TOXICITY EPISODES OF MIMOSA INVISA IN CATTLE

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Introduction Mimosa invisa is a serious weed and is a good legume manure and a bio-weedicide in coconut, coffee and tea plantations which causes severe toxicity in cattle.

Objectives:

1. To study the toxicity of Mimosa invisa in cattle and to assess the serum biochemical parameters
2. To study the post mortem and histopathological changes

Materials and methods: Sixteen adult indigenous cattle (300-400 kg) affected with the natural toxicity by consuming the Mimosa invisa (25-50 g/kg) with confirmed toxicity. Blood samples were collected once in 3 days. Usually the course of the toxicity was 14 days. Haematological parameters like haemoglobin, TC, DC and PCV and serum biochemical parameters like AST, ALT, creatinine, blood urea nitrogen, bilirubin, were estimated.

Results and discussion: The affected animals had reduced ruminal motility and started passing pelleted dung on day 7 and 8 and there was ascites, dyspnoea. Later these animals showed the development of perineal oedema. All the animals exhibited severe perineal oedema and died within day 14 consumption of the plant. Out of 16 animals, 12 animals died. Necropsy revealed anasarca, swollen and jelly-like kidneys. These necropsy features were similar to the report of Rajan et al. (1986) in calves fed Mimosa invisa. The nephrotoxicity due to consumption of the plant was evident in histology where the kidney sections of all died animals showed the cytoplasmic vacuolation of endothelial cells in the glomeruli and the tubules with varying degrees of lymphoid cell infiltration in the interstitium. All these changes were suggestive of tubular interstitial nephritis (Heptinstall, 1976). There was no change in AST and ALT values and histologically the liver, spleen, heart, lymph nodes and the lungs were apparently normal indicating non-toxic nature of this plant on these organs. There was significant increase in the concentration creatinine and urea nitrogen. An increase in BUN and serum creatinine concentration above the normal value implied that at least 75 % of nephrons were not functioning (Bartola, 1995). There was no change in haematological parameters.

Conclusion: The present study revealed the toxic nature of the Mimosa invisa which caused severe perineal oedema and death in animals consumed the plant. This study confirmed the plant as a cause for the clinical syndrome of perineal oedema which was apparently due to nephrotoxicity.

Keywords: Mimosa invisa, Toxicity, Cattle