DON'T LET WORMS BE THE DEATH KNELL FOR YOUR LIVESTOCK IN THE SUMMER RAIN SEASON

There are several worm types, also known as internal parasites, that can infect and affect livestock. Most types are seasonal and the hot humid summer months are usually the biggest headache for most farmers.

Among the disease conditions that affect livestock, roundworms, and more specifically wireworm, is probably one of the economically most important conditions especially for small stock.

Goats that are naturally browsers which ingest leaves of trees, and if farmed in this way, will be less exposed and therefore less affected compared to sheep and cattle.

Eyeworm can be a problem in livestock. Flies transmit the parasite, and this can lead to infection of the eye. The parasite is very sensitive to the macrocyclic lactones group of anthelmintics (Group 1) like ivermectin and doramectin and because these drugs are used extensively, the incidence of eyeworm is usually not high.

Nasal worms occur seasonally and are linked to fly activity. The fly stage lays its eggs on nostrils of small livestock and the larval stage occurs and develops in the nasal cavities. The larvae irritate the animals resulting in symptoms of nasal discharge, irritation, and sneezing. Larvae are sneezed out and the pupal stage develops which hatches and develop into adult flies again and hence the life cycle is repeated. Animals can be easily treated with an active from group 1 or 4. It is important to treat rams before the mating season to ensure that they have no infestation in their nose which may limit their ability to detect ewes that are in heat to be mated.

There are a few *tapeworm* species that can infest livestock, of which the milk tapeworm is the most common. The life cycle is indirect and eggs hatch from excreted segments in the dung and are ingested by grass mites, which act as intermediate hosts. The mites are ingested when animals graze and tapeworms develop in the small intestine where they attach. Tapeworms are usually mainly a problem in younger animals and by weaning time many animals will get rid of the worms themselves.

It is easy to control tapeworms with the oral dosing remedies that are available on the market. The most common active that is highly effective is praziquantel. Resistance is usually not a big problem. If there are cases of resistance, the active resorantel can be used.

Photo of milk tapeworm after treatment in sheep.

There are various species of *roundworms* that can cause problems in cattle, sheep and goats.

In cattle, roundworms are usually only a big problem in younger animals, e.g. calves. It is therefore recommended that calves are dewormed once, or preferably twice, before weaning. A one-time treatment of older animals with an injectable product is usually sufficient.

For practical purposes we will only look at the two most important species infesting small stock: wireworm and brown stomach worm.

Wireworm (Haemonchus contortus)

is a blood-sucking worm. The worm has a very simple but fast life cycle which means that it can quickly become a big problem in a single season. Adult females lay up to 10,000 eggs per day. Eggs hatch when the environmental conditions are warm and humid. It develops into an infectious larval stage that moves up with the blades of grass and is then ingested by sheep or goats when they graze. Within the animal it develops into the adult stage and start to lay eggs again. The complete life cycle is about 3 weeks.

The adult worms settle in the abomasum (simple stomach), bite into the wall and suck blood. The worms are easily visible in the abomasum. Each adult worm sucks about 0,05 ml of blood per day. Animals become anemic and weakened. Sheep or goats infected with wireworm can be identified by pale eyelids (see photo). Because wireworms absorb whole blood, this leads to very low protein levels and a “bottle jaw” or pasty watery sac that can form under the sheep or goat's throat. “Bottle jaw” can have several causes but is usually due to a heavy wireworm infestation this time of year.

The parasite probably has the greatest negative economic impact on sheep and goats in summer rainfall areas in terms of production losses and deaths.

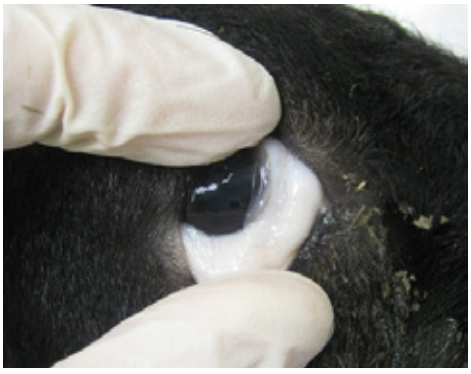

Photo of pale eyelid in a sheep.

Brown stomach worm (Teladorsagia circumcinta)

The life cycle is similar to that of the wireworm, except that the females lay far fewer eggs, in the region of 50-100 eggs per day. Because eggs hatch at lower temperatures, this can also be a problem in the colder months. This is more of a problem in winter rainfall regions, but also occurs in summer rainfall regions where e.g. planted pasture is used. The immature worms settle in the abomasum where they damage the wall as they grow and as mature worms, also suck blood. Affected animals show signs of diarrhoea, pale eyelids, and weight loss. The worms are not easily visible in the abomasum.

Roundworm control is best done by following a few basic principles:

- Treat only affected animals using the 5 point system (see below).

