

# Controlling INSECTS AND MITES OF SWINE

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ALL INSECTICIDES AND MITICIDES are poisonous in varying degrees. Handle them cautiously so that they will not poison livestock, children, or the user. When using insecticides on swine do not increase the dosage. Measure all materials carefully.

Apply chemicals to swine no closer to slaughter than the time given in this bulletin. Read the package label for additional instructions on how to use pesticide chemicals safely. Meat can be seized if it contains more insecticide or miticide than allowed.

There is some danger to swine when spraying them in winter. Instead, use a granular or dust insecticide when possible. However, if you must spray in winter treat on a warm day and, if this is done in a barn, turn the animals out immediately to dry. You are taking a risk if you spray during cold weather.

Do not allow insecticides, fungicides, or nematocides to drift onto pastures, hayfields, food crops, wood lots, non-crop areas, lakes, or ponds unless there is no danger involved. Certain restrictions placed on chemicals when used on animal or human food crops are listed in this bulletin. When applied to water or wildlife areas, some of the materials listed may kill fish or wildlife.

To determine the dangers of drift, read the label on the package. Follow the same restrictions for insecticide and miticide drift as for direct application of the same materials to food crops. For dangers of fish and wildlife poisoning from insecticides, fungicides, and nematocides applied to water or areas other than lands, get information from your county conservationist.

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## HOG LOUSE

The hog louse is dull gray-brown and  $\frac{1}{4}$  inch long. It pierces the hog's hide, removing blood through tubelike mouth parts.

The hog louse lives in colonies. During cold weather they are found especially inside the legs and ears, and in folds of the skin of the neck. But any part of the animal's body which offers protection may harbor the pest.

Eggs are laid throughout the winter and are glued to the hairs close to the skin. During this time of year, eggs take about 2 to 3 weeks to hatch, and the immature stage lasts 2 weeks. Immature stages and adults live entirely on the animals, except when they fall off accidentally.

### Control

The hog louse is most damaging in cool or cold weather. A late fall granular, spray, dip, or dust treatment is preferable for this insect. Repeat with a spray or dust in 14 days if lice are still present on the hogs. In making this determination look also for small lice that have hatched from eggs SINCE THE FIRST TREATMENT. Use only approved insecticides for the 14 day treatment (see the Section on hazard and use warnings). Note: If lice occur on swine in summer, use the same methods and insecticides as for the late fall treatments.

### Granules

Ronnel, 5% granules. Apply  $\frac{1}{2}$  pound of 5% granules to each 100 square feet. Apply the treatment with a scoop, can, or other convenient applicator. But these simple methods do not mean the treatment can

be used carelessly. For best results, apply the granules evenly.

Note: Treat in early December for winter control of lice. See the hazard and use warnings at the end of the bulletin.

### Sprays

Different spray pressures are needed for control of some insects and mites affecting swine. For example, sprays for mites must be applied at higher pressures than for lice. Pressures of 100 to 250 pounds are normally high enough to control most insects and mites of swine, *providing the higher pressures are used for mites causing mange.*

Note: When low spray pressures of less than 100 pounds are used, a small amount of wetting agent will improve sticking and penetration (see instructions on the label for amount). Do not add too much wetting agent because it will cause excessive run-off reducing the effectiveness of the spray.

To each 100 gallons of water in a sprayer, use only one of the following insecticides and the amount suggested. When the amount of water in the sprayer is less than 100 gallons, use a proportionate amount of insecticide, that is, one-half the suggested amount for 50 gallons, etc.

Use only one of the following sprays. The amount to apply to each animal depends on the size of the animal and the thickness of hair. Spray thoroughly but avoid prolonged treating. Note the exception for Clodrin.

- *Coumaphos (Co-ral)*, 8 pounds of 25% wettable powder.
- *Clodrin*, 1 gallon of an emulsion containing 2 pounds of active ingredient per gallon. Apply no more than 1 gallon per animal.
- *DDT*, 2 gallons of an emulsion containing 2 pounds of active ingredient per gallon, or 8 pounds of 50% wettable powder.
- *Dioxathion (Delnav)*, 2 2/5 pints of an emulsion containing 4 pounds of active ingredient per gallon.
- *Lindane*, 2 pints of an emulsion containing 1.6 pounds of active ingredient per gallon, or 1 3/5 pounds of 25% wettable powder.
- *Malathion*, 6 1/2 pints of an emulsion containing 5 pounds of active ingredient per gallon, or 16 pounds of 25% wettable powder.
- *Methoxychlor*, 2 gallons of an emulsion containing 2 pounds of active ingredient per gallon, or 8 pounds of 50% wettable powder.
- *Ronnel (Korlan)*, 11 1/2 gallons of an emulsion containing 2 pounds of active ingredient per gallon.

