



Plumeless Thistle

Carduus acanthoides (Aka spiny plumeless thistle, bristly thistle)

Provincial Designation:
Prohibited Noxious



Todd Pfeiffer, Klamath County Weed Control, Bugwood.org



Gary L. Piper, Washington State University, Bug-

Overview:

Plumeless thistle is a winter annual or biennial thistle native to southern Europe and western Asia. The earliest collection in North America was in New Jersey, 1879. It primarily behaves as a biennial, with seeds germinating early spring, producing a tap root and rosette of leaves which lies dormant over winter, and then a flowering stalk the following year. It flowers from June to August.¹

Plumeless thistle reproduces by seed only and about 50-80 seeds are produced per flower head. Most seeds germinate the following year; however seed viability can remain high for over 10 years in the soil. The flowers can be insect or self-pollinated. There are reports that Plumeless thistle can hybridize with musk/nodding thistle (*C. nutans*).¹

Plumeless thistle can easily be confused with the related musk/nodding thistle (*C. nutans*); nodding thistle flowers heads 'bend' over and leaves are lobed almost to the midrib.⁴

Habitat:

Plumeless thistle grows in sandy-loam soils with early season precipitation, typical of rangelands.

Identification:

Stems: Are solitary, long-branched and grow 20-100 cm tall. Stems can be more or less stiffly-hairy and are covered with winged ridges bearing 3-5 mm spines.²

Leaves: Are sessile, elliptic to lance-shaped, 6-29 x 2-7 cm, pinnately lobed, and with 6-12 pairs of triangular segments. Leaf margins are toothed and bear lateral and terminal 3-5 mm spines. Middle and upper stem leaves are similar but smaller, with uppermost leaves broadly linear and sometimes un-divided. Leaves are light to bluish-green and sparsely cobwebby hairy, with stiffer hairs along the vein.²

Flowers: Are mostly solitary or clustered at stem and branch ends. Flowers are purplish-red or rarely white. The involucre (flower base) is 1.5-2.5 cm in diameter, hairless or sparsely cobwebby, and covered with bracts

tipped with 1-2 mm spines. Seeds are brown; about 4 mm long with a white bristle pappus about 1.5 cm long. The pappus is sometimes deciduous.²

Prevention:

Seeds can be wind dispersed, spread in hay, or in soil and soil attached to foot traffic. Maintain pastures susceptible to thistle invasion in healthy condition. Learn to recognize plumeless thistle and control new infestations quickly.

Control:

Grazing: Plumeless thistle plants can accumulate poisonous levels of nitrates when drought stressed, however livestock generally will not eat it because of the spiny stems.¹ Invasive plants should never be considered as forage.

Mechanical: Flower heads can be removed to eliminate seed production.⁴ Repeated cultivation, digging or cutting can be effective. Mowing is most effective at late bloom – re-growth and viable seed produc-

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tion occurs from plants mowed before the first terminal buds bloom.¹ Small infestations can be hand pulled or dug prior to seed set. All control methods will need to be repeated annually to deplete the seed bank.

Chemical: Aminopyralid alone or with 2,4-D or Met-sulfuron-methyl as products are registered for use on plumeless thistle. Always check product labels to ensure the herbicide is registered for use on the target plant in Canada by the Pest Management Regulatory Agency. Always read and follow label directions. Consult your local Agricultural Fieldman or Certified Pesticide Dispenser for more information.

Biological: Two weevils (*Larinus planus* and *Rhinicyllus conicus*) have been introduced and released in B.C. Three other agents are in the developing stage.³



Flowers

Gary L. Piper, Washington State University, Bugwood.org



Foliage

Steve Dewey, Utah State University, Bugwood.org



Flowers

Richard Old, XID Services, Inc., Bugwood.org



Plant

Richard Old, XID Services, Inc., Bugwood.org



Foliage

Todd Pfeiffer, Klamath County Weed Control, Bugwood.org

REFERENCES

- 1 Higenfeld, K., Martin, A. 2002? Plumeless Thistle. Noxious Weeds of Nebraska. University of Nebraska Cooperative Extension EC02-172-S. snr.unl.edu/invasives/documents/IANR%20Publications/IANR%20Plumeless%20Thistle.pdf
- 2 *Carduus acanthoides* in Flora of China. www.efloras.org
- 3 Plumeless Thistle. Invasive Plants with Biocontrol. B.C. Ministry of Forests, Lands and Natural Resource Operations. www.for.gov.bc.ca/hra/Plants/biocontrol/bcmatrix.htm
- 4 Plumeless Thistle. A Guide to Weeds in British Columbia. www.weedsbc.ca