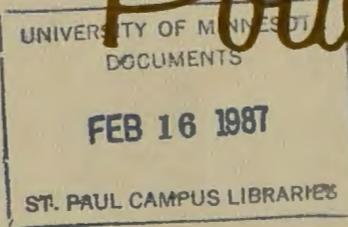




Poultry Patter



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PEST MANAGEMENT IN POULTRY PRODUCTION

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All of us should be aware of the emphatic concern of the consumer for wholesome, clean, and contamination-free food. As recently as a year ago, the seizure of a large amount of processed turkey containing insecticide (heptachlor) residues, once again, reminded the poultry industry of this concern. Poultry egg and meat producers need to produce products in a comparatively pest free environment to insure that a quality product gets to market, as well as to maintain efficient production.

Poultry meat processors in Minnesota have indicated an intention to begin monitoring for residues the meat products they purchase, which are intended for use in prepared items such as soups and meat pies. Because the testing machinery used for determining residues is so sensitive, the producer will be required to exercise additional care in insect control procedures as well as general flock management. Certain chemicals will have to be assiduously avoided and those which can be used must be used correctly.

We need not fear these further restrictions; we should consider them improved guidelines in producing poultry commodities. Those of you in the poultry business 15 years ago, can recall the initial insecticide residue scares. You also can take credit, along with the dairy industry, for being leaders in meeting this earlier challenge. For, as some of you remember, the chlorinated hydrocarbon insecticides were removed from direct application to poultry and dairy at that time. Now we need to be concerned about residues which may accidentally contaminate eggs or meat from materials applied to crops used for feed or through drift from applications to adjacent cropland.

Insecticides to avoid (under all circumstances).

Because we want to emphasize safe insecticide use, we will begin with some do not's.

The insecticides which will most likely impart residues to eggs and meat are the chlorinated hydrocarbons. These include the following insecticides:

aldrin	DDT	chlordane
dieldrin	TDE	toxaphene
endrin	lindane	endosulfan (Thiodan)
heptachlor	BHC	methoxychlor

One should not use these materials on the birds, buildings, premises, or on crops which may go into poultry feed. Do not apply these materials where drift can reach the facility and/or area in which the birds are held.

Minnesota presently has rather severe usage restrictions for DDT, TDE, aldrin, dieldrin, heptachlor, endrin, and lindane. Both the insecticide seller and the user must have a permit. Also, permitted uses are specifically designated. There are no permitted uses for DDT and TDE which will reach poultry directly or indirectly.

Aldrin, dieldrin, and heptachlor, however, have permitted use as soil insecticides for some crops. Although it is unlikely these will find their way into feed, it is far wiser not to use these insecticides in the vicinity of the poultry operation. The greater hazard in such uses is that soil dust will carry the insecticide into the house or the birds will graze on treated ground.

Use Homegrown Feed

These insecticide restrictions can benefit Minnesota poultry men and farmers because there is thought to be less chance of contamination in homegrown feeds. Whenever it is possible and economically sound to use feed grown in Minnesota, the poultry man should do so. Nationwide monitoring of various feeds has shown very low residue levels and we would expect Minnesota feeds to be even freer of insecticide contaminants.

A Look at Some Pest Problems

Poultry lice

Several species of lice occur on poultry: some lice occur only on chickens, some only on other types of poultry. Those commonly found on chickens include the body louse, shaft louse, fluff louse, and head louse.

Bird lice all have chewing mouthparts and feed on dry skin, scales, feathers, and skin exudates. They almost never leave the bird. They are usually passed from bird to bird through contact, hence they will be much less problem in caged layers and with shortened flock turnover.

To examine poultry for lice, part the feathers at a number of places such as near the vent, along the sides, and on the wings. Look for both lice and louse eggs, which will be glued to the feathers. Often severe infestations of either lice or mites are obvious by the parasite appearance on the head or near the vent and sometimes even on the eggs.

Recent information is lacking regarding the effects of lice or mites on egg yields. Infested birds do suffer a skin irritation, become generally irritable, and may develop a thrifty condition.

Mites

Two kinds of mites are commonly found on chickens: the roost or chicken mite was a severe problem in the old coop flocks and the northern fowl mite is interesting because it appears able to feed on a wide range of birds.

The two also differ in that the roost mite spends most of its time off the bird and the fowl mite on the bird. The northern fowl mite is the greater problem of the two. Control of pests which remain on the bird (northern fowl mite) must be directed at the bird, while the roost mite is best controlled by treating the building and roosts.

Bedbugs

We have observed severe infestations of bedbugs in older poultry houses in Minnesota. Bedbugs have sucking mouthparts, feed on bird blood only at night, and are perfectly capable of feeding on man, too. Initial infestations can often be detected by the bug's characteristic smell plus the appearance of defecated, partially digested, blood along cracks and crevices in the buildings.

