

INVASIVE PLANTS THAT ARE TOXIC TO LIVESTOCK



The Okanagan-Similkameen's diverse habitats provide some of BC's most productive rangelands and agricultural resources for raising cattle, horses, sheep, goats, llamas and alpacas. Unfortunately these lands are also susceptible to invasion by non-native plants.

Invasive plants or weeds compete with desirable vegetation and adversely affect native and domestic forage production and quality. They are highly destructive and difficult to control allowing infestations to persist for many years and spread to new areas. Weeds also steal critical water supplies and negatively impact water quality by undermining riparian vegetation and accelerating stream sedimentation and soil erosion. When established, weeds not only reduce the aesthetic appeal of the landscape, they also create fire and traffic hazards and lower property values.

Invasive plants may also directly impact livestock health. Some plants have sharp spines and burs that puncture and scratch animals, increasing stress and veterinarian costs. Others may lead to animal fatalities, either through direct poisoning, or through an accumulation of nitrates and soluble oxalates. However, the majority of toxic weed poisonings result from animals feeding on contaminated hay; most livestock are unable to selectively avoid toxic plant material when dried.

This brochure is intended to assist landowners in protecting their livestock from toxic invasive plants in the Okanagan-Similkameen region. Although some native plants are poisonous, only introduced species will be discussed.

NOTES ON TOXICITY

Toxins may occur in some or all plant parts including leaves, roots, stems, flowers and seeds, at varying degrees of concentration. Often these toxins are only poisonous during certain stages of growth or seasons of the year and therefore may provide good forage if feed at the right time.

In most circumstances livestock rarely directly consume toxic plants. Poisonings are most likely to occur through consuming large quantities of contaminated hay or silage in the early spring and during a drought when forage quality is low. In these circumstances, livestock are either unable to detect dried plants or are so hungry that even toxic plants become a potential source of food.

Several common plants can also cause livestock poisoning through accumulation of large amounts of ingested nitrates, which then convert to nitrite – a compound that reduces the oxygen-carrying capacity of blood, stressing organ tissues, a condition known as anoxia. The most common cause of nitrate poisoning is through agronomic grasses. However several weedy species, such as lamb's-quarters, lady's-thumb and kochia can also contain large amounts of nitrate.

SYMPTOMS OF POISONING

Livestock poisonings are often undiagnosed as symptoms can be as general as a decreased appetite, weight loss or unhealthy appearance. Symptoms can also be as severe as liver or nervous system damage and death. If livestock are experiencing unusual symptoms it is important to contact your veterinarian for proper diagnosis and treatment. If you suspect a poisonous plant, carefully take a specimen to your local Weed Coordinator or District Agrologist. In the case of fatal poisoning, it is sometimes possible to determine the cause of death from samples of stomach content.

When consulting with your veterinarian, inform them of any changes to your pasture or range, including:

- Sparse forage due to heavy grazing, drought or poor early season growth
- Recently moving livestock to a new pasture
- Recently fertilizing pasture with nitrogen followed by cool weather and slow growth
- Feeding livestock hay from a new source

WHAT YOU CAN DO

- Learn to identify toxic weeds and the most effective control options
- Examine pastures, hay fields, roadsides and fence lines regularly for toxic plants
- Check your hay and forage
- Prepare a grazing strategy to avoid livestock concentrating and overgrazing
- Fence off areas in pastures where poisonous plants occur or range an alternative livestock that is not impacted by that specific plant
- Share your knowledge with your livestock association or club members
- Support provincial biological control programs and work with your regional weed coordinator
- Consult your veterinarian to correctly identify a suspected poisoning from plants

RESOURCES

For further information on toxic weeds check out the links listed on the Provincial Weed Website at www.weedsbc.ca or the Animal Health Centre at <http://www.agf.gov.bc.ca/ahc/index.htm>.

You may also contact the Ministry of Agriculture and Lands Office in **Kelowna** at 1-888-332-3352 or in **Kamloops** at 1-888-823-3355.

For more information about the Regional District of Okanagan-Similkameen Weed Education Program contact the Regional District at 250-492-0237 or toll free at 1-877-610-3737.

