



Comprehensive Guide to Parasite Management in Pasture-Raised Swine Herds

A guide to understanding various parasites that affect swine health and how to keep your herd healthy

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Parasites pose significant threats to the health and productivity of swine herds. They can lead to decreased feed efficiency, slower growth rates, and increased susceptibility to other diseases, all of which can have a significant economic impact on the operation. For instance, decreased feed efficiency means more feed is required to achieve the same growth, leading to increased production costs. Similarly, slower growth rates mean pigs take longer to reach market weight, delaying income generation. Understanding these organisms and implementing effective management strategies is about maintaining herd health, maximizing productivity, and minimizing these economic losses. To put this into perspective, a 10% decrease in feed efficiency can lead to a 5% increase in production costs, and a 10% decrease in growth rates can delay income generation by 2 weeks. This understanding should motivate you, the swine producer, to take proactive steps in parasite management.

What are Parasites?

Parasites inhabit or feed on another organism, known as the host. They can be broadly classified into several categories, including helminths (worms), arthropods (such as lice, ticks, and mosquitoes), and protozoa. Additionally, parasites can be categorized based on their location relative to the host. Ectoparasites live on the host's surface, including ticks and fleas. In contrast, endoparasites, such as various types of worms, reside within the host. Understanding these classifications and the specific life cycles of different parasites is crucial for effective parasite management in animal husbandry. For instance, knowing that the life cycle of the pig mange mite consists of several stages: egg, larva, nymph, and adult, and that it favors warm and humid conditions can help you plan your management and treatment strategies accordingly.

Key Parasites Affecting Swine

Ectoparasites

Pig Mange Mite (*Sarcoptes scabiei var suis*)

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The pig mange mite, scientifically known as *Sarcoptes scabiei* var *suis*, is a significant ectoparasite affecting swine. Its life cycle consists of several stages: egg, larva, nymph, and adult. The mite burrows into the soft surface of the pig's skin, leading to various clinical issues. Understanding the specific life cycle of the mite, including the duration of each stage and the conditions that favor its proliferation, is crucial for effective management and treatment.

These mites in older sows and boars can cause hyperkeratosis, resulting in thickened, soft skin, particularly around the ears. Growing pigs may experience intense itching or hypersensitivity, leading to acute clinical signs such as ear shaking and severe rubbing behaviors. Allergic reactions can develop, presenting tiny red pimples on the skin, often resulting in intense rubbing that can cause bleeding. Recognizing these signs early can help promptly diagnose and treat parasite infestations. For instance, noticing your pigs exhibiting intense itching and rubbing behaviors could signify a mange mite infestation, prompting you to take immediate action.

In chronic cases, infestation can lead to thick encrustations filled with mites, commonly found on the ears, neck, elbows, front parts of the hocks, and the top of the neck. This can severely impact the affected animals' overall health and well-being. Understanding the pig mange mite's life cycle and clinical manifestations is crucial for effective management and treatment.



Figure 1: Severe Hypersensitive mange in sow

Photo Credit: [L NADIS](#)

Pig Lice (*Haematopinus suis*)

Pig lice, specifically *Haematopinus suis*, are ectoparasites that can be observed with the naked eye, particularly the males. These lice are host-specific and cannot survive more than 2 to 3 days away from pigs. They infest various areas of the pig's body, commonly found in the folds of skin around the neck, jowl, flanks, and the insides of the legs. They may also form nests inside the ears.

Transmission occurs primarily through direct contact between pigs, making infestations relatively easy to spread within a herd. Young pigs are particularly vulnerable, as heavy infestations can lead to anemia, negatively impacting their growth rates and feed efficiency. Notably, the most severe infestations typically occur during the winter months. Understanding pig lice's behavior and life cycle is essential for effective control and prevention in swine herds.



Figure 2: Pig with noticeable lice

Photo Credite: [NADIS](#)

Ticks

Ticks are another significant ectoparasite affecting swine and are not host-specific. They are commonly found in outdoor herds, where conditions favor their proliferation. Ticks can be easily identified through a [gross visual examination](#) and are typically located on various parts of the pig's body, often seen around [softer-skinned areas](#).

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Their presence can cause irritation and discomfort, potentially leading to more severe health issues if left untreated. Regular monitoring and management are essential to minimize the impact of ticks on herd health.

Endoparasites

Large Roundworms (Ascaris)

Large roundworms, scientifically known as *Ascaris*, are a common endoparasite affecting swine, particularly those aged 2 to 3 months. Sows can carry these worms, facilitating their transmission within herds. Adult roundworms can grow quite large, ranging from 6 to 12 inches, and are typically stout, pinkish, and may have slightly curved tails. They reside in the small intestine, graze on the gut lining, and ingest particulate matter and liquid from the pig's digested food.



