NEW ERA AGRICULTURE MAGAZINE

Management of external parasites in sheep and goat

B.V. Vivekananda Reddy, T. Mounika, Bidyut Prava Mishra

Introdution

External parasitism leads to reduced quality of sheep and goat products, particularly skins, and results in decreased income for producers. Common external parasites in sheep and goats encompass ticks, lice, keds, and mites. Certain parasites survive by consuming blood, inducing blood loss that can lead to anaemia, particularly in young animals. This outcome translates to undernourished, low-performing sheep and goats. Incorporating a consistent plan for treating and preventing external parasites is a crucial component of maintaining flock health. The advantages of a successful program for controlling external parasites encompass heightened comfort for animals, enhanced performance, and superior product quality. This article evaluates the harm caused by external parasites and outlines measures for preventing, managing, and treating them to minimize their impact on the productivity of sheep and goats.

Effects of external parasites

- Attaching to the host leads to skin irritation, followed by ulcers and secondary infections.
- They consume body tissues like blood, skin, and hair. Severe infestations lead to anaemia.
- They bring about discomfort and annoyance.
- External parasites can pass diseases from sick to healthy animals.
- Ticks attaching to the paws can result in significant lameness.
- Bites have the potential to harm sensitive skin areas.
- Decreased feed intake, resulting in decreased weight gains and milk production
- Skin damage, hair loss, Scale formation, thickening and wrinkling

Major external parasites

Sheep and goats can suffer from a range of external parasites; the major ones include ticks, mites, lice, ked, fleas and flies.

Ticks

Tick borne parasitic infections in sheep and goats include:

Babesia ovis: transmitted by Rhipicepalus bursa and Rhipicepalus evertsi

B.V. Vivekananda Reddy, T. Mounika, Bidyut Prava Mishra
PhD Scholar, NTR College of Veterinary Science, Sri Venkateswara Veterinary University, Tirupati, Andhra Pradesh

Babesia motasi: transmitted by Haemophysalis spp, Dermacentor spp, and Rhipicepalus bursa

Theileria ovis: transmitted by Rhipicepalus bursa and Rhipicepalus evertsi

Anaplasma ovis: transmitted by Rhipicepalus bursa and Rhipicepalus evertsi

Heart water: transmitted by Ambylomma herbarium and Ambylomma variegatum

Tick paralysis: transmitted by Ixodes rubicundus, Rhipicepalus evertsi, Ambyloma and Dermacentor

Ticks may be divided into two major groups namely the soft ticks (Argasids) and the hard ticks (Ixodids). Hard ticks can further be divided into three (one host, two host and three host ticks) depending upon the number of hosts involved in their life cycle.

Lice

Lice are small wingless insects. The head is broad and flat with mouth parts adapted to chewing. There are two types of lice, the biting lice and the sucking lice.

- Biting lice graze on epidermal tissue, hair and other organic waste. They cause intense itching by their action.
- Sucking lice have a narrow head with mouthparts adapted for penetrating the skin of the host and sucking blood. Both immature and adult stages suck the blood or feed on the skin.

Most lice populations on animals vary seasonally, depending on the condition of the host. Lice populations on animals are greater during the rainy months. Animals under stress will usually support larger lice populations than found under normal conditions. Lice do not transmit a serious disease in sheep and goats. The saliva and feces of lice contain substances capable of causing allergies giving rise to severe irritations to the skin. This is usually shown by the animal rubbing itself against objects. General unthriftyness, matted, dull fleece with tufts of wool may indicate lice infestation.

Sheep ked

Sheep ked, commonly known as sheep ticks, are adult hairy wingless brown six legged flies about 6 -7 mm long. They are permanent ectoparasite and feed on blood. They transfer from animal to animal through direct contact. Sheep ked can live up to 6 months, during which time the female produces around 10 to 15 young ones every eight days. Unlike most insects, a female ovulates a single egg that hatches into maggot-like larvae. The maggots are nourished within the body of the female ked until they are fully 5 grown. The mature larva is expelled and glued to the host's fleece. This causes irritation followed by scratching, bitting and rubbing against standing objects, fences stones and shrubs which damages the skin and wool. Both

male and female keds are blood feeders and feed several times every day. Heavy infestation may, therefore, cause severe anaemia. Skin puncture by blood sucking keds causes an inflammatory response of the skin to the presence of keds and their saliva known as cockles. Keds are mainly seen in colder areas and infestation may be reduced when the animals are moved from cold to hot dry areas.

