



Bracken Fern Poisoning of Cattle

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Updated: June 2007

AG0107

ISSN 1329-8062

Bracken fern (*Pteridium aquilinum* var *esculentum*) is a natural plant of forest areas. On farms it is classified as a weed because it competes with pasture for moisture, nutrients and light and is poisonous to stock. Ptaquiloside, a known carcinogen, has been identified as the toxic factor concerned.

In Victoria, bracken grows in regions of high rainfall on well drained soils. Bracken poisoning is a problem on farms adjacent to hilly areas such as the Great Dividing Ranges in the North-East, Stony Rises and the Otway Ranges in the South-West, Strzelecki Ranges and hills of South Gippsland and on coastal sands.

Predisposing Factors

The toxicity of the plant varies. The most toxic parts are the underground stems (rhizomes), next come the younger green fronds and the least toxic parts are the mature fronds.

Cattle exposed to bracken that has been slashed, ploughed or burnt are at risk because of the regrowth of young stems and the exposed rhizomes.

The toxicity and palatability of bracken varies with season, growth and locality which makes the condition difficult to manage.

There are two situations where bracken fern poisoning commonly occurs, firstly when high quality pasture feed is in short supply, and secondly when the pasture is very lush and stock are looking for roughage. The first scenario is much the most common, especially in the autumn in Victoria. Frequently it is young stock, around 8 – 18 months of age, which are affected partly because they haven't learnt to avoid the bracken but also because they are given the poorer pastures to graze.

Signs in Cattle

Two distinct clinical syndromes have been recognised in cattle, a chronic form and a sub-acute form.

The sub-acute form is the more common and usually occurs when cattle have had access to bracken for at least 10 days. The toxin in the bracken affects the bone marrow which is the source of both red and white blood cells. Because the white cells are not properly formed the animals are susceptible to many forms of infection. Common clinical signs therefore include:

- i) High temperature,
 - ii) Diarrhoea,
 - iii) Panting respiration,
 - iv) Abdominal pain,
 - v) Death.
- Because the red cells and platelets are also affected, the blood clotting mechanism doesn't function properly either. Clinical signs related to that include:
- vi) Bleeding from any external orifices eg. nose, anus, vulva, and mouth.
 - vii) Pale gums, eyeballs and other surface membranes,
 - viii) Pinpoint haemorrhages in the skin, gums, and vaginal surfaces,
 - ix) Blood in the urine,
 - x) Death.
- The more chronic form of disease is a cancer of the bladder wall. The clinical signs relate to this, typically being:
- xi) Blood clots in the urine,
 - xii) Redwater,
 - xiii) Thickened bladder wall,
 - xiv) Loss of condition.

Death usually follows but it is a lingering process in contrast to the more sudden death which occurs in the acute form.

Post Mortem

In acute poisoning cases, the signs seen relate to infection and the inability of the blood to clot. Many haemorrhages are present throughout the carcass. They may be seen inside the stomach, muscles, lungs, heart and intestines. Post mortem signs with the chronic form of poisoning are seen in the bladder.

Signs of bracken poisoning can be confused with the signs of diseases such as anthrax, mucosal disease, blackleg, arsenic poisoning and some fungal poisonings.

Treatment

Treatment of the condition is almost always unsuccessful. If diagnosed early, blood transfusions may be beneficial and antibiotics on a veterinary prescription can also be given to control secondary infections.

Prevention

Removal of the bracken is the surest way of preventing poisoning and this has been done on many properties. Cultivation, slashing and the use of registered herbicides are ways to control bracken.

If any of the above control methods are used on a paddock, stock access to this paddock should be monitored closely. Regrowth, and the ensuing palatable young green fronds, are a bigger danger to stock than

mature fronds. Exposed underground rhizomes are even more toxic. Care should be taken not to allow hungry, young, cattle access to bracken that has recently been sprayed, slashed, burnt or cultivated. If stock must graze these areas always provide a good alternative feed source such as silage, hay, or cereals.

Pasture improvement (to provide plant competition for the bracken) and controlled grazing to keep the pasture healthy are both essential in keeping bracken to a level where it's of minimal risk to grazing stock.

Goats are more resistant to bracken poisoning than cattle and are often grazed on hilly country to aid in the control of bracken.

Acknowledgement

This Information Note was originally developed by Mike Jeffers. The previous version was published in November 1998.

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