

Beware of these five parasites in sheep

By Janine Ryan | 18 October 2022 | 12:40 pm

Intestinal worms in sheep are a serious problem for farmers, particularly communal farmers, and the timeous detection and treatment thereof are crucial for reducing possible financial losses and/or mortalities. Janine Ryan looks at the most economically important internal parasites that infect sheep in South Africa.



Internal parasites in sheep can have devastating effects on farmers' profitability, as they affect meat and wool quality.

Photo: FW Archive

Internal parasites can cause severe economic losses for sheep farmers in South Africa. In the country's winter rainfall region, the most important of these parasites, according to Drs Gareth Bath and Jan de Wet, are the brown stomach worm (*Teladorsagia circumcincta*), tapeworm (*Moniezia* spp.), liver fluke (*Fasciola hepatica*), and the long-necked bankrupt worm (*Nematodirus spathiger* and *N. filicollis*).

In the summer rainfall region, the most important internal parasites are wireworm (Haemonchus contortus), tapeworm, bankrupt worm, and liver fluke.

It's essential for farmers to treat these parasites with effective registered medicines, but the parasites' resistance to available treatments is a growing concern around the world. Thus, farmers are advised to implement prevention methods to lower parasite loads on their farms, such as the effective quarantining of infected animals.

Brown stomach worm

The brown stomach worm (**see Table 2**) is a roundworm found in the abomasum (fourth/true stomach) of the sheep. It is a small, red-brown worm that's about 10mm long, and is visible on the lining of the abomasum.

TABLE 2: BROWN STOMACH WORM	
Type	Roundworm
Occurrence	Abomasum; visible in lining
Size (adult)	10mm long
Eggs	50 to 100 per day
Diagnosis	Faecal samples; larval cultures (egg identification is not always accurate)

Adult worms lay 50 to 100 eggs per day. If their environment isn't conducive to reproduction, they may become inactive; however, they will resume activity once conditions have improved.

According to animal health company Virbac, the worm causes damage to the lining of the abomasum as it matures from larva to adult.

Some signs and symptoms of infestation are lethargy, weight loss, weakness and diarrhoea. With serious infestation, the animal's condition may decline rapidly, and death may follow.

Virbac states that sheep may lose up to 35% of their weight due to a lack of appetite and a loss of protein. Wool growth and milk production may also fall by 20% before

symptoms become apparent. Timely treatment is required to reduce the risk of death.

Upon necropsy, the lining of the abomasum will show damage, and may be thickened and inflamed. White nodules of 1mm to 2mm in diameter may also be evident. The carcass will have little to no fat, and may appear emaciated. Animals should be treated with the relevant registered products (**see Table 1**).

TABLE 1: REGISTERED PRODUCTS FOR THE CONTROL OF BROWN STOMACH WORM					
Treatment	Composition	Mature	Immature	Inhibited	Dosage
Virbamax LV (Virbac)	Abamectin 0.2% m/v (mass/volume)	*	*	*	Oral (drench): 1mL/10kg live weight
Cydectin (Zoetis)	Moxidectin 1% m/v	*	*		Injectable: 1mL/20kg live weight
Nem-A-Rid 3.75% (MSD Animal Health)	Levamisole hydrochloride 3.75% m/v; rafoxanide 3.75% m/v	**	*		Oral (drench): 2mL/10kg live weight
Moxiziben (Afrivet)	Triclabendazole 5% m/v; praziquantel 3.75% m/v; moxidectin 0.1% m/v	*			Oral (drench): 1mL/5kg live weight
* Control >90% effective ** Aids in control: 60% to 80% effective					

Liver fluke

As the name implies, liver fluke (**see Table 3**) is a flatworm that infects the liver of sheep. Adult fluke are between 2cm and 3cm long, and live in the bile ducts of the infected animal. Eggs are excreted via the animal's faeces.

TABLE 3: LIVER FLUKE	
Type	Flatworm
Occurrence	Liver
Size (adult)	2cm to 3cm long
Eggs	8 000 to 25 000 per day
Diagnosis	Eggs in faecal samples (not always evident)

The intermediate host of liver fluke is *Galba truncatula*, a species of snail. The fluke develops in the snail, hatches out onto the pasture, and forms a cyst on the grass that is then ingested by the sheep.