- *Toxaphene*, 1 gallon of an emulsion containing 4 pounds of active ingredient per gallon (1/2 gallon of an emulsion containing 8 pounds of active ingredient per gallon), or 8 pounds of 50% wettable powder.

See the hazard and use warnings at the end of the bulletin.

### Dips

Dipping hogs for control of insects and mites is not too common. But if this method is preferred, do the following:

For best results, both the body and the head must be dipped. Allow no animal to escape dipping. Make a new batch of dip when it becomes dirty. Warning: Do not add chemical to old dipping water. Start from scratch when making a new dip or adding more chemical. If a chemical is concentrated in a dip by using too much or by adding to an old dip, poisoning of animals and excessive residues in the meat can result.

To each 100 gallons of water in a dipping vat, use only one of the following insecticides and the amount suggested. When the amount of water in the dipping vat is less than 100 gallons, use a proportionate amount of insecticide, that is, one-half the suggested amount for 50 gallons, etc.

- *DDT*, 2 gallons of an emulsion containing 2 pounds of active ingredient per gallon, or 8 pounds of 50% wettable powder.
- *Dioxathion (Delnav)*, 2 2/5 pints of an emulsion containing 4 pounds of active ingredient per gallon.
- *Lindane*, 2 pints of an emulsion containing 1.6 pounds of active ingredient per gallon, or 1 3/5 pounds of 25% wettable powder.
- *Methoxychlor*, 2 gallons of an emulsion containing 2 pounds of active ingredient per gallon, or 8 pounds of 50% wettable powder.

### Dusts

Dusts are used as bought without further dilution with fillers or mixing with water. Apply carefully to louse infested areas, and generally over the animal's body. Dusters should be power driven, except with a few animals where a hand duster may suffice.

Use only one of the following:

- DDT, 10%
- Lindane, 1%
- Malathion, 4% or 5%
- Rotenone, 3/4 or 1%

See the hazard and use warnings at the end of the bulletin.

## SARCOPTIC MANGE OR ITCH MITE

Sarcoptic mange or itch is caused by a small (1/50 inch long) white or yellow mite that bores into the hide. An animal having sarcoptic mange is unthrifty: its hide is rough and scaly, the hair stands erect, and it rubs against objects such as fence posts and corners of buildings.

The areas around the eyes, ears, along the top of the back and neck are more often affected. These places may be inflamed, scabby, and covered with pimples. The problem occurs usually in the fall, winter, and spring.

The mange mite bores into the skin. Slender winding tunnels of nearly 1 inch in length occur throughout the infested part of the body. Eggs are laid in the tunnels; they hatch in 3 to 10 days. Under favorable conditions, the mites can complete a generation (brood) in 2 weeks.

Sarcoptic mange is highly contagious. The mites and their eggs can live in bedding and other places for weeks without food, making infestation or reinfestation of healthy animals easy.

### Control

Hog lice and mange can be controlled at the same time, providing a chemical effective against both is used. Lindane, malathion, or toxophene sprays as suggested for hog lice are also effective against sarcoptic mange. Use only one material and the dosage rates as given for the hog louse. A dust of lindane, malathion, or toxophene is not so effective as a spray of these same materials for sarcoptic mange.

A more thorough job of spraying or treating must be done for sarcoptic mange than for lice. Treat the animals thoroughly, paying special attention to the scabby areas.

### Several other insects annoy and injure swine

#### STABLE FLY

The adult can be told by the slender, stiff beak that projects forward from the lower surface of the head and by the seven spots on the broad, gray abdomen.

They cluster around the ears, face, and legs of animals. It is here that they suck blood and injure the hogs.

### Control

Since the insect breeds in manure and fermenting damp straw, scattering or handling them in such a way that they will dry out will help control the pest. Other control measures for treating adult stable fly nesting places *inside* and *outside* hog houses follows. *Use only one material and the dosage given to 25 gallons of water.*

- *Dimethoate*, 1 gallon of an emulsion containing 2 pounds of chemical per gallon. Apply 1 gallon of spray to each 1,000 square feet of surface.
- *Diazinon*, 4 pounds of 50% wettable powder. Apply 1 to 2 gallons to 1,000 square feet of surface.
- *Ronnel*, 1 gallon of an emulsion containing 2 pounds of chemical per gallon. Apply 1 to 2 gallons of spray to each 1,000 square feet of surface.
- *Malathion*, 20 pounds of 25% wettable powder, or 1 gallon of an emulsion containing 5 pounds of chemical per gallon. Apply 1 to 2 gallons of spray to each 1,000 square feet of surface.
- *Lindane*, 2½ pounds of 25% wettable powder. Apply 1 gallon of spray per 1,000 feet of wall surface in barns or sheds.

