AFRIVET BUSINESS MANAGEMENT

Veld talk

VOLUME II

ENDOPARASITES OF CATTLE

FEATURES

- Roundworms
- Tapeworms
- Flukes
- Control of endoparasites

It is common knowledge that endoparasites of cattle can cause production losses but it is often assumed that if there are no symptoms of parasite infestation, there is no effect on production. Recent research has shown that low infestations of worms such as brown stomach worm caused suppression of appetite resulting in a 45-75% reduction in growth. Apart from the reduced feed intake the worms also cause a loss of protein by leakage through the damaged gut and diarrhoea. This loss of protein causes a reduction in muscle mass, but less well known is the effect on the immune system. Animals with low protein levels cannot mount a good immune response which means that they will not respond well to vaccines and are also more susceptible to infections.

ROUNDWORMS

In general cattle are more resistant to roundworms than sheep because they develop immunity more rapidly than sheep. Round worm control is therefore focused on calves but it must be understood that adult cattle can still be infested and serve as a source of infestation. Cattle on irrigated pastures may have heavy worm infestations.

With the exception of *Parafilaria* which will be discussed later, most of the roundworms of cattle are found in the gut, and have an uncomplicated simple lifecycle: the infective larvae are picked up on grazing, after which they move into the part of the gut depending on the species (stomach, small intestine, colon). The larvae develop to adults and after they mate the females produce eggs which are shed in the faeces. The eggs hatch on the pasture and larvae develop in the dung pats.

Important roundworms of the gut are highlighted here for discussion:

Wireworm (*Haemonchus placei*)

Wireworm is a problem in summer rainfall areas and are found in the stomach of cattle where they are difficult to see. They cause anaemia because they are bloodsuckers and are usually a problem in dairy calves kept in unhygienic camps.

Brown stomach worm (*Ostertagia* spp.)

These worms are a problem in winter rainfall areas and they survive in

moist cool conditions, especially on artificial pastures. Infestations cause loss of weight due to appetite suppression and severe diarrhoea. Deaths occur with heavy infestations.

Nodular worm (*Oesophagostomum* spp.)

This worm occurs in the colon and the nodules that form in the wall of the gut can sometimes be seen. Infestations occur especially during wet and hot weather, with overgrazing of camps, or unhygienic camps and kraals. The worm occurs in all areas of the country except winter rainfall, dry areas and artificial pastures. Nodular worm causes loss of appetite, weight loss and diarrhoea.

Photo 1: Nodular worm lesions in the large intestine (Photo courtesy of University of Pretoria)

Hookworm (*Bunostomum* spp.)

These hookworms occur in the NW Cape and are usually a problem in young calves in infested camps, especially where there are leaking water troughs or after heavy rains. Infested calves show rapid weight loss, anaemia, bottle jaw, and a severe diarrhoea.

Bankrupt worm (*Cooperia* spp.)

This bankrupt worm is very small and difficult to see. It is found in the small intestine. This species occurs in dry areas - the larvae are resistant to desiccation (drying).
Bankrupt worms are a problem in infested calf camps, but massive infestations are needed to cause symptoms.

***Parafilaria bovicola* (False bruising)**

***Parafilaria bovicola* worms are roundworms which occur under the skin. They are transmitted to cattle by face flies which infest cattle when feeding around the eyes. Tiny worms are released by the flies, enter through the eyes and migrate to the subcutaneous tissue. When sexually mature the female worms make a hole in the skin of the host which bleeds slowly forming a bleeding spot. The female lays her eggs here and the face flies, attracted by the blood will ingest these, completing the life cycle. The presence of the worms under the skin causes "false bruising" which is seen at slaughter and which results in the carcass having to be trimmed. The worm infestation is easily treated by with an injection of a macrocyclic lactone such as Ecomectin 1% (ivermectin).**

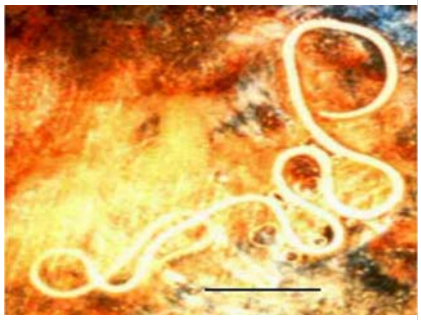

Photo 2: Parafilaria worm under skin of cow (Photo courtesy of University of Pretoria)

TAPEWORMS

The milk tapeworm (*Moniezia* spp.) of calves is an important cause of poor condition in calves. Calves ingest tapeworms when they begin grazing on pastures, by taking in a small soil mite. This mite contains the tapeworm cyst which is released as soon as it enters the calf's intestine. Here it attaches to the wall of the small intestine and grows into an adult tapeworm which can become very large. Tapeworm infested

calves can be identified by their potbellies and rough haircoat and sometimes a diarrhoea. These calves are usually weak and stunted.

