



PREVENTION TIPS FOR HORSEBACK TRAIL USERS

It is important to ensure invasive species are not moved from place to place. Here are a few steps you can take to help prevent their spread.



- REMOVE** plants and mud from boots, gear, pets & vehicle.
- CLEAN** your gear before entering & leaving the recreation site.
- STAY** on designated roads & trails.
- USE CERTIFIED** or local hay.



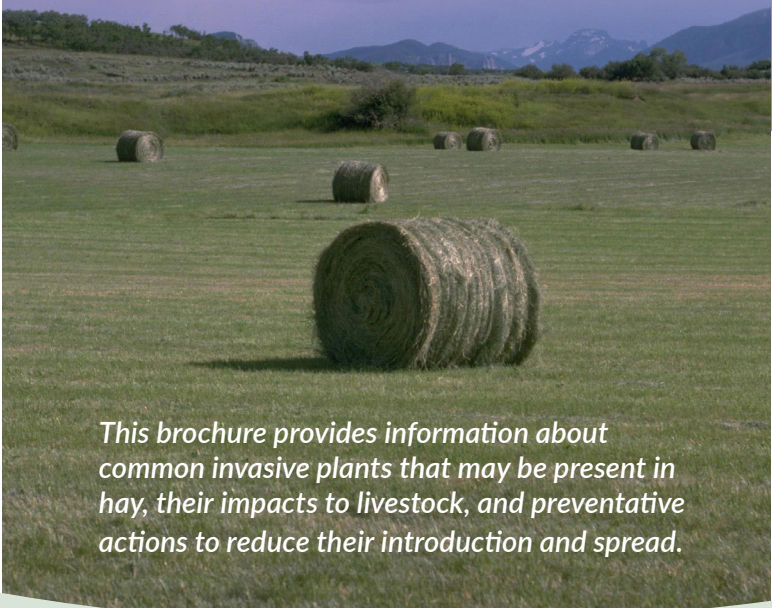
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HAY!

DO YOU KNOW WHAT IS IN YOURS?



This brochure provides information about common invasive plants that may be present in hay, their impacts to livestock, and preventative actions to reduce their introduction and spread.



The Region of BC's Best



WHAT'S THE CONCERN?

Invasive plants are non-native plants whose introduction cause economic, social or environmental damage.

Hay is one of several pathways for movement of invasive plants throughout the Thompson-Nicola Region and beyond.

Invasive plants in hay fields results in decreased yields and reduced quality. Furthermore, some invasive plants are harmful to livestock when consumed and can lead to acute or chronic toxicity.

The good news is that many livestock prefer desirable plants and avoid the less palatable invasive plants.

However, when pastures become heavily invaded, livestock are forced to eat the potentially toxic invasive plants. Invasive plants can also be unknowingly consumed when they end up in hay bales.

PREVENTION TIPS FOR HAY CONSUMERS

Some plants remain toxic through the haying process and identification of dried plants can be very difficult. However, there are simple actions you can take to reduce the likelihood of purchasing infested hay and spreading it throughout your pastures:

- Learn to identify invasive plants in their living and dried states. If in doubt, take a sample to your local agrologist or feed supply store for identification.
- Purchase locally sourced hay from a reputable producer. Ask your producer what invasive plants they have in their fields OR walk the field and look for invasive plants prior to harvest.

HERE'S HOW YOU CAN HELP!

Whether producing, selling or purchasing hay, there are simple actions you can take to help prevent the spread of invasive species.

PREVENTION TIPS FOR HAY PRODUCERS

Invasive plants are often a symptom of poor land management programs. Keep your fields healthy and invasive plant free by following these practices:

- Seed bare spots in your fields. This reduces available habitat for invasive plants and improves hay production. Be certain to purchase certified seed and request and review the seed analysis certificate.
- Maintain healthy soils for optimal hay production. Test your soils for nutrient content, composition, pH and other characteristics and amend as needed.
- Monitor your fields for invasive plants regularly on foot. Windshield surveys are not accurate indicators, as the extent of the infestation often goes undetected.
- Manage your invasive plants prior to cutting your hay.
- Identify and mark infested hay bales so they are not moved off the field.
- If you are moving livestock from contaminated areas into your fields, hold them in a smaller pasture (controllable area) until seeds move through their digestive systems.
- Do not overgraze. Practice rotation to allow desirable plant recovery. A good rotation schedule is to move livestock to another field when desirable plants have been reduced to 3-4".

- If clean hay is unavailable, isolate the contaminated hay and animals to a confined area. This will contain invasive plant establishment and facilitate monitoring and eradication of new invaders.
- If you have toxic invasive plants in your pasture, consider temporarily fencing off the infested areas to prevent accidental ingestion until the infestation can be managed.
- Practice good pasture management, as outlined above.

INVASIVE PLANTS THAT ARE TOXIC TO LIVESTOCK

There are many factors that affect the severity of livestock poisoning. These include toxicity of the plant, quantity consumed, size and species of the animal and general health of the animal.

