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Controlling External Swine Parasites

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Mixing, safety, restrictions and precautions for insecticides used to control lice, mange and flies in swine are described in this NebGuide.

Hog Lice and Mange Mites

External parasites of swine include the hog louse and two species of mange mites, the common itch mite and the less common hog follicle mite. Excessive scratching and rubbing by pigs nearly always indicate an infestation of hog lice or mange mites.

Hog lice and mange mites infest a high percentage of swine slaughtered at Midwest slaughter plants.

Hog Louse

The hog louse is the largest of the domestic animal species of lice but may go undetected because its tan coloration and that of the pig may blend. It is a blood-feeder both in the immature and adult life stages. The life cycle from egg to adult averages 24 days, but the reproduction rate increases in the winter and declines with warm weather. Lice are spread by animal contact or infested bedding.

Louse infested swine itch and the resulting scratching cause the skin to become thickened and cracked, resulting in sores. Infested animals are nervous, gain less weight, are less feed-efficient and tend to be more susceptible to diseases than lice-free animals.

Hog Lice Control

Sprays and powders most often are used for hog louse control. In addition, some systemic insecticides are registered as pour-ons for louse control. See EC1550, *Nebraska Management Guide for Arthropod Pests of Livestock and Horses*, for recommended insecticides.

Swine Mange Mites

Mange mites are microscopic arthropods that infect skin. There are several different species of mites that infect a variety of livestock hosts. Each species of mite is host-specific, that is, swine mites (*Sarcoptes suis*) infect only swine and are unable to survive on other animals.

Mange mites burrow in the skin of swine. The burrowing causes intense itching; subsequent scratching, primarily with hind legs, and rubbing, which leads to lesions. The lesions may appear anywhere on the body but usually start around the head, then the hind legs. Mite production increases rapidly under the scab. Infested skin areas become scruffy, inflamed, raw and cracked. Hair bristles become stiff and upright and hair losses occur, giving an infested animal a rough unkept appearance. A light infestation may go unnoticed, particularly if it starts in the ears. A positive mange diagnosis can be made only by examining skin scrapings deep enough to penetrate mite burrows under magnification because the mites are so small.

Mange-infested animals fail to gain properly, are poor feed converters and are more susceptible to diseases. Market hogs may be docked for appearance and reduction in hide value. The mites spread by animal contact.

Mange Mite Control

Two methods of mange mite control are available:

1. Periodic treatment with products that kill adult mites, usually spray-type applications. The applied insecticide kills adult mites on the pig, but not eggs. Eggs will hatch in about 10 days and begin to grow into adults. Treatment is usually repeated at a two to three week interval to kill the newly hatched mites before they can mature and start to lay more eggs. Treatment is never 100 percent successful because many mites are burrowed deep under the pig's skin where the insecticide cannot penetrate. Frequency of treatment will be determined by severity of infection and ease of application. Inadequate mange control with spray-on products can occur if timing of successive applications is poor. Another shortcoming is failure to thoroughly spray the entire pig, especially inside the ears, the belly and underside of the legs. A high-pressure sprayer should be used because the hair tends to shed water. Low-pressure sprays allow the insecticide to just run off the pig and not reach the skin and the mites.
2. "Permanent" elimination of mange mites. The endectocides Ivomec and Dectomax are administered by injection, killing both adults and immature forms. Strategic use of the endectocides can rid a herd of mange so that subsequent treatments are unnecessary.

Eradication of Mange

Mange mites can survive off the pig only for about three days. After a pig is given an injection of an endectocide the drug stays in the pig's body at high levels for one week. If the mange mites stay on the pig they will die, and if they leave, they will die. Although endectocides are deadly to mites, they do not die immediately after exposure, and can live about three more days after an endectocide injection. If the infected, treated pig comes into contact with an untreated pig during this time, the infection will spread.

