



Animal &  
Plant Health  
Agency

## Bracken poisoning in pigs

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### Background

There have been a total of 13 APHA diagnoses of likely bracken poisoning in pigs between 2007 and 2017, with bracken being the most common cause of plant poisoning in pigs during this period.

The other plant poisoning diagnosed was hemlock causing congenital limb deformities in piglets.



Figure 1 Bracken fern (*Pteridium aquilinum*)

### Pathology

In pigs, bracken poisoning causes a cardiomyopathy and heart failure and post-mortem findings reflect this with pulmonary oedema, pleural effusion (see figure 2 below) and, sometimes pallor of the myocardium.

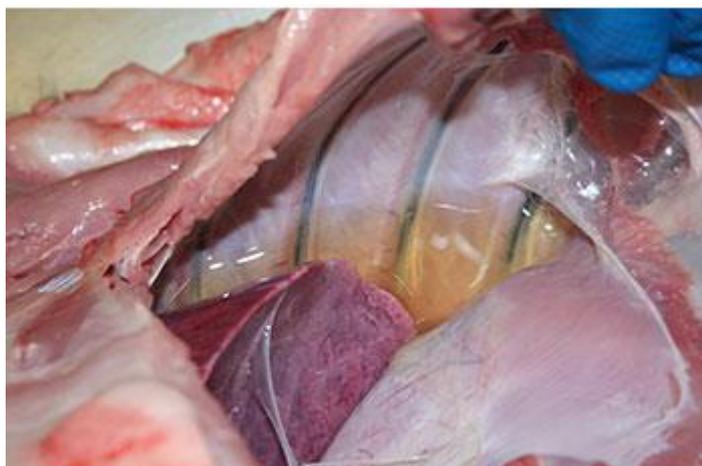


Figure 2 Pulmonary oedema and pleural effusion.  
Image courtesy of Andrew Holliman APHA Penrith

## Clinical signs and differentials

Clinical signs may be predominantly respiratory distress and dyspnoea but, in many of the APHA cases, pigs were found dead without signs having been seen.

Ataxia was reported in one case prior to death. Differential diagnoses for the gross lesions include mulberry heart disease, PCV2 associated disease, fumonisin toxicity, encephalomyocarditis virus and other causes of heart failure e.g. congenital defect, endocarditis and histopathology is necessary to confirm the diagnosis, together with a history of exposure to bracken.

Harwood and others (*Veterinary Record* 2007 160: 914-915) give a full description of two typical cases.

## Typical features

Most cases occur in small outdoor groups of pigs with less controlled paddocking than in commercial pig herds and with access to heathland, woodland or fell where bracken is present. Six cases have been diagnosed by APHA laboratories in Wales, six by Winchester, and one by Penrith.

Bracken toxicity in pigs usually results from exposure over a prolonged period and is due to the thiaminase toxic component. The rhizomes and young leaves contain most thiaminase, thus natural rooting by pigs and access to growing bracken both predispose to ingestion and toxicity.

There is not a clear seasonal distribution of the cases which were diagnosed in all months except May and June, although nine occurred between July and December compared to four between January and April. Poisoning occurs in areas where pigs have access to bracken growing naturally and the toxicity and palatability of bracken can vary with season, growth and locality.

Poisoning could also occur if bracken was incorporated into pig bedding. All the APHA cases have been in growing pigs three to seven months old and age may affect susceptibility, however deaths in sows after long-term bracken exposure have also been reported (Lund, *Pig Journal* 1984 13: 96-97). If pigs are grazing known bracken-infested land for long periods or cases of poisoning are diagnosed then supplementation with thiamine by injection should be considered.

## Protecting food safety

Bracken poisoning is reportable to the Food Standards Agency as a potential food safety incident and pigs must be withdrawn from potential exposure to bracken for at least 15 days prior to slaughter for human consumption of meat and offal.