The human tapeworm (*Taenia saginata*) causes the appearance of "measles" in beef. These are actually the cyst form of the tapeworm. The source of infection is infected humans who contaminate the pastures with faeces. Cattle show no symptoms of the infestation but at slaughter the tapeworms cysts or measles will be seen in the muscle tissue. Heavy infestations of meat will result in it being condemned. The solution is very simple: the provision of toilets for workers.

The control of intestinal roundworms and tapeworms in cattle

Previously it was believed that deworming of cattle should be done at weaning age. However, new information indicates that preweaning deworming is more effective. Dosing calves and pregnant cows for tapeworms either with combined roundworm/ tapeworm remedies such as **Eradiworm** or separate remedies such as **Tramisol** or **Ecomintic** (roundworms) or **Ecolint or Ecolint Super** for tapeworms. Dairy calves should be dewormed from 2 months old every 2 months up to weaning age. It is important to remove manure from camps regularly because it provides an outstanding microclimate for the survival of the larvae of roundworms. When animals are slaughtered or die this is a good opportunity to assess the types of worms and the worm burdens in the animals. Faecal egg counts of samples taken from live animals can allow the evaluation of the dosing programs.

FLUKES

This group includes liver fluke species (*Fasciola* spp. – liver fluke and giant liver fluke) and conical fluke (*Calicophoron* – formerly *Paramphistomum*) the latter which occur in the gastrointestinal tract. The life cycle of the flukes is similar: they are transmitted by small water snails which occur in vleis, dams, and even water troughs. The water snails shed the infective forms (cercariae) in the water. These form resistant cysts which float on the water or which climb onto the vegetation. Cattle are infected with these cysts when they drink water or graze on infested pastures, near the edges of the dams.
The infectious forms are shed from February to April when the temperature begins fluctuating.
Note that bilharzia is also a fluke but is restricted to tropical areas such as Mpumalanga.

The effect and control of liver fluke

When animals ingest the metacercariae, they germinate and the little liver flukes migrate through the gut towards the liver. The migration causes bleeding and leakage of protein. When the liver flukes reach the liver they lodge in the bile ducts and suck blood. Although cattle seldom die from liver fluke infestations, the effect is loss of weight, anaemia and bottle jaw. Production is significantly reduced even if there are no overt symptoms.
For farms with serious liver fluke problems the best remedies for use contain triclabendazole e.g. **Ecofluke.** This remedy kills immature as well as adult flukes and therefore prevents damage to the liver caused by the developing flukes. It is best given in early winter (April), and can be repeated in spring for total control. Remedies containing closantel (**Closeco**), rafoxanide (**Tramisol Plus**) and oxyclosanide (**Tramizan**) will kill adults flukes only and may need at more than two treatments preferably in June, August and January. These remedies have the advantage that they treat roundworm infestations as well as liver fluke infestations.

The effect and control of conical fluke

When conical fluke cysts are ingested the immature flukes reach the small intestine. They attach to the lining of the intestine and cause irritation manifested by severe diarrhoea. On post mortem the flukes may be seen in the small intestine looking like pink rice grains The adults are found in the reticulum but they are not harmful apart from the fact that they

are laying eggs and reinfecting the pastures. Treatment with effective remedies such as resorantel (Ecolint Super) and rafoxanide (Tramisol Plus) will clear up the infestations.

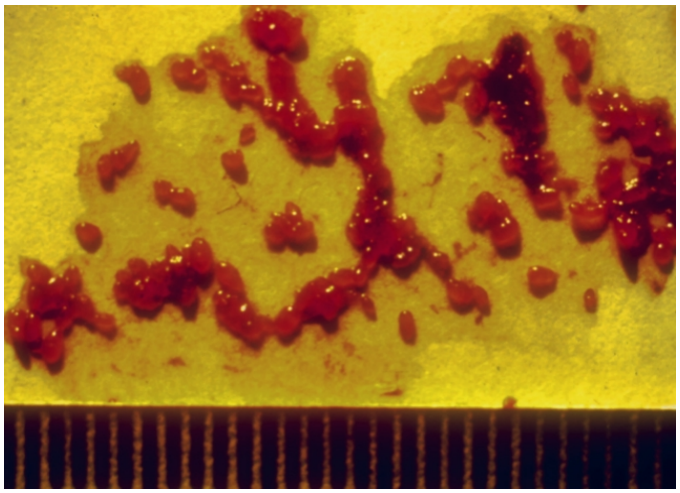

Photo 3: Immature conical flukes occur in the small intestine and resemble pink-red rice grains (Photo courtesy of University of Pretoria)

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