Mange eradication is accomplished by injecting each pig on the farm with an endectocide, so no mange mites survive on the pigs. All pigs must be injected on the same day. If half the pigs are treated one week and the other half are treated the following week, infection may spread from the second half of the pigs back to the first half. It is extremely critical that

each pig receives the proper dose of the endectocide. Even one untreated pig can reinfect the entire herd. Improper dosing may occur if 1) pig weights are estimated rather than measured on a scale, 2) the drug runs back out of the injection site, or 3) care is not taken to accurately mark each pig as it is treated. Piglets born within five days after the herd is treated also must be given endectocide injections, as unprotected piglets could be infected by mites from their dam.

Eradication usually is performed in the summer because 1) off-pig survival time of mange mites is somewhat shorter in hot weather than in cooler weather, 2) warmer weather is more conducive to proper handling and administration of an endectocide, and 3) if the finishing building is partially empty, there will not be a problem with pipes freezing. Because treatment with endectocide is fairly expensive it is common to move the heavier finishing pigs off the farm before treating the herd. Also there is a 24-day or five-day withdrawal period, depending on the insecticide. Extra finishing space may be rented, or if the eradication is planned well in advance, a group of pigs may be sold as feeders, and the eradication planned for the time that those pigs would have reached market weight.

Because there is great potential for not carrying out all steps of the eradication, many producers choose to repeat the entire process one month after the first treatment of the entire herd.

Possibly a third technique for mange control is spot treatment with an endectocide. This is mostly used by farrow-to-finish producers who lack the resources to eradicate mange and who find it difficult to use spray-on applications especially in winter. Sows are injected about two weeks before they farrow. At the time of farrowing, sows are relatively free of infection. Their piglets start life free of mange and as long as they are kept isolated from older pigs, will remain uninfected.

Flies

House flies and, to a lesser extent, stable flies, often are found in large numbers at swine facilities. Both fly species have been implicated in transmitting hog cholera and other diseases.

Sanitation is the first step to control a fly problem. Manure may accumulate in shelters and around feeders for pigs in lots and should be removed at 10-day intervals to avoid fly breeding problems. Confined swine housing systems sometimes create fly breeding problems when manure drops through slatted floors of the housing and is allowed to accumulate under the housing. If manure is allowed to crust at the surface, house flies will breed in the pit.

Insecticides, if used in combination with sanitation and on a regular basis, can give good fly control. Without sanitation, insecticide controls may fail.

Insecticide Treatment of Breeding Areas

Generally, applying insecticides to fly breeding areas is impractical. The insecticide breaks down rapidly in the acid medium of the manure and insect resistance to an insecticide can build rapidly with this type of treatment.

Lime can be used as a fly larvicide. Use enough lime to cover all pit material. Make sure no lime remains on the floor because of danger of skin burns on the pigs and possible feed or water contamination. Liming should be done at weekly intervals.

Residual Sprays

Residual insecticides can be applied to fly resting areas in and around swine housing. Flies absorb enough insecticide while resting to kill them. Apply the spray to the point of runoff, but do not allow it to puddle. Make sure food, water and animals are not contaminated.

Area Sprays

Apply area sprays in and around buildings wherever flies congregate. Area sprays must contact the fly to be effective. These sprays can be applied by mist blowers, hydraulic sprays and fogging devices. Adjust hydraulic sprays to deliver a fine mist. Use foggers only when the wind will allow the fog to drift slowly through the fly infested area. If confined housing units have little ventilation, move animals out prior to spraying in the building.

Baits

Fly baits are effective only on house flies. They will help if used in conjunction with one or more of the methods previously discussed. Distribute dry baits along walls, fences or other areas where flies congregate, but locate baits where pigs cannot feed on them.

Feed Additives

Rabon (stirofos) has been registered as a swine feed additive for fly control. The product is 7.6 percent Rabon and is added to feed at a rate of 1.3 lbs/ton of feed for growing and finishing animals weighing less than 200 pounds, and 2.6 lbs/ton of feed for mature animals weighing over 200 pounds. There is no treatment-slaughter waiting period.

- Read and follow label directions for mixing, safety, restrictions and precautions when using any of the insecticides mentioned in this publication.
- Insect control suggestions in this guide are based on University of Nebraska research results, U.S. Department of Agriculture recommendations and Environmental Program Agency label registrations.

To simplify technical terminology, trade names sometimes may be used. No endorsement of products is intended nor criticism implied of products not mentioned.

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