Figure 3: Ascariasis inside pig intestine

Photo Credit: [StoryMD](#)

One of the most concerning aspects of large roundworms is their resilience; their eggs can survive for over a decade in the environment and are resistant to cold and disinfectants. However, they can be destroyed by high-pressure steam heat and direct sunlight. This resilience underscores the urgency of regular monitoring and management to minimize the impact of these parasites on herd health. In most commercial systems, eggs are prevented from reinfesting the pigs with manure-holding structures such as deep or shallow slurry pits or lagoons. As the larvae move through the lungs, they can trigger additional allergic reactions, causing the lung tissue to thicken and become wet, which hampers respiration and results in symptoms such as "thumps." Factors like dust, ammonia, and environmental bacteria can exacerbate this respiratory distress. Furthermore, as the worms feed on the gut lining, they can cause colic or gut pain and, in severe cases, may lead to gut impaction or even tearing.

The most noticeable impact of a roundworm infestation is the competition for nutrients between the pig and the worm burden, often resulting in unthrifty pigs. Even pigs with a low roundworm burden may appear healthy but can show decreased performance in terms of feed conversion efficiency. If pigs are raised with contact to the ground, we can assume they will be infected with ascarids due to their prodigious and ubiquitous nature.

Veterinarians can diagnose roundworm infections through fecal samples or necropsy, making regular monitoring and management essential for maintaining herd health. Common clinical indications are slow-growing pigs, raised on soil, and coughing.

Whipworms (*Trichuris suis*)

Whipworms, scientifically known as *Trichuris suis*, are another type of endoparasite that can significantly affect swine health. These worms measure 2 to 2.5 inches long and are typically found in infected pigs' cecum and upper large intestine. In heavy infection, they penetrate the gut lining, leading to irritation and potential blood loss.

One of the concerning aspects of whipworms is their reproductive resilience; their eggs can survive for extended periods in soil, dirt, or feces-covered surfaces. After ingestion, it takes approximately three months for the eggs to mature and be passed out in the feces. During this time, pigs may experience symptoms such as bloody scours, indicating irritation and damage to the intestinal lining.



Figure 4: whipworms inside a pig,

Photo Credit: [4star Vets](#)

Whipworms can decrease overall health and productivity in affected pigs in a heavy infection. Diagnosis is based on fecal flotation to identify eggs and necropsy. Regular monitoring and veterinary consultation can help identify and mitigate whipworm infestations, ensuring optimal growth and performance in swine.



Nodular Worms

Nodular worms are a type of endoparasite that provoke a fibrotic response in the walls of the cecum and colon in infected pigs. This reaction leads to the formation of nodules, which can disrupt normal gut function. The larvae that escape from these nodules eventually emerge into the intestinal tract, continuing their lifecycle.

Adult nodular worms are typically less than 1 inch in length. They reproduce by passing eggs in the feces, which hatch in feces or manure. The larvae crawl onto vegetation and are consumed by the pigs. This life cycle can survive within a pasture for a year. Like whipworm infection, nodular worm-infected pigs may experience scouring due to irritation and inflammation in the large bowel.

Effective management practices, including regular monitoring, rotational grazing, and veterinary intervention, are essential to control nodular worm infestations and ensure the well-being of the swine herd.

Threadworms (Strongyloides)

Threadworms, scientifically known as *Strongyloides*, are tiny intestinal parasites that can pose significant health risks to swine, particularly young animals. The female adults are microscopic and reside within the intestinal wall, where they can reproduce and contribute to infestations. Eggs laid by these worms are passed in the feces of newborn and growing pigs.

Farrowing pens, dirt lots, and pastures can all be sources of infection, as the environment can become contaminated. Once the eggs hatch, the larvae can be ingested through contaminated water or feed or penetrate the skin directly. Notably, larvae can also be transmitted through colostrum, allowing them to infect piglets during nursing.

Heavy infestations of threadworms can lead to severe scouring in neonatal pigs, resulting in acute dehydration and jeopardizing their health. Effective management strategies, including maintaining clean environments and monitoring for signs of infection, are crucial to minimizing the impact of threadworms on swine herds. Regular veterinary consultations can further aid in the development of appropriate control measures.

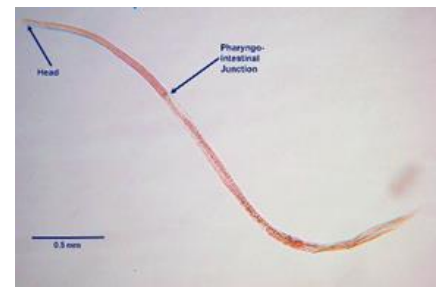


Figure 5: Strongyloide

Photo Credit: [Western College of Veterinary Medicine University of Saskatchewan](#)

Kidneyworms (Stephanurus)

Kidneyworms, scientifically known as *Stephanurus*, are stout, short worms measuring about 1 inch long. They are typically black and white and are primarily found in the fat surrounding the kidneys, though they are seldom located inside the kidneys. These [worms mainly affect sows](#) and can lead to mature infections, which take about nine months to a year after the initial infection before the adult worms produce eggs.

