Common Goat Worms



Livestock Booklet



WORMS ARE COMMON

Internal parasite management and control contribute to significant costs within the Victorian goat industry. Unlike sheep and cattle, goats put their evolutionary efforts into developing a browsing strategy of eating, so that they weren't exposed as heavily to worms in the environment. Consequently, goats have a lower tolerance for worms, and they need extra time and money put into protecting them from infection in the first place.

The types of worms present on properties can vary depending on rainfall and seasonal conditions. Landowners should develop an understanding of which gastrointestinal worms are common on their property, and those worms' lifecycles, to help with control efforts.

IMPORTANT GOAT WORMS

Haemonchus contortus – Barber's Pole worm

Barber's Pole worm is one of the most serious worm infestations a goat can have. More information on this worm is below.

Teladorsagia circumcincta – brown stomach worm

Damages the lining of the abomasum causing scouring/diarrhoea , reduced appetite, weight loss and decreased fibre and milk production.

Trichostrongylus species – black scour worm

Like small brown worms, black scour worms damage the lining of the gut resulting in nutritional disturbances causing scouring.

Nematodirus species – thin-necked intestinal worm

Unfortunately, adult goats cannot develop a strong immunity to these worms unlike sheep. They are found in the small intestine where immature worms cause the most damage and scouring.

WHERE WE SEE WORM PROBLEMS

GOATS

There are several factors that contribute to the effect worms have on a goat's overall health and production. These include:

- Genetics selecting goats that have a higher resistance to worms.
- Nutrition the healthier a goat is, the more likely they can resist worm burdens. Consider their food's energy profile first, then protein, and lastly vitamins and minerals.
- 80:20 rule cull the goats that have the highest worm egg counts. The rest of the herd will then have much less exposure to worm larvae.
- Peri-parturient rise the month before and after kidding, any worms already in the does will start producing more eggs, as worms hibernating in the gut wall become adults.
- Goats with other diseases, such as Johne's disease, can have higher worm burdens.

ENVIRONMENT

There are a range of gastrointestinal worms commonly found in different parts of Australia. The types can vary between regions, with some worms more suited to hot, humid conditions in northern Australia, and others to cooler conditions in southern Australia. The following conditions contribute to the likelihood of your property having worms:

- Higher rainfall, with more than 500-600 mm annual rainfall OR irrigated pastures.
- Higher stocking density.
- Continuously grazing the same paddock without rotation.
- Having short pastures keep pastures as high as possible. See the diagram below for where worms can mostly be found. Goats are different to sheep and cattle, as they eat from the top down rather than the bottom up.
- Feedlots with grass usually have a higher worm count, compared to a feedlot with no grass.
- Feedlots with open feeders on the ground often result in feed becoming more contaminated with faeces, because the goats stand in them. Feeders with a hot wire across the top, that are on the other side of the fence, or that require goats to turn their head on the side to access the feed, can help mitigate this.
- Cold wet conditions favour black scour worm and brown stomach worm.
- Hot humid conditions favour Barber's Pole worm (more common in summer rainfall region).



Source: WormBoss

You can reduce the worm larvae load in your pastures, if you graze them with horses and cattle as well. The safest pastures for your goats are fodder crops and hay stubbles - keep these for weaners and kidding does.

HOW TO TEST FOR WORMS

There are several ways owners can look to see if their goats have a high worm egg count.

FAMACHA SCORE CARD

The FAMACHA score card was developed in South Africa to slow the development of drench resistance in Barber's Pole worms for sheep and goats. The system uses individual scoring, that allows producers to identify the animals that require treatment, rather than drenching every animal. It also gives producers the opportunity to record the animals that need continuous drenching, which gives them the information they need to cull them.

FAMACHA system may not be very feasible for commercial owners, however WormBoss recommends the scoring system to smallholders in regions with Barber's Pole worms as an indicator for the need to drench. To use the FAMACHA system, you need to do a worm course and a practical examination. The FAMACHA cards rate the pinkness of the inner eye lid from red to white, with white being fatal.

TAIL

The presence of scour worms initiates a strong immune response from the host animal that damages the lining of the gut, resulting in scouring. The scouring results in a loss of protein from the gut, and lowered absorption of nutrients, decreasing overall production and maybe causing the animal to die.

Often producers associate scouring with a worm issue but in some circumstances, this is not the case. Some worms like Barber's Pole worm, do not cause the animal to scour. Seasonal changes and changes in pasture quality and quantity, can also affect the gastrointestinal system and can cause loose faeces, which can be mistaken for a worm infestation. It is important to conduct a worm egg count test to be sure.

BODY CONDITION SCORE

Body condition score is a way a producer can evaluate the nutritional status of animals. The ideal score for goats is between 2.5 to 4, depending on life stage and energy demand. When a goat is in optimal condition it is likely to be more resistant to worms, have decreased worm control needs, and increased individual production.

Body condition is evaluated by feeling the tissue/fat coverage along the spine vertebrae. Coming right off the back line of their shoulder, you want the top-line to be smooth.

WORM EGG COUNT (WEC)

Conducting worm egg counts is one of the most useful worm management tools a goat producer can use, as it is practical and accurate. Adult worms in the gastrointestinal tract lay eggs that are then passed out in the animal's dung. A WEC and larval differential is achieved by testing the dung, and is an indicator of the type of worms present in the goat.

Doing a worm egg count is certainly more accurate than any visual assessment. Producers are encouraged to avoid drenching animals purely on visual aspects, and to include worm egg count results in their assessment.

