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Common Sheep Parasites

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Common Sheep Parasites

Internal parasites are among the most troublesome problems affecting South Dakota sheep. A heavy infestation of destructive sheep parasites may cause death, and an even greater toll is taken in the form of setbacks in the entire flock. A "wormy" flock, for example, is seldom a profit maker.

Each parasite class includes several species. However, only those species most important to South Dakota will be considered here.

TWISTED STOMACH WORM (common stomach worm, Haemonchus contortus)

The Twisted Stomach Worm is the most destructive South Dakota sheep parasite. Lambs are most seriously affected. These worms are from \( \frac{3}{4} \) to 1½ inches long and about the size of a coarse hair in diameter. Live females are marked with a spiral striping, resembling a barber pole. In the host animal, the worms are usually confined to the fourth or true stomach (abomasum), though some may be found in the first part of the intestine.

**Life History and Habits.** The life history and habits of the stomach worm have been well established (see figure 1). The adult females, normally living in the abomasum, lay enormous numbers of microscopic eggs. These pass out with the feces. Under favorable temperatures and moisture condition, eggs hatch into larvae within a few hours. Larvae then molt twice and develop into the infective stage. This occurs within 2 weeks after passing from the host. When sufficient moisture is present, the young larvarvae crawl up on a grass blade, coming to rest with evaporation and moving upward when the grass blade is again moist.

At this stage the larvarvae is greatly resistant to changes in temperature and moisture. While clinging to a blade of grass, it is in a position to be swallowed by the grazing animal. After being swallowed, the larvarvae travels to the fourth stomach, develops into the adult stage, and lays eggs—thus starting another cycle. Each female can lay about 6,000 eggs daily.

The entire life cycle of the stomach worm may be completed in 21 days, conditions being favorable. Heavily infested sheep may pass as many as 3 million worm eggs in a period of 24 hours.

**Symptoms.** Sheep infested with stomach worms first become unthrifty and listless and later thin and weak. Membranes of the eyes, nose, and mouth become pale from loss of blood. Diarrhea may be present. The wool on heavily infested animals may eventually become loose and easy to pull out. Also a water swelling under the lower jaw sometimes occurs. This is referred to as "bottle jaw" or "poverty jaw." Swelling along the abdomen will also develop.

No symptom or group of symptoms is a positive clue to the presence of stomach worms. Identical symptoms may be exhibited in other cases of infestation by some other parasites. A correct diagnosis can only be made by post-mortem examination of the intestinal tract or by microscopic examination of the feces and identification of the eggs. In making
This drawing shows how a sheep holds his head when he is suffering with “bottle jaw,” or “poverty jaw,” a watery swelling under the jaw, caused by a heavy and prolonged infestation of the common stomach worm.

post-mortem examinations, sacrifice a weak animal or obtain an animal immediately after death; otherwise the worms may disintegrate and be difficult to find.

TAPEWORM

Three species of tapeworm are common. These are the Broad tapeworm, Moniezia expansa, M. benedini, and the Fringed tapeworm, Thysanosoma actinoides.

Sheep may harbor several different species of tapeworms, in both adult and larval stages. The common tapeworm, Moniezia expansa, and M. benedini, are long, flat ribbon-like worms which sometimes reach a length of several yards and a breadth of ¾ inch. Specimens 20 feet long have been found in lambs. The fringed tapeworm, Thysanosoma actinoides, derives its common name from the characteristic fringe which appears on the posterior of each of the segments. All species of tapeworms are commonly found in the small intestines of the host animals. But in addition, the fringed tapeworm may occur in the cystic duct, gall bladder, and in the duct of the liver and pancreas.

Sheep in all parts of South Dakota may become infested with one or more species of tapeworms. Moniezia expansa (broad tapeworm) occur throughout the state. The fringed tapeworm appears to be more prevalent, however, in the range bands of the western part of South Dakota, but it has occasionally been found in eastern sections.

Life History and Habits. The life history of the fringed tapeworm is unknown, but it is thought to require an intermediate invertebrate host through which it must pass before it can infest sheep. The life history of the broad tapeworm and the M. benedini appears to be about as follows. The microscopic eggs and segments containing eggs pass out with the feces. On being infested by a suitable intermediate host, oribatid mites and beetle mites, the eggs develop into an intermediate larval stage. Sheep become infested by swallowing such larvae.

The larva travels to the small intestine of the host, where it develops into an adult worm by the growth of segments back of the head. With reproduction, a new life cycle is started.

