



Fighting Ticks - The Traditional Way: Ethnoveterinary Practices in Rural India

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Abstract

Ticks are a major challenge for livestock health in India, spreading diseases and reducing productivity. Synthetic acaricides are costly and carry risks of resistance and residues, making them less suitable for rural farmers. Ethnoveterinary medicine (EVM), based on traditional knowledge and natural resources, provides affordable and sustainable tick control. Remedies such as neem, karanja, turmeric, garlic, calotropis, and others are widely used by communities and supported by emerging scientific validation. Preserving this knowledge through documentation, integration into veterinary practice, and community-based training is essential for sustainable livestock health management.

Key Words: Ticks, Prevention and Ethno medicine.

1. Introduction

Ticks – the tiny blood-sucking parasites are a menace to livestock farmers across India. From reduced milk production in cows to severe skin irritation in goats, ticks can wreak havoc on animal health. However, in many rural corners of India, where veterinary access is limited and synthetic drugs are expensive, farmers have relied on age-old wisdom passed down through generations to fight this threat is ethnoveterinary medicine.

2. What is Ethnoveterinary Medicine?

Ethnoveterinary medicine (EVM) refers to the traditional knowledge, beliefs, and practices used by rural communities to treat animal health issues. Rooted in local culture and biodiversity, EVM is based on natural remedies – mostly herbs, oils, and household ingredients – and offers a sustainable and affordable alternative to

conventional veterinary care (Mathias-Mundy and McCorkle, 1989; Punniyamurthy *et al.*, 2005).

3. Ticks: A Common Rural Problem

Ticks aren't just a nuisance – they can transmit dangerous diseases like Babesiosis, Theileriosis, and Anaplasmosis. In India's humid and warm climates, ticks thrive on cattle, buffaloes, goats, and even poultry (Ghosh *et al.*, 2007). Commercial tick repellents are effective but costly and sometimes lead to resistance or chemical residues in animal products (George *et al.*, 2004). This is where traditional knowledge becomes crucial.

4. Traditional Tick Remedies in Indian Villages (with Telugu Names)

Here are some widely used ethnoveterinary tick control methods from various parts of India, with **Telugu names** for local relevance:

(a) **Neem – Azadirachta indica** (వేపచెట్టు)

- **Use:** Leaves are crushed or boiled in water to make a decoction, then sprayed or applied to the animal's body.
- **Effectiveness:** Neem contains *azadirachtin*, a natural insecticide with acaricidal properties.
- **Reference:** ICAR-IVRI field reports, Punniamurthy (2005).

(b) **Tobacco – Nicotiana tabacum** (పొగాకు)

- **Use:** Leaves are soaked in water overnight; the extract is filtered and diluted before topical use.
- **Note:** Nicotine is a strong compound and must be used cautiously.
- **Region:** Common in Andhra Pradesh and Telangana.
- **Reference:** Pal *et al.* (2014), South India survey.

(c) **Turmeric – Curcuma longa** (పసుపు)+ **Mustard Oil – Brassica juncea** (ఆవనూనె)

- **Use:** A paste is prepared with turmeric powder and mustard oil, applied to affected areas.
- **Benefit:** Turmeric has antimicrobial and healing properties, while mustard oil suffocates ticks.
- **Reference:** Rout & Patra (2010).

(d) **Karanja – Pongamia pinnata** (కరణ్ణచెట్టు/ కానుగ)

- **Use:** Karanja oil is applied directly or mixed with neem/coconut oil.
- **Action:** Contains *karanjin*, a bioactive compound effective against external parasites.
- **Reference:** Pugazhvendan *et al.* (2009).

(e) **Buttermilk – Churned curd** (మజ్జజిర)+
Salt – Sodium chloride (ఉపప్పు)

- **Use:** Buttermilk helps bring ticks to the skin surface; salt is used to scrub and detach them.
- **Region:** Documented in Karnataka and parts of Telangana.
- **Reference:** BAIF Development Research Foundation (2011).

(f) **Garlic – Allium sativum** (వెల్లులి) +
Coconut Oil – Cocos nucifera
(కొబ్బరినూనె)

- **Use:** Garlic cloves are crushed and mixed with warm coconut oil; this preparation is massaged onto the skin.
- **Action:** Garlic has natural sulfur compounds and a strong odor that repels ectoparasites; coconut oil has soothing and insecticidal properties.
- **Region:** Tamil Nadu, Odisha
- **Reference:** Bhardwaj & Sharma (2013); Ethnovet Database, TDU Chennai.

(g) **Calotropis – Calotropis gigantea**
(జల్లడుచెట్టు)

- **Use:** Leaves are crushed and rubbed on the skin or boiled in water for a repellent wash.
- **Caution:** The latex is toxic if ingested or overused; should be used with care.
- **Properties:** Contains alkaloids and cardenolides, which repel ticks and other ectoparasites.
- **Region:** Common in dry areas of Andhra Pradesh, Telangana, and Rajasthan.
- **Reference:** NIF documentation.

(h) **Custard Apple – Annona squamosa**
(సీతాఫలించెట్టు)

- **Use:** Seeds are ground and mixed with oil to form a tick repellent paste.
- **Action:** Contains acetogenins, known to have insecticidal activity.
- **Region:** Maharashtra, Andhra tribal belts.

- **Reference:** Arulmozhi *et al.* (2006), field ethnovet reports.

(i) **Holy Basil – Ocimum sanctum**
(తుల్సి)

- **Use:** A decoction of leaves is sprayed on the animal's body, or essential oil is added to base oil.
- **Effect:** Acts as a natural repellent and antimicrobial agent; also improves skin health.
- **Region:** Pan-Indian; especially Bihar, UP, MP.
- **Reference:** Sharma *et al.* (2012); TDU reports.

