

tips & tools

ANIMAL HEALTH AND WELFARE



Controlling lice and other external parasites on goats

The most common external parasites of goats are lice, a number of species of mites and, in some areas, ticks. Biting flies can cause problems from time to time, sheep nose bots may also infest goats and occasionally animals can become fly struck.

Lice

Four species of lice, divided into chewing and sucking species, infest goats in Australia. The chewing lice, *Bovicola caprae* and *Bovicola limbatus*, feed mainly on skin scurf, superficial skin cells and bacteria. *B. caprae* will infest all breeds of goats whereas *B. limbatus*, the Angora goat chewing louse, is restricted mainly to Angora and crossbred goats.

Chewing lice irritate goats, causing them to itch and rub against trees, fences and other structures. This is particularly damaging in fibre goats where lice can decrease the amount of mohair and cashmere produced and significantly reduce the quality and market value of the fibre. Infestations with chewing lice can also affect skin quality.

The sucking species (*Linognathus stenopsis*) and African blue louse (*Linognathus africanus*) feed by penetrating capillaries with finely adapted mouthparts and sucking blood. The common goat sucking louse *L. stenopsis* is found on most goat species and often occurs in mixed infestations with chewing lice. The African blue louse was first identified in Australia in 1988 and is probably not widespread.

Sucking lice can reduce weight gains and cause anaemia when present in high numbers. The formation of scabby bleeding areas, stunting of weaned goats and occasionally death in heavily infested kids has been reported however heavy infestations generally only develop when goats are in ill health or under stress.

Key benefits

- Know the indicators of external parasites on goats
- Become familiar with key parasites affecting goats
- Understand different treatment strategies
- Effectively and safely use external parasite control products

Detecting infestations

The most common indication of lice is the observation of goats rubbing, scratching or biting themselves. Many other things can however cause goats to itch so it is important to actually see lice to diagnose an infestation.

Lice can be found on most parts of the body, although largest numbers are generally found in areas with long fibre.

Chewing lice and sucking lice look quite different. Chewing lice have a broad brown head and a pale brown body with dark bands. The young lice (nymphs) are smaller with a cream coloured body and a brown head, but no bands. Sucking lice tend to be larger than chewing lice with a narrow head and much wider dark brown body. They sometimes appear almost bluish in colour because of blood ingested during feeding.

Controlling lice

There are two main elements of good lice control in goats – preventing new infestations and effective treatment when infestations occur.

Preventing new infestations

In Australia goat lice appear to be specific to goats and do not generally breed on other animals or birds. Most new infestations result from contact with other infested goats, although often a supposed new infestation will have come from failure to completely eradicate lice at a previous treatment.

Treatment for lice

Sometimes goats carry only low numbers of lice that cause little problem. This is particularly so with short haired breeds. In addition, lice numbers tend to increase during autumn and winter but then fall away in summer. As needless treatment increases selection for resistance and can leave residues in product, it is important to consider whether the lice are causing any distress to goats or are likely to cause economic loss before deciding to treat. If you cannot detect an infestation, treatment is not warranted.

Methods of pesticide application available for goats include backline application, spraying and dusts. Products currently registered for treating lice in goats are shown in Table 1.

Backline application

One product, Clout-S, which contains the synthetic pyrethroid deltamethrin, is registered for control of lice in goats. In contrast to sheep, it is not necessary to shear goats before the application of Clout-S, however better effect is likely with Angora goats if they are shorn before treatment.

To gain good effect from backline treatment there are a few key rules that should be followed.

- Set dose rate for the heaviest goat in the group, according to label instructions.
- Use the correct application gun and ensure that it is delivering the required dose. This can be done with a small measuring cylinder or perhaps a medicine glass.
- The application strip should be along the middle of the back all of the way from the top of the head to the tail.
- Avoid operator contact. If other management procedures are being conducted, apply lousicide last.

Spraying

To obtain good lice control from spraying goats, it is important to ensure that the hair is thoroughly wet to the skin and that good coverage of the whole body is achieved. A coarse spray is most effective at wetting goats and reduces the likelihood of inhalation.

Dusts

Sprinkle lightly over the whole body and work into the skin. As rotenone and sulphur are the active ingredients in the only registered dusts for goats and have little residual effect, repeat treatments will be required to achieve eradication.

Key rules for effective and safe use of louse control products.

- Apply treatments thoroughly and strictly according to label instructions. To eradicate lice, all lice on each animal must come into contact with the lousicide applied. Lice can occur on most parts of the body.
- All animals on the property must be treated at a similar time. Even animals without lice clearly visible should be treated. If this is not done, once the protective effect of treatment has worn off, undetected lice on the untreated goats can spread back to the treated animals. If different groups of goats are treated at different times this can set up a cycle of reinfestation. Remember that bucks and kids can be a source of lice and should also be treated.
- Remember louse eggs. Most lousicides do not kill eggs. Eggs can take up to 10 days to hatch and the hatching nymphs can start a new infestation. It is important to establish if the treatment you are using provides residual effect for this period and, if not, to apply a second treatment approximately 2 weeks after the first.
- If possible, avoid treating goats in damp weather or where rain is expected within 24 hours.
- Consult the restrictions for use and withholding periods. The meat withholding periods for products registered for application to goats are given in Table 1. Most products should not be used on lactating animals or where milk or milk products may be used for human consumption. Remember that it is illegal to use a product not registered for this use.
- Wear appropriate protective clothing and follow safety directions and indications for avoiding environmental impacts as stated on the label. Lousicides are toxic products and some products have been withdrawn from use on other species because of concerns about operator safety.
- Consult your veterinarian if control attempts are unsuccessful.