It is the immature fluke that causes damage to the liver, since it migrates through the organ during its development into an adult. Acute, subacute and chronic fasciolosis can occur, depending on the degree of infestation and the animal's resilience.

Acute cases occur around three weeks after high numbers of immature flukes are ingested. Blood loss and secondary infections can transpire. Animals may suddenly die, while others may be lethargic and experience loss of appetite. They may also be reluctant to run due to abdominal pain. Sudden death occurs in around 10% of cases.

Subacute cases present with a rapid loss of body condition and poor fleece quality. Some sheep may demonstrate severe depression, lack of appetite and weakness, and may be unable to stand. Subacute fluke can have a major impact on growth rate, milk yield, finishing weight, and body condition. Mortality rates can be high, but deaths are usually only seen after a period of clinical signs.

Chronic cases present with very poor body condition and fleece quality, and bottle jaw (swelling of the jaw caused by accumulation of fluid in the submandibular tissue). Affected sheep may die in an emaciated state, especially during the high metabolic demands of advanced pregnancy or early lactation.

Upon necropsy, severe liver damage may be evident. Mature flukes may be found in the bile ducts of the liver and gallbladder. Treatment requires the administering of the applicable registered products (**see Table 4**).

TABLE 4: REGISTERED PRODUCTS FOR THE CONTROL OF LIVER FLUKE				
Treatment	Composition	Immature	Adult	Dosage
Ecofluke (Afrivet)	Triclabendazole 10% m/v	*	*	Oral (drench): 2mℓ for up to 20kg live weight; thereafter, increase by 1mℓ/10kg additional weight
Nem-A-Fluke (MSD Animal Health)	Levamisole hydrochloride 2,5% m/v; oxyclozanide 3,4% m/v		*	Oral (drench), 3mℓ/10kg live weight
Flukazole C (Virbac)	Triclabendazole 12% m/v; oxfendazole 4,53% m/v	*	*	Oral (drench): 1mℓ/10kg live weight
Virbamec L (Virbac)	Ivermectin 1% m/v; clorsulon 10% m/v		*	Injectable (subcutaneously): 1mℓ/50kg live weight
Ranox (Zoetis)	Rafoxanide 3% m/v		*	Oral (drench): 2,5mℓ/10kg live weight

*Control: 90% effective

Tapeworm

The tapeworm (**see Table 6**) is a type of flatworm found in the small intestines of sheep and other mammals. In sheep, adult tapeworms can reach lengths of up to 1m. The ribbon-shaped worm attaches to the inner surface of the small intestine with its suckers, which are located on the scolex (head) of the parasite.

TABLE 6: TAPEWORM	
Type	Flatworm
Occurrence	Small intestine
Size (adult)	Up to 1m long
Eggs	Around 50 000 per proglottid
Diagnosis	Upon necropsy. Difficult to diagnose in live animals; however, proglottids may be seen in faeces, or moving segments may be seen crawling around anus of infected animal

The tapeworm is made up of segments, known as proglottids, each of which includes a set of both male and female gonads, which means each segment can fertilise itself or those nearby as needed. *Moniezia*, the species that affects sheep, is the most important species in South Africa's winter rainfall area.

Tapeworms need intermediate hosts, and in the case of *Moniezia*, the intermediate hosts are oribatid mites. These mites ingest the eggs that have been expelled through an infected animal's faeces, and the larval stages of the worm develop inside the mites. Sheep become infected when ingesting the microscopic pasture mites while feeding.

Signs and symptoms of tapeworm infection include scours, emaciation, pot belly, and weight loss. If infestation is severe enough, the parasites can cause bowel obstruction, which may lead to death. Sheep may also be the intermediate hosts for other mammals, such as dogs, according to Bath and De Wet. Only registered products (**see Table 5**) should be used for the treatment of tapeworm.

