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Lantana Camera Plant Poisoning in Livestock Animals

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Abstract

Lantana camara is a poisonous plant that causes phototoxicity in ruminants, leading to symptoms such as anorexia, depression, swelling of eyelids, and sloughing of skin. Symptomatic treatment includes oral activated charcoal, purgative, liver tonic, electrolyte therapy, and parental administration of antihistaminic and vitamin B-complex with liver extract. The plant is commonly isolated from herds and can cause skin itching.

Introduction

Lantana camera is an exotic ornamental shrub and has spread as an intractable weed in many parts of the world (Sharma *et al*., 1988). Many other important species of lantana include *L. indica, L. crenulate, L. trifoliata, L.lilacina, L.involuerata,* and *L. sellowiance* (Sharma *et al*., 1981). There are many varieties based on flower colors such as red, pink, white, and orange from which the red flowered variety is thought to be the most toxic but other varieties can also be highly toxic (Govindaiah *et al.*, 2021). The plant grows to a 2-3m height and spreads its branch to cover a surrounding area. Mature leaves are rough and have an unpleasant odor and taste so the animals avoid their consumption. Poisoning mainly occurs when the animals are unfamiliar with the plant and are introduced to the new pasture with the lantana plant and consume one percent or more of its body weight depending on the toxic content (Shafi *et al*., 2020). Lantana leaves and berries are toxic to livestock (Haritha *et al*., 2019), including cattle, buffalo, sheep, goats, camels, horses, dogs, rabbits, ostriches, and rats (Sharma *et al*., 2007; Kumar *et al*., 2018; Ambica *et al.*, 2020; Govindaiah *et al*., 2021), with cattle, buffalo, and sheep being highly susceptible (Sharma *et al.*, 2007).

Lantana camara plant causes toxicity in grazing animals due to its presence of Lantadenes, particularly Lantadene type-A, which are absorbed through the entire digestive tract, mainly the small intestine, causing hepatotoxicity, photosensitization, and jaundice (Sharma *et al.*, 2007). Hepatotoxicity caused by grazing animal's ingestion of plant foliage is a

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significant cause of livestock morbidity and mortality in lantana-infested regions (Sharma and Makkar, 1981; Sharma *et al*., 1979). Lantana toxins, primarily absorbed through the small intestine, can cause liver damage and inhibit bile secretion. Ruminal stasis, continuous absorption, and intrahepatic cholestasis are signs of liver injury. They also damage peripheral parenchymal cells and the bile canalicular membrane, causing inflammation and cholestasis. Animals typically die within 2 to 4 days after ingestion of toxins, exhibiting signs of weakness, sluggishness, bloody diarrhea, edematous ears and eyelids, cracks and fissures, conjunctivitis, ulceration of the tongue tip and under surface, pale mucous membranes, and sclera of eye.

Fig. 1 *Lantana camera* plant

Symptoms

Sun-induced skin sensitivity, hepatotoxicity, jaundice, yellow discoloration of visible mucous of eye, skin, and muzzle, reddening and inflammation of non-pigmented skin, swelling ears and eyelids with discharge from eyes, ulcers, bacterial invasion, dehydration, avoiding direct sunlight and tends to stand under the shed, refuse to eat, diarrhea with a strong smell, and black color feces. The disease can cause liver damage, sluggishness, dehydration, diarrhea, and death.

Treatment

Lantana toxicity can be treated with combined therapy of activated charcoal, purgative, liver tonic, electrolyte therapy, and parental administration of antihistaminic and vitamin B-complex with liver extract. The activated charcoal adsorbs toxic components, purgatives remove them from the gastrointestinal tract, and electrolyte therapy restores liver functions. Keeping animals in dark, shady places reduces the photosensitizing potential of toxic principles. Oral administration of activated charcoal has been used for treating lantana toxicity, and a combined treatment of liver tonic, anti-histaminic, rumenotonic, and dextrose has been described earlier for the treatment of lantana toxicity by Ekambaram *et al*. (2014) and Pass and Stewart (1984).

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