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External parasites of swine

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no. 8.008

Quick Facts

Swine parasites can mechanically transmit diseases.
Losses of all causes from hog parasites are estimated at $10 to $50 million annually.
The hog louse is a blood-sucking parasite that carries out all of its life cycles on the skin surface.
Mange mites, of which two types affect swine, will burrow into the upper two-thirds of the dermis and therefore are difficult to treat and control effectively.
Both types of parasites are exclusive to hogs and are transmitted primarily by hog-to-hog contact.

External parasitism is a continuing problem for swine producers. Estimates of losses to louse and mange infestations range from $10 million to $50 million annually. Lice and mange mites also can mechanically transmit diseases such as swine pox and eperythyrozoonosis. The major problems are caused by the hog louse—*Haematopinus suis*—and mange mites—*Sarcoptes scabiei* and *Demodex phylloides*.

Life Cycle of the Hog Louse

The hog louse (Figure 1) is a blood-sucking parasite that feeds exclusively on the pig. It is a large pest, about ¼ inch (6 millimeters) that clings to the hair of the neck, behind the ears and in the folds of the skin. It can survive for 2-3 days off the pig in warm bedding, but it will not generally attack other species. The life cycle of the louse takes about 25-30 days to complete from adult-egg-adult. The adult life span is about 35 days.

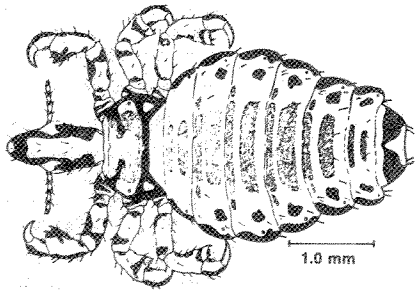

Figure 1: The hog louse is a bluish-black pest approximately ¼ inch long. It will be most readily observed on the necks of infested pigs.

An adult female will lay 3-4 eggs daily for approximately 25 days. These eggs are attached to the hair shaft and hatch as nymphs (immature forms) in 12-20 days. Nymphs are similar in structure but smaller than the adult. The nymphs will go through three maturation stages to adulthood. During development, lice may feed in clumps, generally on the more tender areas of the skin. Hog louse infestation starts around the ear and expands to the lower body and then to soft-skinned abdominal areas. All stages of the life cycle occur on the skin surface. The pest does not burrow into the skin.

Symptoms

Mild louse infestations may cause no clinical problems. In more extensive infestations, the pests can be seen as dark bluish-black discolorations on the skin. The continuous sucking of blood and lymph causes irritation to the skin, leading to some itching.

Damage from lice is primarily irritation, making the hogs restless and decreasing feed intake and growth rate in growing-finishing pigs. In addition, anemia may occur in young pigs because of blood loss. Lice also are capable of mechanically carrying swine pox virus, *Eperythrozoon suis* and other diseases to susceptible pigs.

Life Cycle of Mange Mites

Mange mites of two types affect swine. *Sarcoptes scabiei* var. *suis* is the most common mite found on swine. *S. scabiei* burrows into the upper two-thirds of the dermis. Initial infestation generally begins in the inner ear and spreads over the head, along the neck and then across the body. The life cycle takes about 15-25 days to complete.

New females, as they mature, mate close to the skin surface and then begin new tunnels for their young. This is the only external exposure during the life cycle. The adult female lays 1-3 eggs daily for about 15 days. These eggs hatch in tunnels at about 5-10 days and mature to adults in 10-15 days. The mature female dies approximately 30 days after reaching maturity.

Symptoms

Initially, with mange mite infestation, the animal's skin has small raised areas covered with brownish scabs. This is followed by hyperkeratosis—thickened, rough skin. An intense itching may accompany the infestation, although in mild infestations itching may be negligible. The activity of the mites increases as skin temperature is elevated by fever or high environmental temperature. This increases the irritation and feeding rates and may intensify the itching in affected pigs.

Probably the highest mite activity is found during the summer but creates less of a problem for producers because of less contact spread and better control ability. High winter populations probably reflect the difficulty of treatment during cold weather and more contact spread.

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Treatment

Successful treatment of lice and mange is a difficult assignment because it requires a complete break in the parasite's life cycle. Because of the increased susceptibility of baby pigs to lice and mange and the increased toxicity of many chemicals to pigs under weaning age, the sow becomes a focal point for pest control measures.