Flies

Years back we did not pay much attention to the poultry flock fly problem. Now, with larger flocks and the resulting concentrations of manure, house flies, lesser house flies, and blow flies can become a severe problem particularly where moist feed, litter and/or manure are present.

While flies do not directly harm the flock, they are capable of disease dissemination and are good indicators of poor sanitation practices.

Thus sanitation and superior management are initial steps in good fly control. Insecticide use will not substitute for these but will supplement them. Manure and litter removal and the dispersal of this material—so that rapid drying can result—provide fly control that chemical use cannot equal.

Other pests

Occasionally various insects such as meal worms, bran beetles, litter mites, and predaceous mites will develop excessive populations in litter. Although these populations have been looked at as potential disease reservoirs, there is presently little evidence to indicate this. However, the mealworms have shown a distinct tendency to burrow in styrofoam insulation and have, in a few cases, caused moderate to severe damage to structures.

Chemical Controls

Space spray

The space spray is a fine mist spray which fills the entire area to be sprayed, providing a rapid knockdown of flies. A 0.1 percent synergized pyrethrin should be used. There are a number of commercial atomizers available which can be permanently mounted in the building. The sprayers can be activated from a central switch and applications made as needed. Year-round use of the machine will provide very good louse control and acceptable mite reduction.

Bird and litter treatment

Only three insecticides to control lice and mites are permitted for use on birds or on litter. These are malathion, Co-Ral, and carbaryl (Sevin). Where malathion does not provide adequate control, use Co-Ral or carbaryl. All limitations as to number of application, method of application, and rate of application should be rigidly followed.

Liquid sprays are usually the most efficient for use on birds, while dust applications prove superior for use on litter. A mechanical sprayer, such as a knapsack sprayer, greatly speeds treatment of caged layers while dusts can be applied with a grain scoop on litter.

A general rule follows for bird or litter treatments: avoid all contamination of eggs, feed, and water and keep all insecticides out of the nests. Litter treatments will also control the incidental litter insects.

Adult Fly Control

Manure treatment

Where facilities are well constructed and well managed, fly maggot control in manure is often not needed. However, if a fly problem arises, initial controls in the form of baiting, bait sprays, spot treatments, and wall residuals will often forestall excessive larval production in the

manure. The producer should refrain from treating the manure until the condition requires it. In some areas predaceous mite populations consume large numbers of fly eggs and may provide sufficient fly control.

The poultry producer can use chlorfenvinphos (Comp 4072), Ravap (Rabon + Vapona), dimethoate (Cygon, De-Fend) and ronnel (Korlan) for maggot control in manure. Again be very careful that egg, feed, water, nest, and cage contamination do not occur. When this treatment causes undesired liquefaction of the manure, then oil rather than water should be used as a spray diluent.

Adult fly control

Fly control begins with building construction, is aided by good overall management, and should only incidentally be achieved through use of chemicals. When the need of insecticides for fly control is indicated, use only the minimal amount of material required.

Baiting, bait sprays, baited cloths, and spot treatments will often suffice where factors contributing to fly populations are not too bad. Wall residuals using malathion, ronnel (Korlan) or dimethoate (Cygon, De-Fend) takes much larger quantities of insecticide, more application time, and requires removal of the birds when using the latter two.

Fly control in egg rooms can be achieved by using the "No-Past" resin strip which contains 20 percent dichlorvos (Vapona). Decreased ventilation when the egg room is not in use will speed the effectiveness of Vapona.

Summary—

- (1) Do not use chlorinated hydrocarbon insecticides on or near poultry. Avoid contaminated feed.
- (2) Use fresh chemicals precisely as the label indicates. Understand all the limitations and precautions on the label.
- (3) Be sure to wash off any chemical spilled on the applicator. It is good practice to wash your clothing and yourself following use of any insecticide.
- (4) Do not contaminate feed, water, or nests.
- (5) Remove birds when the label indicates this should be done and do not return birds to the facility until the insecticide dries.
- (6) Do not contaminate eggs. Collect all eggs before applying an insecticide.
- (7) Be sure adequate ventilation is present when applying any insecticide.
- (8) Observe tolerances and waiting periods.

Insecticide tolerances and waiting periods

Chemical	Tolerance PPM		
	Eggs	Meat, meat byproducts, fat	Days before slaughter
Malathion	0.1	4.0	0
Co-Ral	0.1	1.0	0
Carbaryl	0	5.0	7
Ravap	0.1	0.1 (0.75)	0

Mention of commercial names does not imply endorsement of those named or criticism of those not named.

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