



Annkea
Alpacas



Discussion on parasitic worms and their effects.

Compiled by Justin Weaver

The following are worm types that we have come across and what we feel to be the most important facts about them. This discussion will give you an idea of just how different each of the major internal worm types are. For the well-being of your livestock we recommend that faecal egg counts are performed regularly, and when counts are high a faecal culture be done to find out what type you are dealing with.

This is by no means a comprehensive account of each internal parasite it is merely a summary of major factors to work from, we recommend that prior to any control program that you consult with a parasitologist or veterinarian.

Barbers Pole Worm (*Haemonchus contortus*)

Blood sucking internal parasite found in the abomasum (C3)

Life cycle:

- 18 days from egg to laying eggs
- Infective larvae present within 4-6 days of eggs having been passed in faeces.
- Ingested larvae are able to arrest their own development for extended periods within their host.
- Capable of laying 5,000-10,000 eggs per day

Clinical Signs:

- Barbers Pole attaches to the stomach lining and sucks blood. Blood is also lost into the stomach from seepage. The amount of blood loss from the host has been calculated at around 0.05mL/day per worm.
- Acute signs – mild anaemia and loss of weight
- Chronic signs – Unthrifty, weak, emaciated. Can lead to death.
- Leaves animal exposed to other conditions due to weakness from anaemia.

Climate:

- Requires average temperatures exceeding 15 degrees and 50mm monthly rainfall for eggs to begin development.
- As temperature increases, time taken to develop from egg to larvae 3 decreases i.e. when 40°C larvae only survive a short time.
- Eggs and larvae 3 can survive considerable heat and dry if they remain in faeces or the soil.
- Cold & dry, or hot & dry can kill worm larvae at stage 1 & 2.
- Larvae 3 can live for 3 months in warmer weather, 6 months in colder weather. They can even survive when frozen.
- Spring through to autumn is major risk period in most climates.

Additional comments:

The energy required for growth of animals reduces by 25% on occurrence of subclinical infection.

We have been advised that if Barbers Pole worms are present then drenching should be considered at worm egg per gram counts above 300.

Black Scour Worm (*Trichostrongylus* spp.)

Known for its ability to cause scours.

Life cycle:

- Has a 22 day life cycle.
- Live attached to the small intestines.
- Capable of laying 100-200 eggs per day.
- Eggs can hatch within 1-2 days of faeces hitting the ground.

Clinical Signs:

- Damages the lining of the first 3 metres of the intestine.
- Steals nutrients prior to the host absorbing them, and reduces appetite.
- Can cause scours, ranging in severity from light to severe.
- A light worm burden reduces fleece and body growth.
- Moderate to heavy burden may leave the animal unthrifty, scouring, dehydrated, susceptible to flystrike, losing weight, or can lead to death.

Climate:

- Prefers a colder climate than Barbers Pole Worm.
- Worst period is late winter or mild winters.
- Development continues in colder months.

Additional comments:

Infections of Black Scour Worm are more lethal when mixed with infection of Brown Stomach Worm. The energy required for the animal's growth can be reduced by 50% by subclinical infection. Weaners and pregnant females are most at risk.

Brown Stomach Worm (*Ostertagia circumcincta*)

These are able to survive a range of climatic conditions, including freezing or dry, and can arrest their own development within their host.

Life Cycle:

- Have a 20 day life cycle.
- Live in the stomach, attached to the stomach wall.
- Capable of laying 100-200 eggs per day.
- Can arrest development in late winter and spring then recommence development in summer and autumn by burrowing into stomach wall.

Clinical Signs:

- Decreased appetite.
- Form an entwined mass on the lining of the stomach, causing lining to thicken and become red and mucous.
- A light worm burden can present as unthrifty and "doggy".
- A heavy burden may result in rapid loss of condition, profuse scours or death.

Climate:

- Eggs can develop in cooler winter months.

Additional comments:

Weaners and pregnant females most at risk due to lowered immunity.

Thin-Necked Intestinal Worm (*Nematodirus* spp.)

Develops up to larvae 3 inside the egg, meaning large numbers can survive severe cold & heat.

Life Cycle:

- Has a 20-day life cycle.

- Capable of laying only 50-100 eggs per day.
- Locate themselves in the first 5-6 metres of the small intestine. Larvae 3 penetrate the wall causing damage, then moult to larvae 4 attaching to the lining.
- Adults live for only a few weeks.
- Eggs laid can take 2-3 months to develop to larvae 3. Cold temperature is required to induce development. Eggs can survive a long time.

Clinical Signs:

- Most of the damage to the intestine occurs as larvae 3 embed itself in the wall.
- Can result in scouring caused by the damage, loss of appetite, lethargy and loss of condition.

Climate:

- Drought has little effect.
- Autumn and spring flushes can be a problem as it triggers development.
- Can survive both winter and summer extremes inside of egg.

Additional comments:

Considered a problem to young stock due to less resistance. Alpaca are considered susceptible to Nematodirus.

Whipworm (*Trichuris spp.*)

Life Cycle:

- 6-12 weeks from egg to egg layer.
- Larvae develop in the egg and don't hatch until ingested., therefore grazing must be at ground level in order for them to be pick up. This is a problem for alpaca.
- Larvae penetrates small intestine then migrates to the large intestine and caecum. They grow up to 8cm long.
- Faecal egg counts are a poor correlation to the number of worms present and eggs being shed.
- Eggs are resistant to being dried out.

Clinical Signs:

- Heavy burden can cause severe damage to intestines with obvious scouring and rapid loss of condition.
- Light burden causes reduced wool production and growth rates.

Climate:

- Not effected by hot or cold.

Additional comments:

Doesn't respond to most drenches.

References

- Brightling, A.: Worm control. Sheep diseases Inkata Press Pty Ltd. pp3-10, 1988.
 - Fowler, M.E.: Parasites. Medicine & surgery of South American Camelids: Llama, Alpaca, Vicuna, Guanaco 2nd ed. Ames: Iowa State University Press, pp 210-227, 1998.
 - Carmichael, I.H., Judson, G.J., Ponzoni, R.W., Hubbard, D.J., McGregor, B.A., Vaughan, J.L.: Diagnosis and control of parasites of alpacas in winter rainfall areas of Australia. Australian Alpaca Industry conference Proceedings: Alpaca - born to be worn, AAA, pp 69-73, 1999.
 - Website: www.sheepwormcontrol.com.au, Australian Wool Innovations (site no longer online)
- Black Scour Worm (*Trichostrongylus spp.*)
- Eggs can develop in cooler winter months.

Additional comments:

Weaners and pregnant females most at risk due to lowered immunity.

Thin-Necked Intestinal Worm (*Nematodirus spp.*)

Develops up to larvae 3 inside the egg, meaning large numbers can survive severe cold & heat.

Life Cycle:

- Has a 20-day life cycle.
- Capable of laying only 50-100 eggs per day.
- Locate themselves in the first 5-6 metres of the small intestine. Larvae 3 penetrate the wall causing damage, then moult to larvae 4 attaching to the lining.
- Adults live for only a few weeks.
- Eggs laid can take 2-3 months to develop to larvae 3. Cold temperature is required to induce development. Eggs can survive a long time.

Clinical Signs:

- Most of the damage to the intestine occurs as larvae 3 embed itself in the wall.
- Can result in scouring caused by the damage, loss of appetite, lethargy and loss of condition.

Climate:

- Drought has little effect.
- Autumn and spring flushes can be a problem as it triggers development.
- Can survive both winter and summer extremes inside of egg.

Additional comments:

Considered a problem to young stock due to less resistance. Alpaca are considered susceptible to Nematodirus.