Sows should be routinely treated for mange control 30 days prior to farrowing. The mange mites, because of their habit of burrowing deep into the skin and the tissue debris which results, are protected from many surface-applied products.

High-pressure spraying (100-250 psi) to force insecticide into the tunnels and to cover the animal completely particularly around the nead and neck, with 2-4 quarts (2-4 liters) of finished spray is required. Because of the better coverage and penetration, spray applications currently are most successful in mange control. Eradication of sarcoptic mites is extremely difficult under field conditions; however, routine spraying will keep the pest in check.

A successful sow pest control program should be followed by a maintenance program for the growing-finishing pig. Animals about 8 weeks of age should be sprayed with an approved insecticide. A follow-up spraying in 2 weeks is recommended for better control. Additional applications can be made as needed to market weight provided pre-slaughter intervals are followed.

If the sow pest control program has not been followed, mange infestation in suckling pigs can be reduced by applying malathion dust to the pigs. When they are more than 8 weeks of age, the control program listed above must be followed.

Successful louse control can be accomplished with all the products labeled for mange control. Additionally, CoRal®, Ciodrin®, Ciovap® and Rabon® sprays, Tiguvon® pour-on and CoRal®, malathion and Rabon® dusts have been used successfully.

Use of Rabon®, malathion, or CoRal® dust on bedding in conjunction with spray application may make the treatment more effective. Malathioin dusts can be used directly on the suckling pig for louse control. However, these treatments of the suckling pig are not routinely needed if a successful gestating-sow pest control program is carried out.

For louse control on lactating swine, Tiguvon® 3 percent pour-on can be used without adversely affecting the suckling pig. No known treatment for demodectic mites is available. Infected animals should be removed from the herd to minimize further transmission.

Weather Influences

During severely cold weather, malathion, CoRal® or Rabon® dust as bedding treatments, or malathion or Rabon® as direct applications can be used for temporary louse control. Spray applications can be made during winter months by selecting sunny, calm days when the temperature is above freezing. Small portable, low-volume misting applicators can be used for good parasite control. Insecticides can be in an oil or water base with a small quantity (4-6 ounces per animal) applied. Because of the smaller volume, fewer problems of chilling are encountered during cold weather application.

Table 1 lists currently labeled products found successful in external parasite control. Products, use concentrations and approved uses may change periodically. Read and follow the product container label to insure safe and effective treatment.

Pre-slaughter intervals must be carefully observed because of the residue-producing potentials of these chemicals. Read the label for information on withdrawal times, proper product usage, and application rates. Do not overtreat animals with any pesticide.

Table 1: External parasite control products.

Compound	Usage	Sarcoptes	Demodex*	Lice	Pre-slaughter interval (days)	Comments
Ciodrin, 14.4 EC	1 qt/12 gal water			X	0	2 Sprays 10-14 days apart. Repeat as needed, but not less than 7 days apart.
Co-Ral 25 WP	2 lbs/100 gal water			X	0	2 sprays 10-14 days apart. Do not treat animals less than 3 months old.
Co-Ral ID	1 oz/animal			X	0	Especially around back and shoulders. Repeat as needed, but not less than 10 days apart.
Ectiban 5.7 EC	1 qt/25 gal water	X		X	5	Repeat after 14 days.
Ectiban .25 D	1 oz/animal			X	5	Repeat after 14 days.
Lindane 12.4 EC	3 pt 12.4 EC or 1 qt 20 EC in 100 gal water	X		X	30	2 sprays 1 week apart. Do not treat pigs less than 3 months old. Do not treat sows for 2 weeks before or 3 weeks after farrowing.
Malathion 57 EC	1 qt/25 gal water	X		X	0	Do not treat animals less than 1 month old. Repeat in 10 days if needed. Treat animals, bedding, walls.
Malathion 4-5D	¼-½ tsp for animals less than 1 month	Partial		X	0	Apply thoroughly to animals, pens, bedding. Repeat as needed.
Methoxychlor	8 lbs/100 gal water			X	0	Repeat in 2 weeks if necessary.
Rabon 3D	3-4 oz/animal			X	0	Do not retreat for 14 days. For severe infestations use 1 lb/150 sq ft of bedding.
Tiguvon 3% Pour-on	½ fl oz/100 lb body weight			X	14	Do not retreat for 35 days. May be used on gestating and lactating sows.

This table represents information as presented on current labels. Label changes can occur at any time. Before using any pesticide, read and follow the label directions.

**There are no known treatments available for Demodex infections in swine.*