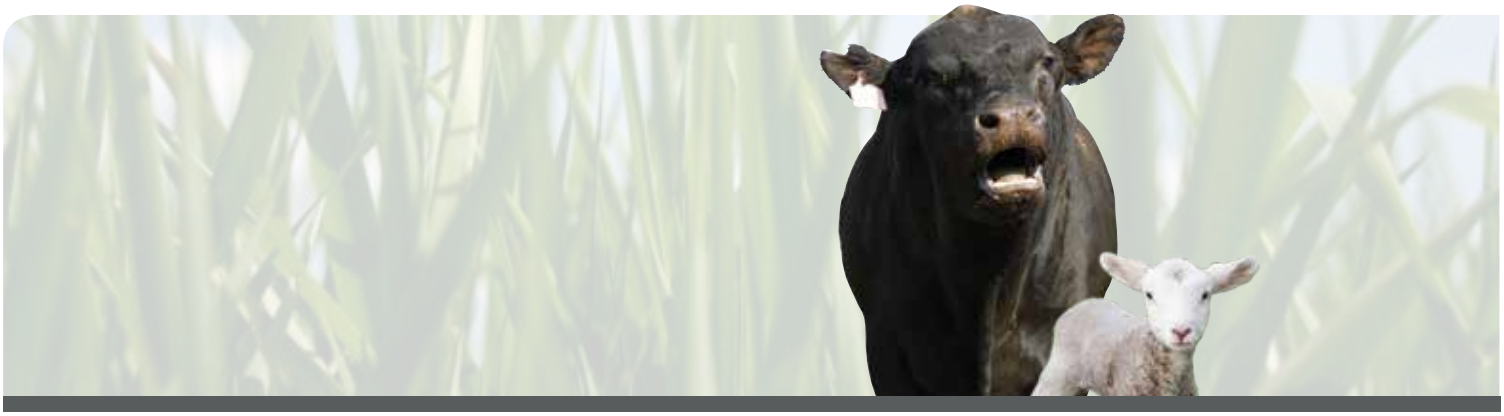
Sheep & Beef Talk

December 2017



Barbers Pole

Barbers Pole worm (Haemonchus contortus) has a similar lifecycle to other sheep worms, but with some key features that make it a big risk when the weather gets warm and wet or after a drought breaks.

Figure 1 below shows the worm lifecycle which is divided into the host (sheep) and pasture stages. About 90% of the worm population in New Zealand is found on the pasture. On pasture, eggs in sheep dung hatch and the larvae feeds on dung and moults through to an L3 stage. The time taken for development of eggs to L3 can be as short as 4 days for Barbers Pole if there is warm, wet weather. For the other worm species it takes a minimum of 3-4 weeks.

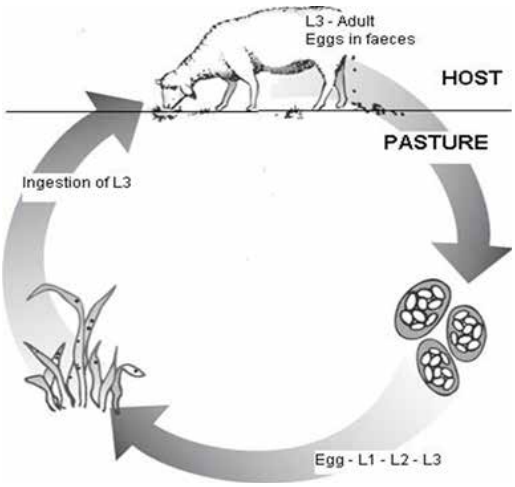


Figure 1. Simplified worm lifecycle.

Once inside the host the L3 larva burrows into the gut which causes damage. The animals immune system tries to eliminate the larvae. Fuelling the immune system costs energy so less is available for growth and production. The L3 larva moults to become an L4 and then an egg laying adult. With Barbers Pole the L4 larvae and adult worms suck blood. Sheep with blood loss are slow to move, have pale gums or can be found dead. This helps explain why even low numbers of Barbers Pole worms can severely affect ewes and lambs.

The final feature which makes Barbers Pole so dangerous is the females produce up to 10,000 eggs per day, compared to only 200 per day for the other worms.

The combination of these features means we have a potentially lethal worm that can reproduce rapidly and in large numbers. To combat this problem we need a drench that can kill Barbers Pole and provide persistent activity. The need for persistent activity against Barbers Pole means our options are limited to:

- Moxidectin (active in Exodus and Trimox), 35 days protection.
- Trimox is a triple combination with moxidectin, levamisole and albendazole
- Closantel (active in Genesis Ultra in combination with abamectin), 42 days protection

The choice gets further restricted when we think about meat withholding times. These are 10 days for Exodus, 28 days for Trimox and 56 days for Genesis Ultra.

For sale lambs this often means Exodus (or

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another brand of moxidectin single active drench) is our only option. To complicate matters further other worms are present during the Barbers Pole season which need to be managed; especially in lambs.

We are finding resistance to moxidectin on nearly half of the farms where it has been tested. The results from 2 farms are shown in Table 1. Where the kill is less than 100%, resistant worms are present.

