**Ranunculus** (buttercup) risk in pasture and hay

Worldwide, there are approximately 600 species of *Ranunculus*, commonly known as buttercup or crowfoot. According to the current USDA PLANTS database, nearly 30 different *Ranunculus* species are found in Kentucky. Fresh *Ranunculus* leaves, flowers, and stems have a sharp, pungent taste and are usually avoided by grazing livestock. Some *Ranunculus* species contain varying quantities of ranunculin, a compound hydrolyzed to protoanemonin when plants are damaged — for example, by grazing or mowing. Protoanemonin is a vesicant, causing blistering of the skin, mouth, and digestive system on contact. *Ranunculus* species with high ranunculin concentrations are the most toxic. Dried *Ranunculus* is expected to lose toxic potential fairly rapidly, although specific research has not been published to confirm this. Protoanemonin forms a non-vesicant compound, anemonin, upon drying.

*Ranunculus* ingestion can cause mouth pain, blisters, drooling, oral and gastric ulcers, colic, and diarrhea. Clinical signs can be severe if large quantities of *Ranunculus* are ingested, but the acrid taste usually deters further grazing in horses and cattle. Clinical signs are typically seen only when other forage is unavailable and animals are forced to consume *Ranunculus*. Sheep may be more likely than other grazing animals to eat the plants, particularly immature stages. Horses are probably the most sensitive species to the gastrointestinal effects of *Ranunculus*. One anecdotal report has suggested a possible association between presence of *Ranunculus* in pastures and abortions in cattle. Another suggests the same possible association in horses. Attempts to reproduce the disease have not been successful in either horses or cattle, and the hypothesized association remains unconfirmed.

A review of UKVDL records over the last 13 years found no cases of livestock deaths attributable to *Ranunculus* ingestion. It is possible that cases of colic or diarrhea have been caused by *Ranunculus* ingestion but were never attributed to the plant. Because animals avoid grazing *Ranunculus* when possible, it proliferates in overgrazed pastures. Overgrazing is prevented by maintaining appropriate stocking rates. *Ranunculus* poisoning is most likely in starving animals. The risk in Kentucky is minimal as long as plenty of other forage is available; unpalatable fresh plants are generally avoided when possible, and dried plants are less toxic than fresh.

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