Symptoms. Diarrhea and retarded growth or loss of condition appear to be chief symptoms of tapeworm infestation of sheep. Infected animals usually have normal appetites. The fringed tapeworm may cause death of the host through blocking the cystic duct, gall bladder, and the ducts of the liver and pancreas. A post-mortem should be considered.

CONTROLLING INTERNAL PARASITES

Common stomach worms, tapeworms and other internal parasites are a constant threat to the health of any flock of sheep. Generally the damage is done before the owner realizes that anything is wrong.

Prevention. Clean pastures do not spread stomach worms. Rotate pastures so that sheep are pastured on one field not for over 3 weeks and then are not back on the same pasture for 3 weeks or a month. A mixture of one part fine particle phenothiazine and nine parts loose salt is a preventative but not a cure for stomach worms. Protect this mixture from sun and rain. It is not recommended during

Figure 2. Life Cycle of Tapeworm
Always follow directions when using chemicals—it may save a life

the breeding or gestation season. Research investigators have had good results with a mixture of one part (by weight) fine particle phenothiazine, two parts bone meal or dicalcium phosphate, and six parts trace mineralized salt fed free choice.

Treatment. Drench the ewe flock at least three times during the year.
1. Drench in early spring, 10 to 14 days before turning on pasture, after lambs are born.
2. Treat again in mid-summer or as soon as the lambs are sold or weaned—July 15-August 15.
3. Follow up in early winter, at time of drylotting ewes. Use 1 ounce of fine particle phenothiazine solution per ewe.
4. Drench at any other time when ewes or lambs seem unthrifty. Diarrhea in lambs is an indication. Caution—if a lamb dies at any time—have a post-mortem examination.

DRENCHING MIXTURES

Cunic Mixture. For common stomach worms and tape worms use the following:

| ½ ounce Copper Sulfate (Blue Vitriol) | ½ ounces Nicotine Sulfate (Black Leaf 40) |
| 1 gallon distilled or rain water |

Use hot water if you are in a hurry. One gallon will treat 30 ewes.
Mix in an earthenware jar. Be sure to wrap the Copper Sulfate in a cloth and hang at the top of the water until it dissolves.
Use the following dosages:

Mature ewe—4 ounces
60 pound lambs—2 ounces

CAUTION—This is a deadly poison if directions are not followed. Have your druggist weigh and measure the ingredients.

Fine Particle Phenothiazine Mixture. Phenothiazine solution is another good drench. It is effective in controlling stomach worms and nodular worms. Use the following:

2 pounds wettable fine particle phenothiazine

Enough water to make 1 gallon drench

One gallon will treat 32 ewes. Use the following dosage:

Mature ewe—4 ounces
60 pound lamb—2 ounces

Follow directions on the container if you buy phenothiazine in a liquid mix.

Thiabendazole Mixture. Thiabendazole is designed for use in sheep in treatment of infection with gastrointestinal round worms, including common stomach worms. Infestation with many of the economically important round worms of sheep are effectively treated with thiabendazole.

Use the mixture and dosage recommendations provided on the packaged drug containers.

Lead Arsenate Mixture. Lead arsenate is an effective treatment against tapeworm. It is administered without fasting.

Give one gram to sheep or lambs weighing 60 lbs. or more. The usual method is to give it in a hard gelatin capsule.

Phenothiazine and Lead Arsenate Mixture. Fine particle phenothiazine is an effective drug for the removal of many different kinds of round worms in sheep. When combined with a small amount of arsenate of lead it is particularly valuable in the control of most round worms and the common tape-worms of sheep as well.

Mixture: Use 64 grams of lead arsenate with a small amount of water. Then thoroughly mix this with 1 gallon of phenothiazine drench.

Dosage. For lambs under 50 lbs. use 1 ounce. Sheep over that weight need 2 ounces. For extremely large sheep use 3 ounces. This mixture is administered without fasting.

DRENCHING PROCEDURE

1. Use a bottle or dosing syringe.
2. Keep the sheep off feed for 12 hours before drenching and 4 hours after drenching. (When copper sulfate-nicotine sulfate is used.)
3. Be sure that the sheep is standing on all four feet.
4. Do not raise the sheep’s nose higher than his eyes.
5. Take your time. Don’t choke the sheep.
6. Late lambs, thin lambs, and lambs not sold at weaning time should be sheared, drenched, and fed grain until fat.

Lambs on clean pasture, nursing their mothers, gaining ½ of a pound or more daily, and sold in May or June, ordinarily do not need drenching.