Mange mites

Mites are tiny in size and most difficult to see and identify without the aid of microscope or at least a hand lens. The life cycle of mange mites is similar to ticks with egg, larva, nymph and adult stages. All the stages stay on the animal, feeding on the epidermis, serum, hair, and in some cases, burrowing beneath the epidermis or into hair follicles. A female mite lays up to 16 eggs in her lifetime. Life cycle is completed in about one month. Mites spread from one animal to another mainly through direct contact. Mites do not live very long when removed from the animal. Mites damage leads to skin inflammation and is often accompanied by hair and wool 6 loss. High temperature, humidity and sunlight favour mange mite infestation. Major mange mites may be psoroptic, Sarcoptic or demodectic according to the species of infesting mite.

Fleas

The stick tight flea is the most common flea on sheep and goats. It attaches firmly to its host usually on the face and ears. This species remains attached to its host for as long as 2 to 3 weeks. During this time, eggs are layed. They drop to the ground and hatch into larvae. Large populations of this flea may cause ulcers on the head and ears. Flea infestations spread to other animals including humans.

Prevention of external parasites

- Perform a thorough physical assessment of your sheep and goats on a weekly basis. Run your hand over each animal's coat, checking for excessive hair loss, loose skin flakes, skin irritations, and any crusty lesions or bumps that could indicate external parasite infections. If you notice any signs of parasite infection or if an animal appears unhealthy, immediately separate and isolate it. This prevents the potential spread of infection to the rest of the animals.
- Keep the quarantined animals apart from the main group until treatment is completed and the parasites are eradicated.
- When introducing new animals, isolate them and treat them for external parasites before integrating them with the existing animals.

- Maintain good sanitation practices by regularly cleaning the animal shelters. Seal any cracks in the walls and floor with cement or mud. Dispose of all litter and discarded wool away from animal contact, either through burning or proper disposal methods.
- It's also important for farmers to be mindful of methods to reduce tick populations in pastures. Practice rotational grazing by changing the areas where livestock graze. Whenever possible, avoid pastures with high tick numbers. Consider using chickens in areas with numerous ticks, such as around watering spots, as they can help control the tick population.
- promote animal hygiene through regular shearing of sheep, especially to address lice and keds. Additionally, make a habit of shearing and washing animals regularly.

Treatment

Types of acaricides commonly used and their target parasites

Acaricides may be applied to animals by several methods. The following are the most common methods used.

- **Dipping:** This is very effective if large numbers of livestock need to be treated. Concrete dipping baths that are stationary or a mobile vat can be used especially for sheep and goats. All body parts have adequate contact with the chemical solution since animals are completely wetted. Dipping should be done in the early morning, so that animals are not immediately exposed to

	Compound	**Target ectoparasites**
Organophosphates	Coumaphos	Lice, ticks, mites, horn flies
	Trichlorfon	Lice, mites
	Diazinon	Lice, ticks, mites, horn flies
	Dioxathion	Lice, mites, horn flies
	Fenthion	Lice, horn flies
	Malathion	Lice, kids, mites
	Chlorpyrifos	Lice, horn flies
Chlorinated hydrocarbons	CHC	Mites, lice, ticks, flies
	Thioden	Mites, lice, ticks, flies
Carbamates	Carbaryl	Mites, lice, ticks, flies
	Promacyl	Mites, lice, ticks, flies
Pyrethrins & pyrethroids	Deltamethrin	Mites, lice, ticks, flies
	Cypermethrin	Mites, lice, ticks, flies
Avermectins	Doramectin	Mites, lice
	Ivermectin	Mites, lice

the hot sun. Dipping is not recommended if heavy rain is expected soon after, as the chemical may be washed off quickly.

- **Hand Spraying:** Hand spraying using knapsack sprayers is the most commonly used method of applying acaricides. It is effective especially if a small number of animals are to be treated. During spraying, the animal should be tied securely and the entire animal should be sprayed by following a strict sequence starting at the head and finishing at the tail to cover all areas of the body thoroughly.
- **Pour on acaricides:** a small volume of a special acaricides is poured along the backline of an animal. It disperses over the body surface to kill the infesting ectoparasites. This is a very effective method of control.
- **Injection:** This is a relatively new form of a systemic pesticide such as Ivomac. This is simply injected into the animal. There is a broad spectrum of action against a host of parasites. These compounds are generally more expensive than the other alternatives

Impregnated ear tags: Some countries use impregnated ear tags, containing acaricides. These are of increasing importance in fly control.