To find out more on worm egg counts visit: <u>http://www.wormboss.com.au/sheep-goats/tests-tools/tests/worm-egg-counting.php</u>

KIDPLAN AND WORM EGG COUNTS (WEC)

Worm counts are taken at different stages of development to determine their genetic resistance. These stages are:

- Weaning (WWEC) estimates the genetic difference in worm burden at 100 days of age
- Post weaning (PWEC) estimates the genetic difference in worm burden at 225 days of age
- Yearling (YWEC) estimates the genetic difference in worm burden at 360 days of age.

BOTTLE JAW

Bottle jaw is caused by low protein. This can be seen in goats that are infected by liver fluke, Johne's disease and Barber's Pole worm. As Barber's Pole worms are blood sucking worms, it results in the goat becoming anaemic with less protein in the blood. If owners begin to see animals with a bottle jaw it is a good idea to check the animal's inner eye membrane to see if it is anaemic.

COAT

A goat's coat is a good indicator of its overall health and maintenance level. Goats are supposed to have soft, clean, shiny coats and owners will see this when an animal's nutrition, minerals and internal parasite control are at a suitable level. If an animal is lacking any of these things it is shown in its coat.

BARBER'S POLE WORM

The most dangerous worm for goats is the Haemonchus contortus or Barber's Pole worm. It can be present in areas that have a high rainfall (600mm annually), because seasonal humid conditions favour the reproduction of this worm.

It is very important for producers to be aware if this worm is present on their farm. If you don't have this on your property, try your absolute hardest to keep it out as it highly affects goat health and therefore production.

This worm has a hugely negative influence on production, as it can consume up to 0.05ml of blood a day. A large number of these worms present in the abomasum (fourth stomach compartment) can have a significant impact on the animal's health.

Doing a necropsy to see if the animal died from Barber's Pole worm may not always be effective as the worms escape from the abomasum right before the animal dies. In some cases you may be able to spot pin sized red dots on the abomasal wall indicating that the goat may have had these worms.



A goat being inspected using the FAMACHA system. Source: WormBoss

LIFECYCLE OF A BARBER'S POLE WORM



The larvae hatch in 4-6 days, and can stay in the pasture for months. If the weather is hot, it's around 35 days, or 4-6 months if it's cool. It takes an average of 60 days for pastures to become safe again. Their whole lifecycle takes 14-21 days.

Climate change has altered the way Barber's Pole worms operates, and in some areas they no longer go into hibernation during winter, thus they continue to lay eggs year-round.

Clinical signs your goats are suffering from Barber's Pole worm can include bottle jaw, lethargy and severe anaemia.

DRENCHING GOATS

BASICS OF DRENCHING

- Check that the drench gun is administering the correct amount of product.
- Weigh each goat so that you know how much product they need.
- You must use a drench gun, not a syringe.
- Ideally, use drenches from several different families/classes, BUT DON'T MIX THESE TOGETHER.
- Know about the worms in your herd. What species are they, and what resistance do they generally have to treatment?
- If possible, treat only the worms that need it, based off condition score, FAMACHA scores and variables (season, age, and animal use).
- Do a drench resistance test every 2-3 years.
- The best method is to use at least two drench families, but preferably three to four actives, with one of these actives being Zolvix or Startect. DO NOT MIX THESE TOGETHER THOUGH.
- Obtain, in writing, off label dose rate and meat/milk withholdings (WHPs) from your private veterinarian. THE LABEL DOSE RATES ARE NOT CORRECT FOR GOATS AND THEY ARE BEING UNDER-DOSED.
- Record animals drenched, amount and product used, and other required information within 48 hours of use, on your Veterinary Chemical Register.

5 WORM DRENCH FAMILIES

DRENCH FAMILY	PRODUCT
White drenches	Benzimidazoles (BZ) (albendazole, fenbendazole, oxfenbendazole)
Clear drenches	Nicotinic agonists (levamisole)
Mectins	Monepantel (Zolvix)
Amino-Acetonitrite Derivative (AAD)	NSAID (injectable)
Spiroindoles (SI)	Startect (derquantel + abamectin)

Combination drenches are mixtures of two or more of these drench families/classes. Looking after your worm drenches ensures they continue to be effective and active until their expiration date. They must be kept below a certain temperature to remain useable, and you must shake the drench well or regularly when using.

DRENCH LABELS

Many labels of sheep drenches state 'DO NOT USE in female sheep which are producing or may in the future produce milk that may be used or processed for human consumption'.

You should obtain written veterinary advice as to the dose rate, meat and milk withholding periods, and export slaughter intervals (ESIs). To find drenches that are registered for goats visit https://portal.apvma.gov.au/pubcris

BIOWORMA

- This product works by introducing fungal spores to the goat's intestinal tract through their food. The action of the spores significantly reduce the number of infective worm larvae that are passed through the goat's manure onto your pasture.
- No milk or meat withholding periods apply, as it is considered a natural, safe, non-toxic product, that doesn't have a detrimental effect on the soil's ecosystem.
- Bioworma is expensive, so use strategically by targeting high risk groups, for example, pregnant does and weaners.
- It is ideal for small numbers of goats, fed daily.
- It does work on drench resistant Barber's Pole worms.

THE SIX R'S OF WORM CONTROL





Riaht

animals

Right product

Right time



Right dosage rate



Administered <u>the right</u> way



Combined with right pasture management



FURTHER LINKS

Worm Boss

https://wormboss.com.au/wormboss-worm-control-program-for-goats-victoria/

Meat and Livestock Australia

https://www.mla.com.au/globalassets/mla-corporate/extensions-training-and-tools/documents/module-9_gig-guide-oct2017.pdf

NSW Department of Primary Industries

https://www.dpi.nsw.gov.au/ data/assets/pdf_file/0017/721700/Managing-worms-ingoats-in-NSW.pdf

For further information, please contact the VFF Livestock Group on 1300 882 833 or by email <u>stocksense@vff.org.au</u>

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