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Stomach Worms In Sheep

BY

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By L. J. HORLACHER

One of the most serious enemies of the sheep industry in Kentucky is the stomach worm. It is safe to say that practically every flock in the State is infested with stomach worms, altho the symptoms may not be plainly evident. Much about their life history is still unknown, but we have learned how to treat affected animals successfully and how to practically overcome the danger. The only safe and economical way of raising sheep where stomach worms are a factor is by managing the flocks and pastures in such a way as to prevent a serious development of the trouble. Any lamb which has been affected sufficiently to show the external effects has received a serious setback. Altho a lamb may recover and be thrifty, yet it has lost at least a month or six weeks of progress toward a marketable condition.

Symptoms.

Either sheep or lambs may be infested with stomach worms at any time of the year. Lambs are affected first about the middle of the summer. Generally the first sign of trouble is the death of one or more lambs. Dullness, lack of thrift, and scouring, accompanied by a very pale, bloodless skin and mucous membrane of the eyes and mouth are first symptoms. Sometimes there is a watery swelling under the jaws.

By removing and opening the fourth stomach (the compartment next to the small intestine) of a sheep which has died of this trouble, its nature may be easily recognized. The stomach

worms, if present, can be seen in large numbers wriggling around in the fluid contents. They are $\frac{1}{2}$ to $1\frac{1}{4}$ inches long, about as thick as a pin, and spirally striped with red and white. Some of the worms may be seen adhering to the inside walls of the stomach.

Kind of Injury.

Stomach worms injure sheep in three ways:

- (a) By sucking blood.
- (b) By destroying the red corpuscles of the blood.
- (c) By bacterial infection thru the wounds which they make in the lining of the stomach.

Manner of Infection.

The worms in the stomach produce thousands of eggs which are passed with the feces. In hours, days or weeks, depending upon the temperature, these eggs hatch. The young stomach worms develop in a few days or weeks. They thrive best in warm, damp conditions. During wet periods the young worms climb up the blades of grass. They are swallowed by the sheep and after two or three weeks inside the stomach they reach maturity and produce more eggs.

Length of Pasture Infestation.

Pastures may remain infested for several months after sheep are removed. The eggs and worms are not destroyed by cold weather. If sheep, goats or cattle are kept off a pasture for a year, it is believed that practically all of the larval stomach worms will have died within that time. A second method is to turn the pasture into a cultivated field, which will greatly shorten the period required for practical disinfection.

How to Prevent Loss.

Prevention is better than cure. One great step toward evading the stomach worm is to have lambs dropt early and then feed to develop them as much as possible before they go to pasture.

If the ewes are fed well and the lambs are given feed in a creep, the lambs can be brought to marketable weight before the dangerous part of the summer.

The second method is by rotation of pastures. Since it requires 10 to 20 days for the young worms to develop after the eggs have been dropt, it is clear that frequent changes of pasture are necessary. The difficulty lies in always having a fresh pasture available. If permanent pastures alone were used, adequate control would call for as many separate pastures as would allow the flock to be moved at least every two weeks without going on the same ground twice in 12 months. Changing pastures is not enough—the sheep must be changed to clean ground.

Hay fields, grain stubble and corn fields can be utilized in the rotation, to furnish fresh grazing.

The best method is to plow the land and use a succession of forage crops. Fall sown wheat or rye can be used for late fall and early spring, after which the land should be broken and sown to peas and oats, rape and oats, soy beans, or other similar crops for summer grazing; it may then be plowed again and sown to wheat or rye. This method is very good where ewe lambs are carried over for breeding.

The following table, slightly modified from Bulletin 215 of the Kentucky Agricultural Experiment Station, is a suggestion of what crops may be grown for pasturing sheep, in this State:

Crop	Season	Remarks
Wheat	Fall	Good for early grazing
Rye	Fall	Good for early grazing
Peas	Spring	Good for summer grazing
Oats	Spring	Good for summer grazing
Rape	Spring	Good for summer grazing
Soy beans	Spring	Good for summer grazing
Wheat	Fall	Good for early grazing
Rye	Fall	Good for early grazing

CROPS AVAILABLE FOR SHEEP PASTURE AT DIFFERENT TIMES.