Alsike clover (*Trifolium hybridum*)
Livestock Impacted: Cattle and horses
Impacts: liver damage and photosensitization.
Symptoms: Colicky behavior, brown urine, clay-colored manure and skin lesions



Nightshades, Black (*Solanum nigrum*)
Bittersweet (*Solanum dulcamara*)
Livestock impacted: Horse, cattle, sheep, goats, and swine
Impacts: Nervous system
Symptoms: Loss of muscle control, abdominal pain, emaciation, rough hair coat, and constipation.



Bur buttercup (*Ceratocephala testiculata*)
Livestock impacted: Cattle, horses, sheep, goats, and swine
Impacts: Skin blistering and kidney damage.
Symptoms: Blister and lesion on mouth, abdominal pain, vomiting, diarrhea, dizziness, convulsions, and blood in urine. Sheep may collapse, pigs may show paralysis, and cows may produce bitter, red-tainted milk.



Common burdock (*Arctium minus*)
Livestock impacted: Cattle and horses
Impacts: Skin and eye irritant and digestive tract
Symptoms: Slobbering, frothing, drooling, obvious irritation of the skin, eyes, mouth, nose or ear.



Hoary alyssum (*Berteroa incana*)
Livestock impacted: Horses
Impacts: Edema
Symptoms: Swelling of lower legs, warm hooves, fever, diarrhea, stiffness of joints and reluctance to move.
**Hay containing 20% or more of Hoary alyssum should not be fed to horses.*



Hounds Tongue (*Cynoglossum officinale*)
Livestock impacted: Cattle and horses
Impacts: Central nervous system and liver
Symptoms: In cattle, staring, diarrhea, increased thirst, nervousness and drop in milk yield. In horses, nervousness, rapid breathing, depression, diarrhea, blood in urine and yellow pigmentation of skin.
** The concentration of the various alkaloids is highest in the rosette stage*



Kochia (*Kochia scoparia*)
Livestock impacted: Cattle, horses, and sheep
Impacts: Photosensitivity, liver damage, and kidney disease
Symptoms: Anorexia, nervousness, blindness, labored breathing, dehydration, depression, rolling eyes, yellow pigmentation of skin, peeling skin (necrosis), lethargy, dark brown urine.
**Must not exceed 50% of diet.*



Lamb's quarter (*Chenopodium album*)
Livestock impacted: Cattle, horses, sheep and goats
Impacts: Respiratory system
Symptoms: increased salivation, labored breathing, incoordination, weak pulse, muscle tremors, vomiting, diarrhea, suffocation and death.



Poison Hemlock (*Conium maculatum*)
Livestock impacted: Cattle, goats, horses, swine, sheep, rabbits and poultry
Impacts: Respiratory paralysis; skeletal deformities or cleft palate may be induced in offspring
Symptoms: Frothing at mouth, uneasiness, pain, clamping of jaws, grating teeth, vomiting, weak rapid pulse, diarrhea, bloating, convulsions, and respiratory failure. Death may occur within 15min of consumption.



Spurges, Leafy (*Euphorbia esula*)
Cypress (*Euphorbia cyparissias*)
Livestock impacted: Cattle, horses, goats and sheep*
Impacts: Dermatitis and digestive system
Symptoms: skin inflammation, diarrhea, vomiting, abdominal pain, muscle tremors, sweating, dermal and eye irritation, blistering, weakness, and tainted milk that has reddish color and bitter to taste.
** leafy spurge is not toxic to sheep*



Russian knapweed (*Acroptilon repens*)
Livestock impacted: Horses
Impacts: Neurological; results in “chewing disease”.
Symptoms: Anxious, confused, sustained contraction of muscles in muzzle, lips and tongue, constant chewing like motions of the mouth.



St. John's-wort (*Hypericum perforatum*)
Livestock impacted: Cattle, horses, rabbits, sheep, and swine
Impacts: Photosensitivity
Symptoms: Dry muzzle and skin, restlessness, loss of appetite, staggering gait, peeling skin and coma.
**The effects are most severe when animals ingest green plants; effects diminish slightly as plants dry for hay and only impact animals with white or light-colored skin.*



Tansy ragwort (*Senecio jacobaea*)
Livestock impacted: Cattle and horses
Impacts: Irreversible liver cirrhosis
Symptoms: Swollen abdominal area, agitation, anorexia, diarrhea, jaundice, and nervousness.



IF YOU WITNESS LIVESTOCK CONSUMING A TOXIC PLANT:

- Being careful to not be bitten, pull remaining plant material out of animal's mouth and wash your hands. Save plant material in bag.
- Contact veterinarian immediately and explain what happened and any recent changes to your pasture/hay field management regime.
- Send photo of plant to veterinarian for identification.
- Try to estimate how much was eaten, what part of the plant was eaten and whether the plant was fresh or dried.
- Do not try to induce vomiting (which horses cannot do) or give any medications – you may do more harm than good.

IF YOU SUSPECT POISONING BUT DO NOT HAVE EVIDENCE:

Call a veterinarian and see if the cause can be determined. Circumstances that plant poisoning may include:

- Recently fertilizing pasture with nitrogen, followed by cool weather and slow forage growth. environmental and/or cropping conditions that may lead to nitrate poisoning.
- Hunger resulting from sparse forage availability due to heavy grazing, drought or poor early season growth.
- Recently moving livestock to a new pasture or range.
- Feeding hay from a new source.
- Altering the type of forage being offered.