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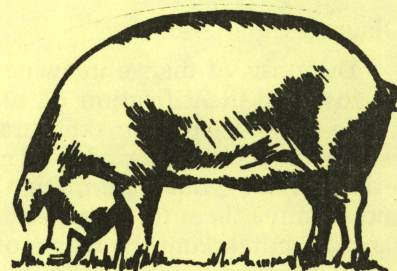
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UNIVERSITY OF IDAHO

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External Parasites of Swine

HOG MANGE



Infestation of the skin with mange mites is a common and economically important disease of swine. Mange disease is worldwide in distribution and can affect pigs at 2 weeks of age and older. Many pigs harbor the mange parasites for prolonged periods with no apparent clinical signs or harmful effects. However, severe infestation can result in considerable damage to the skin. Evidence also suggests that mange is directly or indirectly associated with other conditions such as malnutrition, diarrheal and systemic diseases and various debilitating problems.

Cause

Mange in pigs is most commonly caused by *Sarcoptes scabiei* var. *suis* (sarcoptic mange) and less commonly by *Demodex phylloides* (demodectic mange). Although both species of mites will infect other animals and man, they are usually host-specific, permanent parasites of pigs and normally spend an entire life cycle on the host.

Adult sarcoptic mange mites are small, irregularly round, grayish-white and barely visible to the naked eye. They normally burrow and make small tunnels within the outer layers of the skin of the inner ears and over the face, neck and shoulders. In severe cases the parasite can be found within the skin most anywhere on the body. All life cycle stages of the parasite are usually found within the skin layers rather than on the surface.

Adult females lay many eggs which hatch into larvae in 5 days. Adults form after a series of molts. The usual life cycle from egg-laying until the development of an egg-bearing adult is 10 to 15 days. Because of the large number of eggs laid by adult mites and the relatively short life cycle, many generations of the parasite can develop on a host over a short period of time.

The normal habitat of the cigar-shaped demodectic mange mites is within hair follicles of the skin. Much less is known about the life cycle of this parasite than about the sarcoptic mange mite although the life span ranges from 1 to 2 months.

Transmission

Both sarcoptic and demodectic mange mites are transmitted between pigs by direct contact when the parasites happen to have migrated to the skin surface. Sarcoptic mange mites and mite eggs can survive off the animal's body for 2 to 4 weeks but drying and exposure to direct sunlight will kill them in 1 to 2 days.

Clinical Signs and Pathologic Lesions

Clinical signs of sarcoptic mange usually appear within 2 to 3 weeks after exposure although they may not appear for 6 weeks. The number of pigs affected is variable — only 1 or 2 unthrifty animals in some cases and almost the entire herd in others. The severity of the lesions in individual pigs will depend somewhat on the stage of development of the disease when observed. Sarcoptic mange mites typically cause severe clinical signs and lesions whereas infestations with demodectic mange mites are rare in young pigs and often go unnoticed.

Sarcoptic mange mites cause inflammation and mechanical damage to the skin due to their burrowing and feeding activities. Inflammation also results from an allergic response of the host to the parasite. The irritation and sensitization caused by the mites results in an intense itching. Thus, affected pigs vigorously scratch and rub and cause further damage to the skin.

Early skin lesions are often seen on the face, around the eyes and on other parts of the body where the hair is thin or the skin is tender. Lesions later appear around the ears and on the neck, shoulders, legs and underline. Eventually the entire body may be involved. The affected skin often appears abnormally reddened, roughened and dry. Crusts of dried blood, serum and sloughed cells are often present and give the skin a thickened and unhealthy appearance.

In severe cases of sarcoptic mange, the skin may form folds with deep cracks and ulcers. Abscesses and scab formations are frequent. The damage to hair

follicles caused by demodectic mange mites is less severe but skin abscesses may form in severe cases. Pigs severely affected with either type of mange are often unthrifty. They may show signs of generalized diseases and may eventually die.

Pigs previously treated and cured of sarcoptic mange can become infested again if they are exposed to mites. In this case, lesions develop sooner but often fewer pigs are affected.

Diagnosis

Diagnosis of mange in swine can be confirmed by microscopic identification of the sarcoptic or demodectic mites from deep skin scrapings taken from the ears or from the outer edge of newly developing skin lesions. Have your veterinarian collect the samples and examine them for a proper diagnosis. You usually can find mites from the region of the ears more easily than elsewhere. Occasionally, mites will be present in skin scraping material even when clinical signs and lesions of mange are absent.

Several other diseases may be confused with mange. Similar conditions that must be included in a differential diagnosis are parakeratosis, exudative epidermitis (greasy pig disease), fungal infections of the skin, B vitamin deficiencies, erysipelas, pityriasis rosea, swinepox, photosensitization and sunburn.

Treatment and Control

To control sarcoptic mange in swine, owners must completely eliminate the parasite from all affected animals and the environment. Control of demodectic mange is next to impossible because no effective treatment is currently known. In either case, severely affected animals should be removed from the herd and slaughtered.

Complete eradication of sarcoptic mange is difficult because the parasite increases population so rapidly, because many pigs are asymptomatic carriers and because the parasite can live off the host for up to 4 weeks under ideal conditions. A successful control program requires treatment of boars before

breeding, sows before farrowing and young pigs soon after weaning. All new stock should be treated for mange twice at a 7- to 10-day interval during the quarantine period after arrival.

Several insecticides are commercially available and effective against sarcoptic mange mites. Two commonly used and effective methods of applying insecticides are spraying or use of a sprinkling can. For either, animals should be divided into small groups and crowded into a small pen for treatment. All animals should be treated, whether they appear infected or not. The ears and the entire body must be thoroughly soaked. The treatment area should be well ventilated to avoid inhalation of excessive vapors from the insecticide.

After treatment, pigs should be turned out for a few hours into an area free of wind and direct sunlight to allow more thorough penetration of the insecticide into the mange lesions. Pigs should be treated a second time in 7 to 10 days or as directed to kill any parasites that may have survived the first treatment. Sows treated only a few days before farrowing should be thoroughly washed with clean water on the underline to remove residual spray material.

Animals should be treated when possible for other parasitic, infectious and debilitating diseases that often accompany mange disease. Environmental stresses should also be minimized. Buildings where mange-infested pigs have been kept should be thoroughly cleaned and disinfected, although buildings that have not been occupied by pigs for at least 4 weeks may be considered free of mange parasites.

Three insecticides, lindane, malathion and toxaphene, are effective against sarcoptic mange mites. Federal regulations controlling the use of pesticides in food producing animals are subject to frequent change. Consult your veterinarian regarding the insecticides that are currently approved for use on swine. Owners should comply with all directions on the label, especially regarding mixing, dosage and pre-slaughter withdrawal time.