

PRODAIRY NEWS

TOXIC PLANTS: KNOW YOUR POISON

There are more than 1000 plants in Australia that have been recorded as toxic to animals. This article discusses some common plant toxicities that can affect cattle.

NITRATE/NITRITE

High levels of nitrate in plants is toxic to grazing cattle. Nitrate can have a direct effect on gastrointestinal system causing diarrhoea but the major problem is caused when excess nitrate is converted to high levels of nitrite in the rumen. Pasture and forage will accumulate nitrates under stress conditions such as prolonged periods of low light, low moisture, pest infestation or if excess nitrogen is applied via fertiliser or farm effluent. Increased risk of toxicity is also commonly seen in particular forage plants during rapid growth in highly nitrogenous soils. High risk plants include:

- Ryegrasses (*Lolium* species)
- Cereal grasses (oats, barley, maize, wheat)
- Sorghums
- Millet
- Kikuyu
- *Brassica* species (turnips, kale, rape)
- Certain weeds (eg. pig weed, mint weed, variegated thistle, capeweed).

Early signs include staggering and blindness. Death is often rapid (hours), but animals may be seen with rapid, gasping breathing and convulsions. Many individuals may be affected. Prompt veterinary treatment is required in affected animals.

Risk of nitrate poisoning can be reduced by feeding suspect pasture in the afternoon, feeding for a short period of time and offering hay prior to grazing.

CYANIDE

Cyanide poisoning can occur in animals fed sorghums and sometimes couch grasses. These feeds can accumulate cyanide (prussic acid) under certain conditions, such as overcast periods or very hot weather when plants wilt during the heat of the day.

Affected cattle show rapid deep breathing, salivation, muscle twitching or trembling, spasms and staggering. Death may occur within a few minutes to an hour.

BLUE-GREEN ALGAE

Blue-green algal blooms can occur in fresh, brackish and marine waters during summer and autumn, usually under drought conditions when water levels in dams and lakes are low. The most commonly affected organ is the liver and affected animals tend to present with either sudden death or they may develop jaundice and signs of photosensitisation. The prognosis is poor once the animal is showing signs. Control is through prevention of access to areas with algal blooms.



Photosensitisation can be a sign of pyrrolizidine alkaloid toxicity.

BRACKEN FERN

Fern species are often drought-tolerant with rapid revival after rain. The toxin ptaquiloside may cause different syndromes depending on the dose and duration of exposure. Acute poisoning often results in fatal infections and/or haemorrhages due to bone marrow suppression. Clinical signs do not occur until there has been access to bracken for 2 to 8 weeks. Signs may be sudden and include loss of appetite, depression, ill-thrift, fever, dysentery, drooling saliva, dryness of the skin and red urine. Death usually occurs in 1 to 5 days, although affected cattle may continue to die for up to 6 weeks after removal from bracken exposure. Prevention involves restricting access to bracken especially if pasture availability is poor.

PYRROLIZIDINE ALKALOIDS

Pyrrolizidine alkaloids are derived from plants such as ragwort, heliotropes and crotalaria. They cause chronic and fatal liver damage. Such plants are relatively unpalatable but are more likely to be eaten during feed shortages or if ensiled or present in hay. Affected animals may show depression, poor appetite, ill-thrift, jaundice and mild photosensitisation. Once animals are showing clinical signs, treatment is often futile.

If you are concerned about disease in your herd an early diagnosis by your ProDairy vet can prevent costly losses.

Your ProDairy vet can examine stock, undertake diagnostic tests and initiate a prevention and control plan if a plant toxicity is suspected.

This article is adapted from an original article by Apiam dairy vet Dr Gemma Chuck in Dairy News Australia (April 2019)