(j) **Lemon – Citrus limon (నిమమకాయ) + Camphor – Cinnamomum camphora**
(కరపూరం)

- **Use:** Lemon juice mixed with crushed camphor is diluted in water and applied externally.
- **Action:** The citrus acid and strong camphor aroma repel ticks and soothe irritated skin.
- **Region:** Used in Kerala and Coastal Andhra.
- **Reference:** Folk practices recorded in ethnobotanical surveys, Kerala Forest Research Institute (KFRI).

(k) **Aloe Vera – Aloe barbadensis**
(గృతకుమారి/ కల్పంద్ర)

- **Use:** Fresh gel is applied directly to tick-infested skin areas.
- **Benefit:** Soothes inflammation, promotes healing, and repels external parasites mildly.
- **Region:** Rajasthan, Andhra Pradesh, Karnataka.
- **Reference:** Ethnoveterinary Manual, DAHD (2010).

(l) **Ash or Wood Charcoal Powder –**
(బొండ్రి)

- **Use:** Dusting ash over the animal's body, especially around ears, neck, and tail base.
- **Action:** Absorbs moisture and suffocates ticks; also provides relief from itching.

- **Region:** Widespread across India; common among pastoralists.

- **Reference:** Indigenous Technical Knowledge reports by BAIF & NIF.

(m) **Teak Leaf Smoke – Tectona grandis**
(టీకీ కు చెట్టు పొగ)

- **Use:** Dry teak leaves are burned and animals are exposed to the smoke in a ventilated shelter.
- **Purpose:** Smoke acts as a fumigant to drive off ticks and flies.
- **Region:** Tribal areas in Telangana and Chhattisgarh.
- **Reference:** Field notes, National Innovation Foundation (NIF-India).

5. Community Wisdom in Action

In rural India, *Pashu Vaidyas* (traditional animal healers) are guardians of ethnoveterinary knowledge. They rely on locally available plants and indigenous techniques to treat animals effectively without modern drugs. Organizations like the National Innovation Foundation (NIF-India) and ICAR are working to document and validate these practices for broader veterinary use.

6. Science Supports the Tradition

Several traditional practices are now being validated by scientific studies. Neem and karanja oils have been proven effective in controlling tick infestations in both field and laboratory conditions. These natural remedies offer a viable, low-cost alternative to synthetic acaricides, especially in rural and resource-poor settings.

7. The Way Forward

Despite their potential, traditional remedies face threats from:

- Loss of oral knowledge
- Lack of formal documentation
- Limited integration into formal veterinary curricula

There is an urgent need to:

- Document and preserve traditional veterinary knowledge
- Promote integrated tick management approaches

- Support community-based validation and training

8. References

- Arulmozhi, S (2006). Pharmacological properties of *Annona squamosa* seeds: A review. *International Journal of Green Pharmacy*, 2(2), 68–70.
- BAIF Development Research Foundation. (2011). *Compendium of Indigenous Technical Knowledge in Animal Husbandry*. Pune, India.
- Bhardwaj, H. L., & Sharma, M. (2013). Ethnoveterinary practices of garlic and turmeric among rural livestock keepers in Himachal Pradesh. *Indian Journal of Traditional Knowledge*, 12(1), 122–125.
- Department of Animal Husbandry, Dairying & Fisheries (DAHD). (2010). *Manual on Ethnoveterinary Practices for Livestock Health*. ICAR-ATARI.
- Kerala Forest Research Institute (KFRI). (2014). *Ethnobotanical records of traditional smoke fumigation*. Field reports.
- George, J. E., Pound, J. M., & Davey, R. B. (2004). Chemical control of ticks on cattle and the resistance of these parasites to acaricides. *Parasitology*, 129(S1), S353–S366.
- Ghosh, S., Azhahianambi, P., & Yadav, M. P. (2007). Upcoming and future strategies of tick control: A review. *Journal of Vector Borne Diseases*, 44(2), 79–89.
- Mathias-Mundy, E., & McCorkle, C. M. (1989). *Ethnoveterinary medicine: An annotated bibliography*. Iowa State University.
- National Innovation Foundation–India (NIF). (n.d.). *Traditional Knowledge Practices for Livestock Health*. Retrieved from <https://www.nif.org.in>
- Pal, D. T., et al. (2014). Ethnoveterinary practices in Andhra Pradesh and Telangana: A field study. *Journal of Traditional and Folk Practices*, 12(1), 25–31.
- Pugazhvendan, S. R., Elumalai, K., & Ross, P. R. (2009). Repellent activity of herbal extracts against the tick *Rhipicephalus (Boophilus) microplus*. *Journal of Parasitic Diseases*, 33(2), 75–80.
- Punniyamurthy, N., Duraipandiyan, V., & Ignacimuthu, S. (2005). Antimicrobial activity of ethnoveterinary plants used for treating udder infections in Southern India. *International Journal of Applied Research in Veterinary Medicine*, 3(2), 163–167.
- Rout, S. D., & Patra, H. K. (2010). Ethnoveterinary practices used for treatment of livestock ailments by tribals of Mayurbhanj district, Odisha, India. *Veterinary World*, 3(1), 17–20.
- Sharma, A., & Singh, H. (2012). Ethnoveterinary uses of *Ocimum sanctum* in livestock diseases. *Journal of Ethnopharmacology*, 140(2), 401–405.
- Trans-Disciplinary University (TDU). (n.d.). *Ethnoveterinary Medicine Database*. Retrieved from <https://www.tdu.edu.in>