Table 1. Percentage of worms killed with moxidectin in faecal egg count reduction test

		Kill by worm species			
	Overall Kill	Ostertagia	Trichoston-gylus	Haemonchus	Cooperia
King Country	53%	0%	0%	100%	92%
East Coast	86%	62%	88%	100%	100%

Recommended approach to Barbers Pole:

- Think of Barbers Pole as a separate issue to other worms.
- The risk of Barbers Pole is related to warm, wet weather especially after a dry spell.
- Drench choice depends on:
  - Drench resistance status of your farm
  - Age and class of sheep – impacts on withholding times
- Be careful with moxidectin to keep it working for as long as possible
  - Limit moxidectin use to sale lambs when there is a risk of Barbers Pole
  - Avoid using moxidectin in ewes pre-lamb (e.g. Eweguard, Cydectin)
  - Do a drench check 10 days after the first moxidectin drench for the season
  - Use an exit drench (Zolvix Plus is the recommended product) 28 days after the last moxidectin drench is given to kill any worms resistance to moxidectin
  - If moxidectin resistance is present you will need to use an effective combination to manage all worm species
- Consider how you can limit the number of lambs on farm after weaning to reduce the amount of Barbers Pole drench used. The key to this is high weaning weight lambs that can be sold early
- Be prepared to drench rams and ewes if a Barbers Pole challenge is likely to protect their mating performance. Use Genesis Ultra as it is our only option to get closantel into them.

Clostridial Diseases

With weaning lambs on the horizon and immunity from pre-lamb vaccinations disappearing, the risk of clostridial diseases, especially pulpy kidney, increases. The common clostridial bacteria are present on all New Zealand farms and will be with us forever. These bugs produce toxins which almost always result in death of the animal and outbreaks involving a significant number of animals. Fortunately, clostridial diseases are largely preventable with a sound vaccination plan (5 in 1, 6 in 1, 10 in 1 etc).

The common diseases are:

Pulpy kidney (PK, enterotoxaemia):

- Caused by the toxins of Clostridium perfringens, found in the intestines of healthy animals and is passed on in dung.
- A change in diet - such as weaning lambs or calves onto high quality feed changes the conditions in the gut which allows rapid growth of the bug and toxin production.
- Classical signs are sudden death in the best stock in a mob that are well fed and growing quickly.
- PK can affect animals at any age, especially when they are grazing high quality pastures (e.g. flushing ewes, hoggets on spring pastures).
- There are several strains of Clostridium perfringens, only one strain is covered in 5 in 1 and 6 in 1. 10 in 1 covers 4 strains and has been found to reduce death rates on very high quality forage such as lucerne and clovers where ewes and/or lambs were dying despite a 5 in 1 vaccination programme.

Tetanus:

- Caused by the toxins of Clostridium tetani, found in soil and dung.
- Disease occurs when tetanus spores enter wounds with dead & damaged tissue, this allows germination of the spores, rapid growth of the bug and toxin production.
- Signs usually appear 10-14 days after the injury e.g. docking, especially if rubber rings are used, and shearing cuts. Animals are stiff and go into a spasm if stimulated.

Lamb affected with Tetnus. Note stiff legs and neck.

- Animals found dead look normal

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The next 3 cause "blood poisoning" and result in sudden death. The carcass decomposes quickly. The bacteria can only grow in damaged muscles and organs.

Blackleg:

- Caused by the toxins of Clostridium chauvoei.
- Disease occurs in sheep when wet skin or a wound gets contaminated with soil (wintering stock on crops, docking/tailing in muddy yards).
- In cattle the bacteria is picked up during grazing. In muscle where it lies dormant until bruising (e.g. rough handling in yards, injections) occurs which allows bacteria growth: and toxins are produced.
- Signs appear within 3 days of wounding or bruising and death is sudden.
- The affected area (wound or muscle) is often dark red or black, swollen and has gas bubbles.

Extensive muscle damage and gas pockets under the skin due to Blackleg.

Malignant Oedema

- Caused by the toxins of Clostridium septicum.
- Similar signs to those for Blackleg.
- Also causes navel ill in lambs.

Black disease

- Caused by the toxins of Clostridium novyi.
- Liver fluke damages the liver allowing the bacteria to grow and produce toxins.
- Affected animals are depressed and reluctant to move, death occurs within 48 hours.
- Post mortem signs provide the diagnosis.

Less common clostridial bacteria in NZ include Clostridium sordellii, which can cause sudden death and Clostridium haemolyticum which is a cause of Red Water.

Fortunately, all of these diseases are relatively uncommon due to the widespread use of vaccination.

Because vaccination against clostridial disease is so effective and has been around for a long time many of you may not have seen the diseases. If vaccination of stock is not done, the diseases will happen one year, but no-one knows which year so annual vaccination should be regarded as an insurance policy. We insure our houses every year but not many of us have our house burn down!

The best vaccination strategy for your farm might be different to your neighbour so talk to your local VetEnt vet today about how best to insure your stock against losses due to clostridial diseases.

REMINDERS:

- ☑ Monitor stock for flystrike
- ☑ Check weaned lambs for B12 and selenium levels
- ☑ Have you checked that your drench works?
- ☑ Clostridial vaccination for lambs
- ☑ Make a plan for facial eczema prevention.
- ☑ Order Toxovax and Campyvax
- ☑ Book in cow/ heifer pregnancy testing for 6 weeks after bull removal