



# Nodding Thistle aka Musk Thistle

(*Carduus nutans*)

**Provincial Designation:** Restricted

## Overview:

Biennial or winter annual that reproduces by seed only. A native of Europe, nodding thistle has a long history as a rangeland pest. The invasive nature of this aggressive plant can lead to severe degradation of native grasslands and meadows because grazing animals focus on native vegetation giving the thistles a competitive advantage.

It develops a long, fleshy taproot that becomes corky & hollow near the crown. Rosettes can be quite large. Several subspecies of Nodding thistle occur in North America (e.g. Plumeless thistle), but there are no native thistles in the genus *Carduus*.

## Habitat:

Nodding thistle grows from sea level to about 8,000 ft elevation, in neutral to acidic soils. It prefers disturbed areas but is still able to invade healthy plant communities. Nodding thistle can form tall, impenetrable thickets. It is not tolerant of excessively wet, dry or shady conditions.



## Identification:

**Stems:** First year forms a large rosette; second year grows between 20cm up to 2.5 m tall. Lower stems have spiny, lengthwise ridges. One or many stems can grow from one root crown.

**Leaves:** Leaves are alternate, deep green with a light green mid vein, waxy surface or sometimes long hairy, and deeply lobed with wavy, spiny edges up to 25 cm long. Leaf margins are often white. Leaves tend to clasp the stem.

**Flowers:** Flower heads are solitary at the ends of stems, about 3-5 cm in diameter and are composed of hundreds of tiny reddish-purple flowers. At the base of each head are several rows of spiny bracts. Flower heads commonly droop when mature, hence "Nodding thistle." A single flower head may produce 1,200 seeds. The plant dies after seed set.

**Seed:** Achenes 4-5 mm long, with longitudinal dotted stripes. Pappus bristles 13-25 mm long.

## Prevention:

Learn how to recognize this invasive plant in the early stages and the likelihood of eradicating it from your property is very good.

## Control:

Preventing seed production is the key to controlling this invasive plant.

**Grazing:** Not grazed by cattle, however, young plants may be grazed sheep and goats. Because it is unpalatable, unmanaged grazing will result in larger infestations. *Invasive plants should never be considered as forage.*

**Cultivation:** Since the plant is biennial and reproduces only from seed, frequent cultivation is effective.



**Mechanical:** Hand-digging or mowing can provide control if repeated over a number of years. Mowing just before seed set is effective, but the debris should be collected and burned. Severing the taproot just below ground will kill plants.

**Chemical:**<sup>1</sup> Several herbicides are registered for use on Nodding thistle, and can be very effective when applied before plants bolt. Consult your local Agricultural Fieldman or Certified Pesticide Dispenser for more information.

**Biological:** Two weevils, a root miner and a seed-feeder have been introduced from Europe as a biological control for nodding thistle. However, one insect has moved off its target plant and has been attacking some native thistles. Therefore, biocontrol of Nodding thistle is not recommended at this time

<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*.