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Livestock Health Series

# Swine Mange

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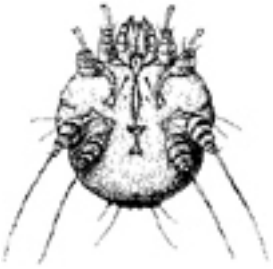
## Introduction

Two types of mange mites affect swine. *Sarcoptes scabiei* var. *suis* is the most common cause of mange in domestic and wild swine. It was first reported in 1857, and today there is worldwide distribution of this external parasite. Mange leads to an extensive loss in performance and productivity. Economical impact estimates are in the hundreds of millions of dollars for the swine industry worldwide. In the United States, sarcoptic mange is a prevalent problem. Swine can also be affected by *Demodex phylloides*, but these infestations are much less common.

Sarcoptic mites are barely visible to the naked eye (Figure 1). The mite appears as a tiny white speck against a dark background. Generally, a microscope is used to aid in the diagnosis of this condition.

**Figure 1**



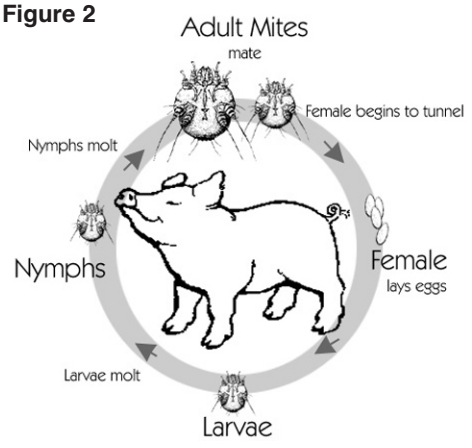
## Transmission

Mites are primarily spread through direct animal contact. Different species of mites affect a variety of livestock hosts. Each of these is host specific. Therefore, swine mange mites can only affect pigs and cannot survive on man, other livestock or pets. Mange mites can live off the host only a day or two because they are susceptible to environmental conditions. Moderate ambient temperatures and high humidity (normal swine facility conditions) may lengthen their survival time off the host.

## Life Cycle

The life cycle of the mite takes approximately 10 to 14 days to complete (Figure 2). An adult male and female will mate on the surface of the skin. Then, the female mites burrow into the outer layer of skin using mechanical destruction and salivary secretions. Females lay eggs in the skin tunnels at a rate of 1 to 3 eggs a day. In approximately 5 days, the eggs hatch in the tunnels. After developing through a larval and two nymphal stages, the mites will reach adulthood in 6 to 9 days. The adult females can live up to 30 days.

**Figure 2**

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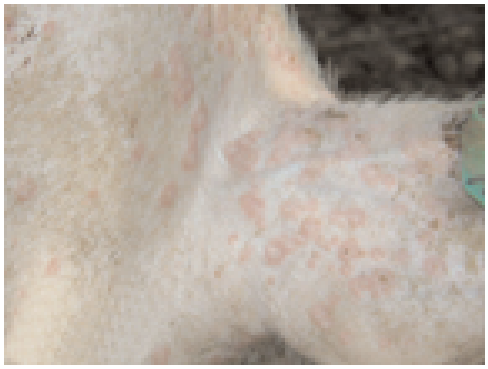
## Clinical Signs

The "tunneling" action of the mites leads to severe skin irritation. Pigs can respond to a mite infestation one of two ways, the hypersensitive form or the hyperkeratotic (chronic) form.

The hyperkeratotic form may be found in animals 6 months of age and older and is much less common than the hypersensitive form. Common findings include thickened, rough, encrusted, raised skin lesions that are dull gray or brown in appearance. These lesions may be found on the ears, head, neck, shoulder or legs. Mites are usually present in very large numbers in these areas.

The hypersensitive response is typically seen in young growing animals. It leads to very intense itchiness, dermatitis and raised, red papules on the rump, abdomen, flank, head and ears. Figure 3 shows these types of lesions on the back of the ear of an infested pig. If left untreated, these signs can last up to 18 weeks after the initial infestation. These animals will rub and scratch the irritated skin resulting in hair loss, abrasion, restlessness and decreased performance.

**Figure 3**



Regardless of the form of mange, mites can be diagnosed by scraping the periphery of the affected area and viewing the scrapings under oil immersion through a microscope. Pigs affected with the hyperkeratotic form may only show mild itchiness. These animals may act as carriers to expose other susceptible hosts.

## Treatment and Control

Several products for treatment are currently on the market. Topical sprays can be used to kill adults, nymphs and larvae. Eggs are resistant to sprays, so two to three applications (according to label instructions) may be needed to effectively treat infested animals. The spray-on products include permethrin (Ectiban®), amitraz (Taktic®), fenvalerate (Ectrin®) and phosmet (Prolate®). It is important to completely cover the animals with spray-on products in order to prevent inadequate treatments. Injectable products can also be used to effectively treat mange in swine. The injectable products include ivermectin (Ivomec®) and doramectin (Dectomax®). The label recommended dosage for these products will kill 100 percent of adult mites and immature forms. Because eggs will not be killed, a second dose might be necessary in two weeks to effectively eliminate mange. When administering any of the above products, follow manufacturer's instructions closely and remember to pay attention to withdrawal periods.

In a research study conducted at the University of Arkansas, doramectin (Dectomax®) demonstrated adequate effectiveness against *Sarcoptes scabiei* var. *suis*.[1] Twenty-two pigs that had naturally occurring mange mite infestations were used in the trial. During the study, doramectin was administered to the infested pigs at 300 micrograms per kilogram of body weight. After treatment, all pigs proved negative for mites in the 7- to 28-day posttreatment period.

Some animals may develop a secondary bacterial skin infection when affected by mange. These animals can be treated using antibiotic and anti-inflammatory therapy. Older animals that are chronically infested with mange should be culled from the herd to eliminate any source of mange mites. For more information on products that are available for treating swine mange mites, refer to the animal insect control section of MP144, *Insecticide Recommendations for Arkansas,* University of Arkansas Cooperative Extension Service. For more information about swine mange or other livestock diseases, contact your local county Extension office.

[1]Yazwinski, T. A., C. Tucker, H. Featherston, Z. Johnson and N. Wood-Huels. 1997. Endectocidal efficacies of doramectin in naturally parasitized pigs. *Veterinary Parasitology*, 70:123-128.



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