Lice and mites used to be the primary pest problems in the farm flock. With the development of large flocks, and their housing, other problems are as important as ecto-parasites. Whole flock turnover has reduced louse and mite problems while the larger concentrations of birds have led to a build-up of waste products within which flies and other pests can readily develop.

Good management, including careful overall sanitation, provides the basis for effective insect control. Manure and wet refuse should be removed weekly and spread so that it can dry. Dropping pits should be properly drained; watering systems checked so they neither leak, nor overflow; and spilled feed minimized. When constructing new housing, ease of cleaning and maintenance should be first considerations.

If it becomes necessary to use an insecticide, follow the directions and precautions on the label. Do not contaminate feed and water. Use recommended rates of application and observe required intervals between treatment and slaughter or marketing. Remember that malathion, Co-Ral, and Ravap have 0.1 parts per million residue tolerance in eggs while all others have zero or no residue tolerance.

No chlorinated hydrocarbon insecticides are recommended for use on poultry, poultry range, on feed crops for poultry, or in poultry facilities. Use only the following suggested insecticides and use them only as labeled and recommended.

Flies
(For control of houseflies, blowflies, lesser houseflies)

Space Sprays
Synergized pyrethrins 0.1 percent. Use as a fine mist-like spray or aerosol.

Residual Spray
Use one of the following:
- malathion 57 percent emulsion—1/2 gallon per 25 gallons of water.
- ronnel (Korlan) 24 percent emulsion—1 gallon per 25 gallons water.
- dimethoate (Cygon-2E) 24 percent emulsion—1 gallon per 25 gallons water.
- Rabon 24 percent emulsion—1 gallon per 25 gallons water.

Apply residual sprays to fly resting places: walls, ceilings, windows, doors, beams, alleyways, etc. Do not spray birds, feed, or water. Gather eggs and remove birds before treating with dimethoate and ronnel. Residual insecticides will last much longer when applied on top of, and 10-14 days after, white-washing.

Flies
(For control of houseflies, blowflies, lesser houseflies)

Spot Sprays

- Use one of the following:
  - dichlorvos (Vapona) 0.5 percent spray
  - dimethoate (Cygon-2E) 1.25 percent spray
  - naled (Dibrom) 0.6 percent spray

  Apply as a coarse droplet spray to door and window frames, beams, etc. Do not spray entire house. Do not use Dibrom or Cygon when birds are in the house. Residual and spot sprays will increase in effectiveness by adding sugar or molasses to the spray.

Baits and Baited Sprays

Use the dry or liquid ready-to-use baits containing diazinon, naled, trichlorfon (Dipterex), dichlorvos, or malathion as directed on the label.

Prepare liquid baits with the following ingredients in 2 1/2 to 3 gallons of water:
- dichlorvos 24 percent—3/4 cup plus 1 1/2 pounds sugar;
- naled (Dibrom) 41 percent emulsion—2 tablespoons plus 1 pound of sugar; or
- ronnel (Korlan) 24 percent emulsion—1 quart plus 1 pound sugar.

Apply to fly resting places, or make bait stations by saturating pieces of burlap or screen. Place these near areas where flies gather. Dichlorvos and naled will provide a rapid knockdown while malathion and ronnel will provide a much longer control with less rapid knockdown.

Fly Control in the Egg Room

Slow release resin strips (No-pest strip) will provide excellent fly control in the egg room. These contain 20 percent dichlorvos and should be used as recommended in areas where there is no cross ventilation.

Larvacides

Use one of the following to control maggots in manure under caged layers or birds on wire (do not apply to birds, feed, water, or cages):
- chlorfenvinphos (Compound 4072) 25 percent emulsion—1 cup in 5 gallons of water per 125 square feet.
- dimethoate (Cygon, De-Fend) 23 percent emulsion—2 pints in 5 gallons of water per 400 square feet.
- Rabon + Vapona (Ravap) 27 percent emulsion—1 1/2 pints in 6 gallons of water for 100 square feet.
- ronnel (Korlan) 24 percent emulsion—2 quarts in 5 gallons of water for 500 square feet.
PESTS ON THE BIRD
(For control of Lice, Northern Fowl Mite, and Chicken Mite.)

Use one of the following:

■ carbaryl (Sevin) 5 percent dust. Apply 1 pound per 100 birds or 1 pound per 40 square feet of litter.

■ carbaryl (Sevin) 80 percent sprayable. 1 1/2 pounds in 25 gallons water.
  Apply 1-2 gallons per 1,000 square feet of house area.

■ carbaryl (Sevin) 80 percent sprayable. 4 ounces in 5 gallons water. Use 1 gallon per 100 birds with cylinder sprayer.
  This treatment is a supplement to spraying roosts and building.

Do not use carbaryl within 7 days of slaughter. Remove or cover feed, water, nests, or eggs during application. Do not make applications on birds more often than once every 4 weeks.

■ malathion 4 or 5 percent dust. Apply 1 pound per 100 birds and/or 1 pound per 40 to 50 square feet of litter.

■ malathion 57 percent emulsion. 1/2 pint in 7 1/2 gallons of water.
  Use 1 gallon per 100 birds applied uniformly as a fine droplet spray. Do not overtreat birds. Apply to litter, floor, and walls to cover 100 square feet.

■ coumaphos (Co-Ral) 1/2 percent dust in poultry duster. Apply lightly and uniformly to bird. Also may be used as litter treatment at rate of 1 pound per 20 square feet. Do not apply oftener than once every 7 days.

■ Rabon 24 percent emulsion. ½ gallon per 25 gallons water or 50 percent wettable powder 2 pounds per 25 gallons. Treats 2,500 birds. Direct application to caged birds or floor managed birds. Wait 14 days between treatments.

LITTER PESTS

Today, the major poultry producers raise birds for a predetermined number of weeks, depending on marketing potentials. For economic reasons, the waste products are usually allowed to accumulate until the entire flock is removed for slaughter. This accumulation of waste for prolonged periods provides an optimum environment for various species of flies, stored-product insects, and dung beetles. For example, the lesser mealworm appears to be especially prevalent throughout Minnesota in poultry brooder houses where it breeds and feeds in the mixture of litter, feed, and feces. Recently this insect became known as a source of acute avian leukosis, a disease that cost poultry producers annually millions of dollars throughout the United States. Preventing infestations or, at least, maintaining low populations of the lesser mealworm may be of more importance economically than previously understood.

Lesser mealworms and other insects that infest the litter may be prevented or controlled with the following program:

■ Use 1 pound of carbaryl per 1,000 square feet of floor space and over an area within 20 feet outside the house as soon as birds are removed.

 ■ Apply carbaryl at 1 to 2 gallons of 0.5 percent/1,000 square feet or malathion (57 percent) at 1/2 gallon per 25 gallons of water.

After litter is replaced or while litter is being replaced, apply:

■ carbaryl—5 percent dust—1 pound/40 square feet.

■ malathion—5 percent dust—1 pound/40 square feet.

As needed, spot treat with malathion or Sevin (5 percent) dust in areas where high populations of lesser mealworms concentrate.

Residues in parts per million (ppm) permitted in eggs and meat

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