residual sprays.

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