

# CANADA THISTLE

What does it look like?

Canada thistle (*Cirsium arvense* L.) is a creeping perennial with flowers that can be pink, purple or white. Some plants have female flowers that produce seed, and others have male flowers that do not. Both plant types need to be present in order for pollination to occur. Leaves are alternate and vary in size and shape depending on the plant. Most often they have spiny, toothed margins and stems can be over a metre in height. Canada thistle is found in cultivated fields, pastures, roadsides, lawns, waste areas and along fencelines.



Its weedy nature

Canada thistle is a non-native plant of European origin. Its deep, creeping rhizomes are what makes this plant so successful. Every metre of rhizome has approximately 8 buds, and a year old plant can have as many as 200 buds! Because one plant alone can produce 6 metres of rhizome per year, it is easy to see how quickly this plant can invade! It is also a prolific seed producer, and a female plant can produce up to 40, 000 seeds. These can remain viable in the soil for up to 20 years.

Control measures

Canada thistle causes greater crop losses than any other perennial broadleaf weed throughout Canada. Its deep creeping roots allow it to survive below the normal cultivation zone. Control should primarily be aimed at destroying these roots to prevent further vegetative reproduction.

Pasture, lawn or other non-crop control

In pasture or other non-crop areas, the best method of control is first spraying the thistle with 2, 4-D in the third or fourth week of July, at the bud to flower stage. Follow up by mowing in September. For best results this procedure has to be repeated the following year.



For non-chemical control in pasture, lawn or other non-cultivated areas, regular mowing every 2-3 weeks will prevent flowering and seed production. Root reserves will be depleted by the constant regeneration of top growth. This should cause root starvation and death of the plants. For smaller or hard-to-reach areas, digging out or hand pulling is suggested.

Above all, in pasture, maintain fertility levels and do not overgraze. Particularly in dry years, livestock will graze the pasture selectively avoiding the less palatable species, including thistle. This will lower the level of desired plants and encourage future weed infestation, especially by thistle. Try strip grazing, rotating pastures, supplemental feeding or reduced stocking rates to avoid this problem.

Control in forage stands In forage, cutting hay twice or more each year can reduce thistle stands. The first cutting should occur prior to the 3rd week of July. Healthy, well-established forage stands, especially alfalfa, compete very well with thistle. Oats or sweet clover cut early for greenfeed or silage, followed by intensive tillage is another effective option.

## Crop control

In crops, thistle prevention is vital. This includes having a well-prepared seedbed, as weed free as possible, planting a healthy competitive crop and using clean seed. In a standing crop, there are many registered herbicides available for thistle control. Pre-harvest and post-harvest chemical control are also options. With post harvest, spray after harvesting, wait two to three weeks, then cultivate to further eliminate any remaining thistles. The most competitive crops are winter wheat and alfalfa and for a spring-seeded annual choose barley. Avoid lentils and peas since the choice of herbicide is very limited in these crops.



## Summer fallow control

For Canada thistle control in summer fallow: cultivate regularly until late July, wait three weeks for a rosette to form, spray with a herbicide that translocates readily to the roots, then cultivate again three to four weeks after spraying.

## Herbicide use

In any chemical program be aware that the commonly used (and often cheaper) phenoxy herbicides (2,4-D, MCPA) are excellent at top growth kill, but only prevent regrowth for a month or more. This seldom translates into long term, significant reduction in thistle density the following season. It is most desirable, if possible, to use a herbicide that acts by moving down into the roots to maximize control.

Always follow any grazing or cropping restrictions and instructions on the label. Be aware that because of the mode of action of many herbicides they are most effective when the plant is actively growing. They will not work as well or sometimes not at all if the plant is stressed due to excessive heat, cold or extreme drought. Do not spray when a killing frost (-5°C or lower) is expected within the next two weeks.

## A note on fertilizer use

N-P-K Recent research has indicated that the application of fertilizer increases the effect of herbicide on Canada thistle control. Using fertilizers in forage and pasture, along with chemical control is therefore recommended.

Canada thistle is not likely to be eradicated in one year, and ongoing weed control will be required. The publication Crop Protection for the current year, by Alberta Agriculture, Food and Rural Development contains extensive herbicide information for weed control.