The eggs are passed out through the urine, and areas such as [wooded lots and shaded farrowing pens](#) are often sources of infection. Once in the environment, the eggs can hatch and contaminate the soil. Pigs can become infected through various routes, including ingestion, skin penetration, and by consuming infected earthworms.

Once ingested, the larvae migrate from the small intestine to the liver, where they can remain for 2 to 4 months. Sometimes, they can infect the lungs and spleen and even migrate into the back muscles. The most significant damage caused by kidney worms typically occurs in the liver, where they can disrupt normal function. Effective management and monitoring are crucial for controlling kidney worm infestations and protecting the health of swine herds. Regular veterinary checks and maintaining clean living conditions can help mitigate the risks associated with these parasites.

Lungworms (*Metastrongylus*)

Lungworms, known scientifically as *Metastrongylus*, are short, slender, white worms measuring [1 to 2 inches long](#). These parasites typically cluster deep within the respiratory tract, primarily in the [bronchioles](#). Their life cycle involves coughing up eggs, which are then swallowed and passed in the feces.

Earthworms play a crucial role in the transmission of lungworm infections. They can ingest the eggs, quickly exposing outdoor pigs to contaminated environments. Once ingested, the larvae circulate through the lymphatic system, moving from the small intestine to the heart and lungs.

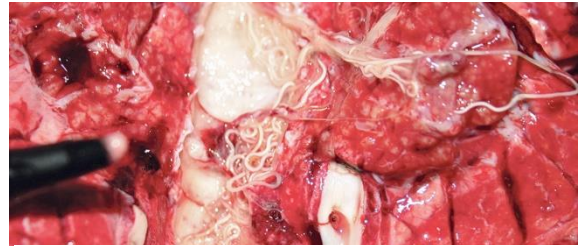


Figure 6: Lungworms in pigs

Photo credit: [The Western Producer](#)

Infected pigs often exhibit symptoms such as thumping and coughing, which indicate pneumonia. This respiratory distress can significantly impact their overall health and productivity. A thorough examination of the lungs should be conducted during postmortem evaluations to assess the presence and impact of lungworms. Regular monitoring and proper management strategies are essential to control lungworm infestations and protect the health of swine herds.

Parasite Control and Prevention

Effective parasite management in swine herds relies on several critical practices focusing on biosecurity and pasture management.

Biosecurity Measures

Biosecurity is essential to preventing the introduction and spread of parasites. Maintaining [a clean environment](#) is crucial, as well as ensuring that indoor and outdoor areas are dry and debris-free. **Quarantine** procedures should be implemented for new or sick pigs, isolating them for at least three weeks to minimize exposure to the rest of the herd. During this period, it is essential to use separate equipment and clothing to reduce the risk of transmission further. [Regular disinfection](#) of housing, equipment, and clothing is vital. Thorough cleaning should be followed by drying in sunlight or with heat to ensure that any potential parasites are eliminated.

Pasture Management is also critical in controlling parasite loads. Regularly rotating pastures can significantly reduce the prevalence of parasites, as many can survive in the soil for extended periods. Changing grazing areas diminishes the likelihood of reinfection, promoting a healthier herd overall.

Deworming Protocols

Utilize approved dewormers, which are effective when administered according to label instructions.

Worms and stages	Compound
Ascarids (adults)	All the suggested
Ascarids (migrating larvae)	Fenbendazole



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Worms and stages	Compound
Ascarids (infective larvae)	Fenbendazole, pyrantel
Whipworms	Fenbendazole, dichlorvos
Nodular worms	All the suggested
Lungworms	Fenbendazole, ivermectin, levamisole
Kidneyworms (adult)	Fenbendazole, levamisole
Kidneyworms (larvae in the liver)	Fenbendazole
<i>Strongyloides</i>	Levamisole, ivermectin

Table adapted from: [University of Missouri Extension](https://extension.msu.edu)

Strategic Deworming Schedule

- **Pre-breeding and Pre-farrowing:** Deworm all breeding stock and gilts/sows.
- **Neonatal Care:** Prevent *Strongyloides* and roundworm infections in young pigs.
- **Growing Pigs:** Implement one or more dewormings in the growth phase.

Consultation with Veterinarians

Develop specific deworming schedules with your veterinarian to tailor strategies to your herd's needs. For maximum effectiveness, use approved formulations and routes of administration.

Conclusion

Understanding the types of parasites that affect pigs and implementing a robust management plan is crucial for the health and productivity of your herd. Regular monitoring, effective biosecurity practices, separating eggs or larvae from pigs' ingestion, and strategic deworming will help mitigate the impact of these harmful organisms. Producers can enhance their swine herds' well-being and performance by prioritizing parasite management.

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