## HORSE AND DEER FLIES

These range from 1/8 to 1/2 inch long. They are usually black or brown; many of them have brilliantly colored eyes. The smaller kinds can have brown-banded wings. The females cut the skin with knife-like mouthparts and suck blood from the animals. A drop or two of blood usually oozes from the wound.

### Control

Since the maggots of horse and deer flies live in the mud of shallow lakes and swamps, the adults primarily cause trouble near wet areas.

Horse and deer flies are hard to control. The following insecticides will give relief to the animals, but complete control may not be realized. Do the following:

- *Dichlorvos* (DDVP), 1% oil spray. Apply 1 fluid ounce as a mist. Treat daily those areas on the animals visited by the flies.
- *Ciodrin*, 5 quarts of an emulsion containing 2 pounds of actual chemical per gallon—to 100 gallons of water. Use 1 to 2 quarts of spray per animal. Treat the animals where the flies feed. *Apply only once a week.*

## BLACK FLIES

Black flies (or buffalo gnats) are small, 1/6 inch long, and hump-backed. They have stout legs and delicate wings. Their antennae are heavy, eleven-segmented, and as long as the head. They suck blood from around the nostrils, ears, and eyes, inflicting painful wounds.

### Control

The maggots of black flies breed in swift running brooks, small rivers, and streamlets. Hence, annoy-

ance from these pests will be more noticeable in those areas than anywhere else in Michigan.

For insecticides, use the same materials as given for horse and deer flies.

## FLEAS

These pests of swine are 1/16 inch long, brownish-red or black in color, and very narrow from side to side. They jump strongly when disturbed.

### Control

These pests usually originate from eggs in and around swine yards. Cats, dogs, rats (and other rodents) are normally the preferred hosts of the fleas attacking swine. *Consequently, control of fleas on dogs and cats and the control of rodents is very helpful in keeping the flea problem to a minimum on hogs.*

For chemical control of adult fleas on swine, use the same materials as suggested for the hog louse. In addition, spray or dust the soil surface of yards with the same materials. Either DDT, methoxychlor, lindane, or ronnel (spray or granular) is a good choice for such a treatment. If possible, transfer the animals to another yard or to pasture for a few days. This will allow for more effective treatment for the fleas and will prevent overdosing the swine with the chemical.

### WARNINGS ABOUT USING INSECTICIDES

- Do not treat sick or emaciated animals, or those fatigued from shipping or weaning.
- Avoid contamination of feed and water.

Following are specific instructions for the chemicals:

- *Coumaphos (Co-ral)*: Do not treat young pigs less than 3 months of age. Spray those 3 to 6 months of age only lightly. Avoid treating animals 10 days before or after shipping, weaning, or exposure to disease. Do not use with oral drenches or other medications. Do not use coumaphos with synergized pyrethrins,

allethrin, or synergists. Stop treating 7 days before slaughter of any animal.

- *Ciodrin*: Treat animals thoroughly, but avoid prolonged spraying (drenching). Do not apply more often than every 7 days.
- *DDT*: Use only once and apply no treatment closer to slaughter than 30 days.
- *Dichlorvos (DDVP)*: Daily use in water as a mist spray is permissible. But continue treatments only as long as needed.
- *Dioxathion (Delnav)*: Avoid dipping animals less than 3 months of age. Apply it only at 2 week or longer intervals.
- *Diazinon*: Apply to buildings only.
- *Dimethoate*: Apply to buildings only.
- *Lindane*: Use only once. Stop dust or spray treatments 30 days before slaughter; dips, 60 days. Do not dip animals less than 3 months old. Do not use the amount suggested for buildings for treating animals.
- *Malathion*: Do not treat animals less than 1 month of age. No limitation on slaughter animals, but treating too close to slaughter may not have practical value.
- *Methoxychlor*: This material is fairly free of hazard, but prolonged treating should be avoided.
- *Ronnel (Koran)*: Apply only at 2 week or longer intervals. Stop treating 6 weeks (42 days) before slaughter of any animal. When ronnel granules are used, do the following: Remove swine from treated bedding or replace it with untreated bedding, at least 14 days before slaughter.
- *Toxaphene*: Avoid prolonged treating. Stop its use 28 days before slaughter of any type of animal.

Read the package label. Follow directions.

