



## INVASIVE ALIEN SPECIES

# Canada Thistle (*Cirsium arvense*)

**Provincial Designation:** Noxious

### Overview:

A colony-forming, aggressive perennial, that spreads primarily by its creeping root system. Despite its name, the plant was introduced from Europe, and is the only thistle, native or introduced, with separate male & female plants. Also called "Creeping Thistle," the roots spread both horizontally (up to 4.5 metres) and vertically (up to 6 metres) underground. It has been estimated that individual plants live about 2 years, but are continually replaced by new shoots from adventitious buds on its extensive root system. This can result in infestations composed entirely of genetically identical plants of one sex.

Dense riparian infestations can impact wildlife by reducing food, and access & nesting cover for waterfowl.

### Habitat:

Canada thistle thrives in a wide range of soil types but is not tolerant of waterlogged soil or complete shade. It does best in disturbed areas and overgrazed pasture/range. The extensive root system allows the plant to survive periods of drought and access water & nutrient reserves far below the roots of native plants.

Young rosette



### Identification:

**Stems:** Stems are grooved, upright, hollow and woody, branching near the top, and grow .5 m to 1.5 m tall.

**Leaves:** Leaves are lance-shaped, dark green, shiny on the surface and occur alternately, slightly clasping the stem. Lower leaves are largest and decrease in size upward along the stems. Leaf edges can vary from smooth with no spines to irregularly lobed with sharp spines.

**Flowers:** Flowers form at the ends of stems in clusters of one to several. The flower head is urn-shaped and the bracts are spineless. The color of the flowers may vary from plant to plant, being purple, pink or white.

**Seed:** Seeds are borne in an achene 2 to 4 mm long which is tufted to aid in wind dispersal. Most seeds germinate within a year, but buried seed can stay dormant for up to 20 years.

### Prevention:

The best preventive measure in non-cropland is to maintain healthy plant cover and to re-seed disturbed areas with a desirable species as soon as possible. Canada thistle seedlings are very shade intolerant and will not establish under low light conditions. Avoid overgrazing to prevent thistle establishment in pastures/rangeland.

### Control:

Most of the biomass of Canada thistle plants is below ground; therefore killing the roots is the only effective control method. An integrated management plan that uses a variety control options is the only real chance of reducing infestations.

**Grazing:** Sheep and goats will readily graze thistle, but not so much in the spiny stage. Occasionally livestock will randomly graze thistle, even when other forage is available, however



Seedling



Flowers

removal of the stems by grazing only stimulates re-sprouting by the plant. *Invasive plants should never be considered as forage.*

**Cultivation:** Cultivation only produces small root pieces that rapidly develop into new plants, and does not reach the deeper roots.

**Mechanical:** Repeated mowing through the growing season gradually depletes the food energy stored in the root system. Repeated hand pulling in loose soils can also effectively stress the root system. To succeed, several years of effort must be committed.

**Chemical:**<sup>1</sup> A variety of herbicides are available for controlling Canada thistle, with residual herbicides having the most effect. However, early-season herbicide applications generally have the same effect as mowing, by killing the shoots and stimulating re-sprouting. A combination of spring-summer mowing, followed by herbicide application in the fall is extremely effective. By fall the plant is preparing for dormancy by moving food reserves from the shoots down into the roots for the next growing season. Herbicide application at this time maximizes chemical translocation into the root system and results in a better kill. Consult your local Agricultural Fieldman or Certified Pesticide Dispenser for more information.

**Biological:** Several weevils and one fly have been imported to target Canada and other thistle species, but a few are no longer recommended due to impacts on native thistle species.

<sup>1</sup> Always follow the product labels. The use of pesticides in any manner not published on the label or registered under the *Minor Use of Pesticides* regulation constitutes an offence under both the *Federal Pest Control Products Act* and *Alberta's Environmental Protection and Enhancement Act*.