

## Tick Infestation: An Overlooked Threat Among Cattle Farmers

A. Ramyasree, S. Shiyamala, K. Jeeva and S.T. Bino

Sundar

Department of Veterinary Parasitology, Veterinary College and Research Institute, Veerapandi, Theni -625 534.

[doi.org/10.5281/VeterinaryToday.20362107](https://doi.org/10.5281/VeterinaryToday.20362107)

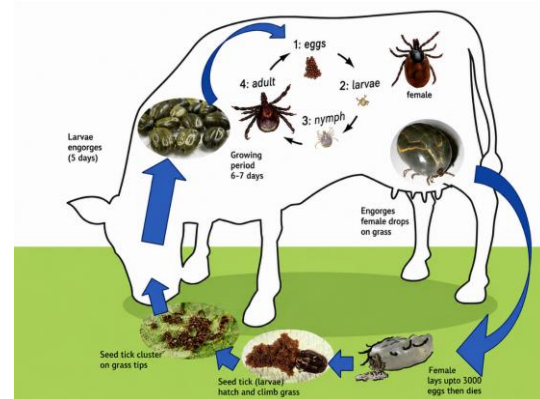
Tick infestation in cattle has been recognized as one of the challenging and perennial problem in cattle, causing significant economic losses to poor farming communities in terms of production losses, mortality in severe cases and cost of treatment. The cattle ticks *Rhipicephalus (Boophilus) microplus* and *R(B) annulatus* ticks commonly infest cattle. Ticks are cosmopolitan in distribution, but the magnitude of tick infestation is naturally high in tropical and subtropical regions with warm and humid climates, which are suitable for breeding and survival of various tick stages. Economic losses due to tick infestation are classified as direct and indirect. Direct losses include blood loss, tick toxicosis, tick paralysis, tick worry, damage to hides and udders. Indirect losses occur through transmission of many haemoprotozoan diseases such as babesiosis, theileriosis and anaplasmosis, and predisposition to secondary infections such as screw worm myiasis and dermatophytosis, and the expenses incurred for tick control.



Tick infestation in cattle

### Life cycle of tick

Male and female ticks suck blood from the host. On host mating takes place. Shortly after the mating is completed the male tick dies and female ticks suck sufficient blood from the animal (Engorged females) and drop off the host and deposit 4400-5000 eggs in crevices, debris, or under stones. After 7-14 days, eggs hatch and develop to Larvae (Seed Ticks). The larva is six-legged that climb vegetation to attach to a passing host. Larvae attach, feed, and moult into eight-legged nymphs on the



same animal. Nymphs moult into adult ticks, feed, mate on the host, and the engorged female drops off to start the cycle again. As the cattle tick is one host tick i.e all the developmental stages occur in a single host, it is very easy to control compared to two host and three host ticks.

### Ideal sites for ticks to lay eggs

Generally, ticks prefer moist environmental conditions for oviposition. If we generally take a look around the animal house, the cracks and crevices, stones, under feed and water troughs, water pipes are the most favourable conditions for the ticks to lay eggs. The pillars are the favourable environment for the seed ticks to climb.



**Engorged ticks found under the water trough indicated by red circle**



**Cattle ticks in oviposition**

### Control of ticks

Ticks can be controlled on host by direct application of acaricides to the animal's body. Among the control methods, chemical method is most commonly used by the farmers. These chemical acaricides are advantageous over others in terms of efficacy, mode of application, dosage form and cost. Ethnoveterinary medicines can also be used by farmers as it is eco-friendly, cost-effective, causes minimal environmental pollution, and is suitable for organic farming. On host and off host application of acaricides is essential. Many farmers are not aware that the acaricides should be sprayed in double the concentration in and around the animal house especially in the cracks and crevices which is the favourable environment for tick to lay eggs.

### General considerations to be taken for tick control in cattle

➤ If one find ticks on the host, the immediate measures to be taken for control is chemical method. Chemical method includes Organophosphates, Pyrethroids, Organochlorines, Carbamates, amidines and Macrocyclic lactones. Apply the acaricides on the animals at the proper recommendation and dosage as directed by the manufacturer or veterinarian. Applying acaricides only on the animal is not sufficient, as it kills only the ticks present on the host but does not kill the ticks present in the animal house. Chemical acaricides applied on the animal have a limited period of efficacy. Once their effect decreases, the next generation of ticks, which develop from eggs laid in the animal house, hatch into larvae and climb onto the host animal. Therefore, along with treating the animals, acaricides should also be applied to the floor and surroundings of the animal house as directed by the veterinarian or manufacturer.

➤ Ethnoveterinary approaches can also be helpful. NDDDB had approved method of tick control.

- Ingredients: Garlic - 10 pearls; Neem leaves - 1 handful; Neem fruit - 1

handful; *Acorus* rhizome - 10 g; Turmeric powder - 20 g; *Lantana* leaves - 1 handful; Tulsi leaves - 1 handful.

- Preparation: (i) Blend all the ingredients. (ii) Add one litre of clean water. (iii) Strain with a sieve or muslin cloth. (iv) Transfer to a bottle attached to a sprayer.
- Application: (i) Spray on the entire body of the animal. (ii) Also spray on any cracks and crevices in the cattle shed. (iii) Application can also be done using a cloth dipped in the solution. (iv) Repeat once a week till the condition resolves. (v) Do the application only during sunny part of the day.

- The animal house should be free of cracks and crevices.
- Concrete flooring is most advisable. If the animal house does not have a concrete floor, the cracks and crevices should be checked regularly for ticks.
- Chickens can be reared near animal houses to naturally reduce tick infestation

(Predator-Prey relationship).

- Rotational use of chemical acaricides.
- If farmers have an alternative shelter, animals can be

temporarily shifted for about one month as part of an effective tick control strategy. During this period, ticks hiding in the cracks, crevices, and floors of the original animal house are deprived of a blood meal and gradually die due to starvation. This practice helps to break the tick life cycle and significantly reduces reinfestation in livestock shelters.

**“Lack of awareness and knowledge among farmers about tick control can be the reason for tick infestation in cattle which causes huge economic losses in the diary and leather industry. Cattle farmers and entrepreneurs need to approach the nearby veterinarian and get inputs on effective tick control in protecting health and productivity of cattle. A tick free herd of cattle is always productive and profitable”**