Information is also available on our website at www.rdos.bc.ca

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TOXIC WEEDS IN THE OKANAGAN-SIMILKAMEEN



St. John's-wort (*Hypericum perforatum*) is a perennial plant growing from 0.1-1.0 metres high. It has numerous, small bright yellow flowers clustered a top rust coloured

stems. Leaves are opposite and oval-shaped with prominent veins and transparent dots. The plant spread through the lateral root system, forming buds that separate from the parent and through prolific seed production – each plant is capable of producing 15,000 to 30,000 seeds per plant.

The plant contains a photosensitizing chemical hypericin. This chemical causes skin problems when ingested by cattle, horses, rabbits, sheep, and swine with light-coloured skin; dark skinned animals are not affected. The effects are most severe when animals ingest green plants; effects diminish slightly as plants dry. St. John's-wort poisonings have also resulted in convulsions, staggering, and coma in some animals.

Hound's-tongue (*Cynoglossum officinale*) is a Eurasian tap rooted biennial or short-lived perennial plant introduced to North America as a seed contaminant. Seeds germinate in the



spring producing large, hairy tufts of tongue shaped leaves (10-30 cm long, 2-5 cm wide), which then bolt to 0.5-1.2 metres tall in the second year. Dull reddish-purple flowers bloom May – July in the second year, producing 2,000-4,000 seeds per plant.



The plant contains toxic pyrrolizidine alkaloids, which interferes with cell division causing disorders of the central nervous system and hepatic failure in horses and cattle. The alkaloids are in the highest concentrations when the plant is in the rosette stage. Cattle that have ingested hound's-

tongue often experience increased thirst, nervousness, and dairy cows can experience a drop in milk yield. Unfortunately, there is no effective treatment for animals with terminal liver damage; however you may relieve pain and stress from the secondary effect of photosensitization by providing animals with shade.

Leafy Spurge (*Euphorbia esula*) is a perennial flowering plant, introduced from Europe and Asia. It produces small yellowish green flowers arranged in many small clusters with distinctive yellowish-green heart shaped bracts underneath. Leaves are alternate and narrow, stems are from 20-90 cm in height. Leafy spurge has an extensive lateral root system and contains white milky latex throughout the plant.



Reproduction is through seed but primarily from lateral roots. A large mature plant may produce up to 130,000 seeds.

The milky latex contains 5-deoxyingenol, a compound that is toxic and may lead to death in cattle and horses. The toxin may also produce inflammation and loss of hair on the feet of horses when freshly mowed or during haying. Other symptoms include irritation to the gastrointestinal tract, dermal and eye irritation and lack of performance and weakness. Although sheep and goats may be used as a form of biological control of this weed when consuming as a portion of their diet, deaths have resulted where animals are restricted to leafy spurge only.

Hoary alyssum

(*Berteroa incana*) is a perennial, biennial or annual growing up to 70 cm tall. It has white flowers on long slender stalks with grayish-green leaves. The upper leaves clasp close to the stem and the entire plant is covered in star-shaped hairs.



This plant can be toxic to horses, causing swollen legs and severe lameness. Consumption of large quantities can also cause diarrhea, leading to dehydration and miscarriage. The plant remains toxic after it is dried, and most poisonings are due to contaminated hay.



Tansy ragwort (*Senecio jacobaea*) is a Eurasian introduction found in fields across much of North America. It is a biennial or short-lived perennial plant that produces several to many daisy-like, bright

yellow flowers in flat-topped clusters. Flowers are arranged a top stems growing 0.2 –1.2 metres high. The plant gets its name for the 'ragged' appearance of the leaves, which are deeply cut. Tansy ragwort spreads by seed only, producing more than 150,000 seeds per plant, each of which may remain viable for over 20 years and dormant for 4-5 years in the soil.

Tansy ragwort contains pyrrolizidine alkaloids, which may lead to irreversible liver damage in cattle, horses and possibly goats. All parts of the plant are toxic; however, the flowers and leaves closest to the flowers contain the highest concentrations of alkaloids. Other symptoms include a peculiar bleached colour of the hair, nervousness, staggering, coma and death. Lactating cattle may also experience a rapid loss of milk production. Milk produced may have a bitter taste and an unpleasant odour.