- Only treat all the individuals of a group during high-risk phases, e.g. lambs and calves before weaning, ewes before lambing, rams and bulls before mating.

- Use anthelmintics judiciously and be aware of the fact that there are contact agents that are short-acting eg. levamisole and long-acting drugs that have a registered residual action against certain species, e.g. closantel and moxidectin.

- Emergency treatment for small stock: In times of heavy infestation, a short-acting agent followed by a long-acting agent 10-14 days later can be of value. An oral vitamin-amino acid supplement is also recommended to support affected animals.

Liver fluke

The internal parasite has a complex life cycle and requires freshwater snails as intermediate hosts to complete the cycle. Due to the specific intermediate host, the parasite only occurs where there is a water source to sustain the freshwater snails, e.g. ponds, marshes, troughs etc. Eggs are shed in the dung and hatch only when the temperature is favorable, usually in spring and summer. Freshwater snails become infected, and an immature stage is released which attaches to plant material in water sources. Animals ingest the parasite when they graze or drink water in the area. The immature stage moves through the intestinal tract to the liver where it feeds. It then develops into an adult stage that settles in the bile ducts of the liver where it lives on blood and blood proteins. Adult stages and produces eggs. Injectable and oral dosage agents are available that treat different stages of the parasite. Cattle can develop resistance to the parasite to some extent, which is not the case in small livestock like sheep and goats, which are more susceptible towards the effects of liver fluke.

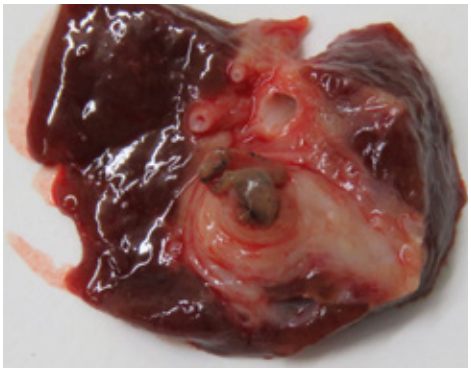

Photo of a liver with adult liver snails in the bile ducts

Conical fluke's life cycle is very similar to liver fluke except that the intermediate host snail species is different. The immature stage settles in the small intestine where it attaches to the wall and feeds. They damage the wall and blood and proteins leak out, resulting in foul-smelling diarrhea and weight loss. The mature stage is harmless and is easily visible as conical flukes in the large intestine. Take note that the finding of adult stages in the rumen on a post-mortem examination only indicates the fact that the circumstances are favorable for the parasite to occur and it is not necessarily the cause of death. The parasite can only be treated with oral dosage agents containing certain actives from group 4.

In addition to treatment of affected animals, both conical fluke and liver fluke can also be strategically treated preventively in the autumn and/or spring on farms where they occur. Avoiding camps where there are water sources in the summer and autumn can also reduce contamination.

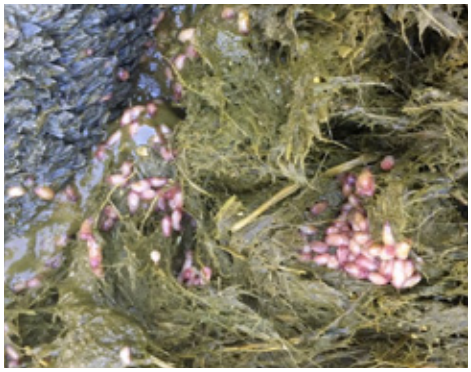

Photo of mature conical fluke in the rumen

Worm control in especially small stock as well as cattle can be done to some extent by using the 5 point system.

- Look at the eyelids for signs of anemia which e.g. can be present with wireworm in small stock and liver fluke in large livestock.

- Look at the condition score to identify weight loss.

- Look for any signs of diarrhea which e.g. can be present with brown stomach worm in small stock and conical fluke in cattle.

- Check if there are any signs of a nasal discharge that could indicate nasal worm problems in small livestock.

- Look at the throat area for any signs of "bottle jaw" which e.g. can be present with wireworm in small stock and liver fluke in cattle.

There are 11 groups of anthelmintics on the market classified according to the active ingredients. The group is indicated by a number on the product's label. But make sure you use a drug that is effective against the target parasite as well as a drug that works effectively against the parasite and to which there is no resistance. Consult a veterinarian or animal health officer if resistance occurs or is suspected.

In closing

It is important to know which worms occur on your farm and in your region and then get a preventive treatment plan in place. In high-risk times it may be necessary to administer additional treatments e.g. in hot and wet summer months. Effective worm control leads to profitable farming.

For more information about worm control in your livestock contact your Kyron Agri representative.

KYRON AGRI

Registration Holder: Kyron Animal Health (Pty) Ltd., Reg. No. 2004/021847/07, Unit 45C, 45 Parkview Street, Highway Business Park, Rooihuiskraal Ext. 31, Centurion, 0157, South Africa, Tel: 0861 247 463.