Ticks

A number of species of ticks are found on goats although they are seldom a major problem. The main species in Australia include;

- the paralysis tick *Ixodes holocyclus* (also commonly called the scrub tick or dog tick),
- the 'Australian' cattle tick (*Rhipicephalus [Boophilus] microplus*) and
- the New Zealand cattle tick (*Haemaphysalis longicornis*).

The brown dog tick *Rhipicephalus sanguineus* and various other species of native ticks are also occasionally recovered from goats. *I. holocyclus* is the main species of concern as it may cause posterior paralysis in young goats however affected goats usually recover.

I. holocyclus paralysis toxin anti-serum is however available under prescription as Purified Anti-tick Serum (Summerland Serums Pty Ltd, Astonville NSW) and is registered for treating *I. holocyclus* induced paralysis in goats.

Products registered for controlling ticks are shown in Table 1. When treating for ticks, it is especially important to ensure that all parts of the animal, including the belly, inside legs and ears, are wet.

Mites

A number of mite species are known to infest goats but seldom cause significant problems. The main species are;

- the ear mites *Psoroptes cuniculi* and *Raillietia caprae*,
- the follicle mite *Demodex caprae* and
- the mange mite *Chorioptes bovis*.

In most cases mite infestations cause little obvious effect but sometimes, in young or old, diseased or stressed animals, lesions can spread and become more debilitating.

No products are registered for treating mites in goats and, where lesions have become extensive or infestations are thought to be causing distress to goats, veterinary advice should be sought.

Biting flies and fleas

Stable flies, bush flies, mosquitoes, biting midges, March flies, sand flies, black flies and buffalo flies can all attack goats and may cause problems with goats if the numbers become too high.

Barricade S and Blockade S are registered for control of buffalo fly in goats (Table 1).

Flystrike

Goats can occasionally also become flystruck in wounds, particularly fighting wounds in bucks, and where goats become fouled with urine or faeces although this is seldom a significant problem. There are a number of products containing diazinon and synergised pyrethrins registered for treating fly strikes in goats (Table 1).

Nose bots

Nose bot flies deposits small larvae, about 1mm long, in the nostrils of the goat. The larvae then move into the nasal passages and frontal sinuses where they complete their development. When sneezed out by the goat they may be up to 2cm in length.

There is only limited information available on extent of infestation of goats in Australia and in most cases they cause little economic impact. Treatment is rarely necessary and, as there are no products registered for use in goats, should only be carried out only under veterinary instructions.

All chemicals should be used according to labelling requirements with particular attention to WHP and ESIs.

Withholding period

The withholding period (WHP) is the minimum period which must elapse between last administration or application of a veterinary chemical product, including treated feed, and the slaughter, collection, harvesting or use of the animal commodity for human consumption. WHPs are mandatory for domestic slaughter and on the label of every registered product.

Export slaughter interval

An export slaughter interval (ESI) is the time that should elapse between administration of a veterinary chemical to animals and their slaughter for export.

Table 1 - Insecticides and acaricides registered for ectoparasite control in goats

Parasite	Active group	Constituent	Brand name	Application	Manufacturer	WHP meat (days)
Lice	SP	Deltamethrin	Clout-S*	Backline	Coopers	3
	OP	Diazinon	Nucidol 200EC	Spray	Novartis	14
	OP	Diazinon	Di-Jet†	Spray	Coopers	14
	OP	Diazinon	WSD Diazinon‡	Spray	WSD	14
	Botanical/inorganic	Rotenone & sulphur	Inca Pestene Insect Powder§	Dust	INCA	1

Ticks	OP/SP	Cypermethrin & chlorfenvinphos	Blockade S*	Dip	Coopers	8
	OP/SP	Cypermethrin & chlorfenvinphos	Barricade S*	Dip	Fort Dodge	Not set
	Formamidine	Cypermethrin & chlorfenvinphos				
	Formamidine	Amitraz	Tactic EC[†]	Spray	Intervet	Nil
	Formamidine	Amitraz	Tactic WP[‡]	Dip/spray	Intervet	Nil
	Formamidine	Amitraz	Amitik[§]	Dip/spray	Coopers	Nil
		Amitraz	Amitik EC[§]	Spray	Coopers	Nil
Mites			Nil			
Nasal bot			Nil			
Flystrike	OP/others	Diazinon & pyrethrins & PBO	WSD Flystrike* Powder	Dust	WSD	14
	OP/others	Diazinon & pyrethrins & PBO	WSD Mulesing* powder	Dust	WSD	14
	OP/others	Diazinon & pyrethrins & PBO	Flystrike powder	Dust	Coopers	14
Buffalo flies	OP/SP	Cypermethrin & chlorfenvinphos	Barricade S*	Dip	Fort Dodge	8
	OP/SP	Cypermethrin & chlorfenvinphos	Blockade*	Dip	Coopers	8
Fleas			Nil			

* Do not use on female goats which are producing or may in the future produce milk or milk products for human consumption.

† Milk taken from goats within 48 hours following treatment must not be used for human consumption or processing.

‡ Milk collected from does with 48 hours following treatment must not be used for human consumption or processing. This milk should not be fed to kids.

§ Do not use on lactating does where milk or milk products may be used for human consumption.

|| NSW only; however, a permit currently exists for use in Qld but only under the supervision of DPI&F.

Milk WHP nil.

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Further information

Tips & tools: Controlling nematode parasites of goats in pasture-based systems

Going into Goats: Profitable producers' best practice guide Module 9 'Parasite Control'

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