



## Animal Production FACTSHEET

# St. John's Wort Poisoning in Livestock

### Introduction

St. John's Wort (*Hypericum perforatum*), has gained considerable fame recently as a potent herbal remedy. The plant, which was long considered a common nuisance throughout Newfoundland, has become a valuable commodity. As well as its role as a human anti-depressant, St. John's Wort is also an important poison to our livestock.

### Description

St. John's Wort is a hairless perennial, reproducing by seeds and underground runners from the base of the stem. It grows 1 to 3 feet tall, with spreading branches and small deep green oblong to ovate leaves, perforated by many transparent dots that are visible when held to the light. Clusters of bright yellow flowers with 5 petals and tiny black dots are produced in mid to late summer. St. John's Wort turns a rusty red colour at maturity. The fruit is a three



*Flowers of St. John's Wort*

celled capsule containing small, dark brown seeds, which are capable of lying dormant up to 10 years.

The weed grows in open woods, dry meadows and fields, on grassy banks, in thickets and along roadsides throughout most of the province. It is tough and will tolerate average to poor, acid or alkaline soils, extreme heat and drought.

### Poisoning by St. John's Wort

When the leaves of St. John's Wort are held up to the light the translucent dots that can be seen are the glands that produce the photosensitizing chemical hypericin. Hypericin remains stable when heated or dried and so can be incorporated into pills and infusions.



*Dots on leaves help to identify plant and contain the toxin*

When the plant is eaten, hypericin is absorbed from the intestines and migrates to the skin. In areas where the skin is light coloured ultra violet light reaches the hypericin and alters its chemical makeup. The altered hypericin causes damage to the cell

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membranes of skin cells. This reaction, known as primary hypersensitivity eventually causes death of areas of white skin.

A second type of poisoning known as secondary hypersensitivity occurs when St. John's Wort chemicals interact with oxygen and damage red blood cells. This is also known as photosensitive hemolysis.

Secondary photosensitization is also used to describe any poisoning of the liver that results in decreased ability of the liver to metabolize any photosensitizing chemical. Animals that consume clover, algal blooms or lush spring growth may have enough liver damage that smaller amounts of St. John's Wort than normal may cause photosensitization.

Cattle, goats, sheep, pigs and horses have all been reported to have photosensitizing reactions to St. John's Wort. Cattle that eat 1% of their body weight of the plant show signs. Sheep are not poisoned until they have eaten 4% of their body weight.

Signs of photosensitization can begin within 2 days to 3 weeks of ingestion. Areas of the animals' skin that is dark coloured or covered with dense fur is generally unaffected. The affected skin first reddens and then has fluid accumulate underneath it. The fluid eventually seeps out from under the now dead skin and the skin peels off. Farmers often describe cattle as looking like battery acid has been thrown on them. Animals may die from starvation from secondary infection and gangrene or lesions around the face that make eating unbearably painful. Lesions on surviving animals heal into hairless scars within a few weeks. Cattle show lesions throughout the body and on the udder. Sheep are usually effected on the ears, lips, eyelids and above the hooves. Cattle with photosensitive hemolysis show signs of anemia and liver damage. Animals may occasionally go blind from corneal reactions or in rare cases even have convulsions.

Due to the amounts of St. John's Wort that must be consumed before toxicity, there must be considerable amounts of the plant on a pasture before problems are seen. When the plant is dried, 80% of the hypericin activity is lost. It is possible for animals to be poisoned by hay if enough St. John's Wort is present.

## **Treatment and Control**

St. John's Wort poisoning is best avoided by keeping animals away from areas with large quantities of the plant. The plant's tough nature makes eradication extremely difficult. Once animals show signs of photosensitization they should be moved into areas of shade and away from the source of the plant. Once skin begins to peel your veterinarian may recommend local and/or systemic antibiotics and may recommend some kind of pain relief.

## **Human Concerns**

St. John's Wort has become quite popular as an alternative treatment for many human problems, particularly for depression. While photosensitization is a possibility, people using recommended doses would not ingest the amount of hypericin that animals get before photosensitization. A more serious problem with human use of St. John's Wort is the possibility of interference with other medications such as antivirals, cardiac drugs and birth control pills. Concerns with this should be discussed with your physician.

## **More Information**

For more information on this or other poisonous plants please contact your regional Crop Specialist (plant identification and control) or Veterinarian (preventing, diagnosing and controlling illnesses in animals).

## **Written by:**

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