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Patterson's Curse and Cupricide®

'Patterson's Curse', (otherwise called 'Salvation Jane', 'Viper's Bugboss', 'Riverina Bluebell', or Echium lycopsis - previously Echium plantagineum) contains Pyrrolizidine alkaloids which at certain growth stages can cause liver damage in stock. Although the effect of Patterson's Curse is not as pronounced as with Heliotrope or Ragwort, we have taken the precaution of reducing the recommended copper concentration to 0.5ppm in drinking water.

The Effect of Pyrrolizidine Alkaloids

The plants containing pyrrolizidine alkaloids produce effects specifically toxic to the liver. The damaged liver then becomes sensitive to copper intake and quickly results in copper toxicity. The copper toxicity is further enhanced by low cobalt intake by the animals and low molybdenum content of the soil, which has an antagonistic effect on copper (detoxifying effect on copper).

The plants containing large quantities of pyrrolizidine alkaloids are: Cotton fireweed (Senecio quadrientatus), heliotrope, ragwort, and in lesser quantities, Patterson's curse.

If the cattle have cobalt bullets or feed supplemented by cobalt (B^{12} vitamin synthesized by the rumen bacteria from cobalt), or the soil has sufficiently available molybdenum, which antagonises the copper absorption and translocation into the liver, then the effect of pyrrolizidine alkaloids on the health of the animal can be completely reduced or even eliminated.

The animals affected by pyrrolizidine alkaloids lose condition within two weeks to two months and some in the group may have chronic scour. Their gaits may become unsteady; they tire easily and become partially blind. The resulting deaths may be confused with anthrax, enterotoxaemia, encephalitis and pneumonia.

On post-mortem, the mesentry, lymph nodes, and the alimentary tracts are usually aedematous. The liver is usually dark and has rounded edges. Haemorrhages can be seen on the spleen, kidneys and gastro-intestinal tracts.