TABLE 5: REGISTERED PRODUCTS FOR THE CONTROL OF TAPEWORM				
Treatment	Efficacy	Use	Composition	Dosage
Palovar 4% MSD Animal Health	*	Treatment of <i>Moniezia</i> spp. in sheep and goats	Fenbendazole 4.0% m/v (trans-mixed)	Powder tadded to feed; 10mg/kg live weight
Prodos Green (Virbac)	*	Treatment of <i>Moniezia</i> spp. in lambs	Albendazole 1.9% m/v	Oral (strench); 2ml/10kg live weight
Esotal 2.5% (Merial)	*	Treatment of <i>Moniezia</i> spp. and <i>Thysanocyta</i> spp. treatment of <i>Aspilota</i> spp. treatment of <i>Stilesia leptaia</i> .	Passipantel 2.5% m/v	Oral (strench); 2ml/10kg live weight; 2ml/10kg live weight; 4ml/10kg live weight
Kalbeon Ultra (Zoetis)	Not indicated	Treatment of <i>Moniezia</i> spp.	Albendazole 1.9% m/v	Oral; one part Kalbeon Ultra to three parts water; stretch with 2ml/10kg live weight

*Class 1: 100% effective in at least 80% of treated flock

Long-necked bankrupt worm

Long-necked bankrupt worms are thin-necked roundworms that occur in the small intestine of an infected animal (**see Table 7**). They show great resilience and can survive in very cold and dry conditions.

TABLE 7: LONG-NECKED BANKRUPT WORM	
Type	Roundworm
Occurrence	Small intestine
Size (adult)	15mm to 23mm long
Eggs	Around 25 to 30 per day
Diagnosis	Eggs are easily identifiable in faecal samples

Signs and symptoms of infestation include lethargy, collapse, weight loss and scours. Death may also occur. Most damage is caused by the immature worms.

As with the treatment of other parasites, only registered products should be used (see Table 8).

TABLE 8: REGISTERED PRODUCTS FOR THE CONTROL OF LONG-NECKED BANKRUPT WORM				
Treatment	Composition	Immature	Mature	Dosage
Virbamax LV (Virbac)	Abamectin 0,2% m/v	*	*	Oral (drench): 1mL/10kg live weight
Moxiziben (Afrivet)	Triclabendazole 5% m/v; praziquantel 3,75% m/v; moxidectin 0,1% m/v		*	Oral (drench): 1mL/5kg live weight
Gardal 10% (MSD Animal Health)	Ricobendazole (albendazole sulphoxide) 10% m/v	*	*	Must be diluted before administration. Oral (drench): 1,5mL (diluted) for every 10kg live weight
Cydectin LA (Zoetis)	Moxidectin 2% m/v	*	*	Injectable (subcutaneously): 1mL/20kg live weight

*Control: ≥90% effective

Wireworm

Wireworm (see Table 9), also known as barber's pole worm, is a roundworm found throughout the world. The parasites attach to the lining of the sheep's abomasum and feed on blood.

TABLE 9: WIREWORM	
Type	Roundworm
Occurrence	Abomasum
Size (adult)	10mm to 30mm long
Eggs	10 000 eggs/day
Diagnosis	Eggs are easily identifiable in faecal sample

They produce the highest number of eggs out of all the types of worms found in sheep. Eggs are excreted via the faeces of infected animals. The eggs are then ingested by other animals while grazing. Haemonchosis, the condition that results from infestation with wireworm, causes large economic losses for farmers around the world.

Signs and symptoms of infection include anaemia, bottle jaw, weight loss, and reduced wool growth and tensile strength, as well as lethargy, depression and pallor. In lactating ewes, milk production may decline. Severe infestation may lead to death.

Once again, farmers must treat their animals with the appropriate medicines (see **Table 10**).

TABLE 10: REGISTERED PRODUCTS FOR THE CONTROL OF WEEWORM				
Treatment	Composition	Immature	Mature	Dosage
Isotax (MSD Animal Health)	Ivermectin 7.5 mg/ml	*	*	Injectable (subcutaneously): 1ml/50kg
Privid (Akvon)	Moxidectin 7.5g/100ml	*	**	Injectable (subcutaneously): 0,1ml/kg live weight
Wincide F (Virbac)	Nitroimid 34% ml/ml	*	**	Injectable (subcutaneously): 1ml/25kg live weight
Valbantal (Dorin)	Albemendazole 1.9% ml/ml; dioxinol sodium 3% ml/ml	*	*	Oral (orally): 2ml/kg live weight

* Control: 90% effective.
** Aids in control: 60% to 80% effective

In conclusion, the treatments listed here are but a few of many, and farmers are encouraged to consult their animal health technicians or veterinarians regarding the most effective options for their animals. They must also adhere strictly to the dosage and directions of use on the label of any product they use.

For more information, visit msd-animal-health.co.za, za.virbac.com, or afrivet.co.za. FW