

## Bracken fern *Pteridium aquilinum*



Coarse perennial fern to 1 m tall. Older fronds leathery, 0.3 to 1 m long, triangular in outline with three main divisions and many small subdivisions. Rhizomes horizontal, underground, about 0.5 cm in diameter. Distributed throughout all southern states; most common in old fields, waste places, open woods, and roadsides, particularly on relatively dry sites.

### Toxicity

The poisonous principle is the enzyme thiaminase, which inactivates thiamine (Vitamin B<sub>1</sub>) in the horse. In ruminants, an aplastic-anemia factor causes depression of the bone marrow. Sheep are less susceptible to the toxic effects than cattle and horses.

All portions of the plant are toxic whether green or dry. Poisoning by the plant is cumulative, and symptoms may not appear until several weeks or months later. Clinical cases are most often seen in the spring or late summer or fall, especially after periods of drought when other forage is short or not available. Animals have shown toxicity from consuming hay containing the dried plants.

### Symptoms

Horses exhibit incoordination, often standing with their legs spread apart as if bracing themselves. The affected animal arches its back and neck into a crouching stance. Occasionally a fever is present up to 104°F. Before death horses may “head press” objects and have spasms with the head and neck drawn backwards.

Cattle may exhibit two types of symptoms. The laryngeal form is seen often in younger animals and is characterized by edema of the throat region, resulting in difficult and loud breathing. The enteric form may be preceded by the laryngeal form. The enteric form is characterized by bloody feces, blood in the urine, and excessive bleeding from fly bites. The blood is slow to clot since platelets are deficient. Death usually occurs within a few days after symptoms appear.

Sheep have shown blindness due to degeneration of the retinal epithelial cells after grazing bracken fern.

### Treatment

Remove animals from areas infested with bracken fern.

Give horses injections of thiamine at a dosage of 100 to 200 mg per day for 7 to 14 days.

In cattle, use whole blood transfusions, broad spectrum antibiotics, DL-batyl alcohol, and protamine sulfate.