Crop	Date of Sowing	Rate of Seeding per acre	Time to Pasture	Length of time to Mature	Number of Animals per Acre
Cowpeas, Whippoorwill	May 15 to June 15	48 lbs. or 3 pecks per acre sowed in rows 28 to 35"	Sept., Oct.	3 to 4 months	10-15 ewes or 15-25 lambs
Soy beans, Haberlandt, Peking	May 1st to July 1st	25-40 lbs. sowed in rows 28 to 35"	Sept., Oct.	Four months	8-15 ewes or 10-20 lambs
Rape, Dwarf, Essex	April, May in corn for summer. Early August for fall pasture.	6 to 8 lbs. drilled in or broadcast	June to August; also until frost	6 to 8 weeks	10-15 ewes or 15-25 lambs
Oats	March, April	2 to 3 bushels	Spring and early summer	6 to 7 weeks	6-10 ewes or 10-15 lambs
Rye	August, September, October	2 to 3 bushels	Spring and late fall. All winter	3 to 4 weeks	10 ewes or 10-15 lambs
Alfalfa	Spring or Fall	15 to 20 pounds	All summer and fall	1 year	10 ewes or 15-20 lambs
Red Clover	Spring, February or March	10-15 lbs. drilled in wheat or broadcast	August, September, October	6 to 7 months	10-15 lambs
Sorghum, Sudan grass	May or early June	8 to 10 pounds	July to October, summer	Two months	15-20 lambs
Mangels or Beets	April or May	6 to 8 pounds	October	4 to 5 months	

Treatment.

Most cases of stomach worms, if not too far advanced, can be treated successfully by drenching with a weak solution of bluestone, as advocated by the U. S. Bureau of Animal Industry, which has given the following directions:

"Dissolve one-fourth pound (avoirdupois) of the *powdered* crystals of copper sulphate (bluestone) in 1 pint of boiling water, using porcelain or enamel ware dish, as the bluestone corrodes most metals. Then add enough cold water to make the solution up to 3 gallons, using wooden, earthenware, or other non-metallic receptacles. This will make approximately a 1 per cent solution and will be enough to dose 100 adult sheep, allowing 10 per cent waste. In the preparation of the dose use only clear, blue crystals of copper sulphate. Crush the crystals to a *fine powder* when ready to make up the solution."*

The doses for lambs and sheep are:

For lambs under 1 year of age $1\frac{3}{4}$ ounces of the solution (50 cubic centimeters).

For sheep past 1 year old $3\frac{1}{2}$ ounces of the solution (100 cubic centimeters).

If a marked graduate is not available a glass with marks scratched on the sides may be used for measuring the doses.

Caution: Always grind the bluestone crystals into a powder before making the solution.

Do not overdose.

Use care in drenching

Best results are secured by keeping the sheep off feed over night before drenching and allowing no water for at least two hours afterward.

A convenient drenching apparatus is an ordinary coca-cola bottle with the opening made smaller by inserting half of a cork into it. This prevents the liquid from flowing out so rapidly as to strangle the sheep.

*Department Circular No. 47.

4 to 5 months

October

6 to 8 pounds

April
to
MayMangels or
Beets

Back the sheep into a corner and allow it to remain standing on all four legs. Standing astride the sheep or to one side, gently open its mouth and insert the neck of the bottle, being very careful not to raise its nose higher than the eyes. If the head is held too high the fluid may pass into the lungs, causing pneumonia and almost certain death. To prevent the sheep from stopping the opening with its tongue, rotate the bottle slowly. Give the liquid only as rapidly as the sheep can swallow comfortably.

Care in giving the dose is important. Haste or carelessness may have serious results. Like any medicine, this is a dangerous treatment when not given according to directions.

When pasture rotation is not possible the sheep may be given about three-fourths of the regular dose of the bluestone solution every month or six weeks during the summer season. This will aid materially in checking the worm.

Summary.

Little trouble from worms need be experienced if the following precautions are observed:

1. Have the lambs come early.
2. Feed well.
3. Drench the flock as a measure of prevention.
4. Provide a rotation of pastures.