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Canadian Poisonous Plant Info System

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Museum of Nova Scotia

<http://museum.gov.ns.ca/poison/default.asp>

For more information, please contact your Regional Crop Specialist, your Regional Veterinarian, or the Animal Health Division.

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Tansy Ragwort Poisoning In Newfoundland

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Introduction

Tansy Ragwort, sometimes just referred to as Tansy, is a plant native to Europe and western Asia. It was first known to poison North American animals in the late nineteenth century when cattle in Nova Scotia and PEI began dying from "Pictou cattle disease." Since then, millions of dollars worth of cattle have been lost from eating this plant. In Newfoundland, the first identification of the plant was in the early 1960's, suspected poisoning occurred in the 1980's in the Codroy Valley. An outbreak of tansy poisoning that killed a half dozen cattle was diagnosed in early 2001.

Description

Tansy is a biennial or short-lived perennial in the Sunflower family. As a biennial, it spends the first year in the rosette stage (small cluster of leaves at ground level). The underside of the leaf is somewhat hairy and appears whitish. The overall rosette has a ruffled appearance, due to deeply indented and blunt toothed lobes of the leaves. Flower stalks develop the second year, growing up to 4 feet or more, with many branches near the top.

Flat-topped clusters of small (1 inch) yellow daisy-like flowers are produced at the top of the stem from midsummer to fall. The flowers usually have 10-15 petals, most often 13. One plant can produce in excess of 150,000 seeds. Seeds can lie dormant on the soil surface for 4 to 5 years, or over 20 years if buried. Seeds may germinate in spring or fall.

It is found in pastures, fields, on roadsides, abandoned land and in waste areas throughout much of Newfoundland.

Though there are many other yellow-flowered plants (such as Goldenrod, St. John's Wort and Toadflax), it is generally easy to pick out Tansy.

Poisoning by Tansy Ragwort

Tansy is poisonous because it contains chemicals known as pyrrolizidines in all parts of the plant. These chemicals by themselves are not harmful; but when they enter the liver, they are changed into toxic compounds known as pyrroles. Pyrroles cause irreversible damage in the liver by killing liver cells, eventually causing liver cirrhosis. Among the many important functions of the liver, it is responsible for filtering and neutralizing toxins that make their way into an animal's body. As the function of the liver is compromised by cirrhosis, more and more toxins are allowed to freely circulate through the body. It is these toxins that cause many of the signs of Tansy Ragwort poisoning.

Tansy Ragwort poisoning has been reported in cattle, horses, goats and sheep. Young animals are at especially high risk. The susceptibility of sheep is so low that some authors have suggested grazing sheep on pastures as a method of controlling the plant. There have been no reports of Tansy Ragwort poisoning in wild animals.

Affected horses show staggering and in-coordination, depression, difficulty breathing and skin peeling. As with any liver disease, there may be signs of jaundice or yellow discoloration, especially of mucous membranes (the gums of the mouth and around the eye). When close to death, horses may develop ascites, or an accumulation of fluid in the abdomen, coma and death.

Cattle show similar signs combined with a peculiar bleached colour to their hair and a rapid decrease in milk production. Poisoned animals may survive for six months with no signs and then after the stress of pregnancy, lactation or poor nutrition, develop ascites suddenly and die within two to four days. The milk from affected animals may be bitter and bad smelling. It is possible for calves to be poisoned by the toxins present in a poisoned dam's milk.

Animals tend to avoid eating the plant because of its unpleasant taste, but if it constitutes more than 5% of pasture growth or if other palatable plants are scarce, poisoning may be a problem. Because Tansy remains toxic and becomes more palatable when cut and dried, poisoning can also occur with hay. Tansy remains dangerous when ensiled, and the toxin may seep into other components of the silage.

The signs of Tansy Ragwort poisoning are from liver failure and not specific. Animals on pasture are often found dead, and the diagnosis can be made from a post mortem finding of liver cirrhosis combined with the presence of Tansy in the pasture. The slow progress of the disease often means that there may **not** be Tansy found in the stomachs of poisoned animals.

While poisoning of people by Tansy is not usually considered a threat, it is possible that humans could develop liver problems from ingesting milk from poisoned animals, or from using the plant as a medicinal herb.

Treatment and Control

Once signs of disease are seen, liver changes are advanced enough that treatment of an individual animal is useless. Efforts should rather be made to keep animals away from Tansy or to eradicate the plant.

A number of different strategies have been used to deal with Tansy infestation. If small numbers of the plant are present, pulling the plants may work. If plants are pulled when the soil is wet there is a greater chance of getting the roots. After pulling, the plants should be burned and special care given to preventing the release of seeds. Simple cutting of the plant is not helpful as new plants will grow back, and the cut Tansy is actually more likely to be eaten by livestock.

Plowing up pastures can be successful if repeated yearly. However, if Tansy is present on nearby land and left untreated, re-infestation may occur.

Phenoxy herbicides, such as 2-4-D and spot treatment with glyphosphate, have been used successfully in spot or general applications. A single application of herbicide without further pasture management will not work. It is important to remember that these pesticides may be toxic to other plants or animals.

Considerable success has been realized with the introduction of insects that feed on Tansy. In western USA, the Tansy Flea Beetle, Cinnabar Moth and Ragwort Seed Fly have been used. The Cinnabar Moth was successfully introduced onto the island's west coast in the mid 1980's.