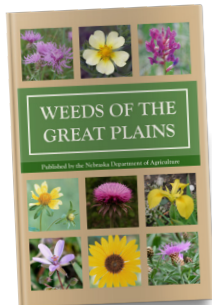


## NOXIOUS WEEDS ARE EVERYONE'S CONCERN

Noxious weeds compete with pastures and crops, reducing yields substantially. Some noxious weeds are directly poisonous or injurious to man, livestock and wildlife. The losses resulting from noxious weed infestations can be staggering, costing residents of Nebraska millions of dollars due to production losses. This not only directly affects the landowner, but erodes the tax base for all residents in the State of Nebraska.

The business of noxious weed control is everyone's concern, and noxious weed control benefits everyone. The support of all individuals within the state is needed and vital for the control of noxious weeds within Nebraska. It is the duty of each person who owns land to effectively control noxious weeds on their land.

If you have questions or concerns about noxious weeds, please contact your local county noxious weed control authority or the Nebraska Department of Agriculture.



Material derived from *Weeds of the Great Plains*, published by the Nebraska Department of Agriculture.

For more information, visit [nda.nebraska.gov](http://nda.nebraska.gov).

# PLUMELESS THISTLE



## NEBRASKA NOXIOUS WEED

PREPARED BY THE  
NEBRASKA DEPARTMENT OF AGRICULTURE  
AND THE  
NEBRASKA WEED CONTROL ASSOCIATION

## PLUMELESS THISTLE FACTS

**Common Name:** Plumeless thistle (spiny plumeless thistle, smallhead plumeless thistle)

**Growth Form:** Forb

**Life Span:** Biennial (or winter annual)

**Origin:** Eurasia

**Flowering Dates:** June–September

**Reproduction:** Seeds

**Height:** 0.3–1.5 m (1–4.9 ft, usually 3–4 ft)

**Inflorescences:** Heads solitary (1–3 cm in diameter) or in clusters of 2–5, terminating branches; involucre with several series of bracts; outer bracts (7–12 mm long) spiny, inner bracts (to 2 cm) spineless; peduncles spiny winged (3–15 mm wide) up to the bases of the heads (a distinctive characteristic separating it from the similar musk thistle)

**Flowers:** Purple, rarely white or yellow, disk florets (1.4–2 cm long)

**Fruits:** Achenes, slightly obovate to oblong (2–3 mm long), somewhat quadrate, straw colored to light brown, ribs 10; pappus of 3–16 bristles; bristles minutely barbellate, forming a ring; seeds 1

**Seeds:** Small

**Leaves:** Alternate; blades simple; stem blades decurrent, elliptic to lanceolate or oblong (10–20 cm long), irregularly and deeply pinnatifid (to near the midvein) with spinulose lobes, marginal spines 1–6 mm long, surfaces pubescent, often tomentose beneath, sessile; rosette leaves less deeply pinnatifid and less hairy on upper surface

**Stems:** Erect, freely branching above, with spiny wings (3–15 mm wide) to the heads or nearly so, surfaces densely hairy to nearly hairless

**Underground:** Taproot, stout, fleshy

**Where Found:** Primarily in the east central Great Plains, and scattered farther west. It grows in pastures, prairies, and other noncropped areas. (NE, SD, ND, KS, OK, TX, MN, IA, MO, MT, WY, CO & NM)

**Uses and Values:** Plumeless thistle is unpalatable to livestock. It is an important butterfly plant, and its seeds are eaten by songbirds.

**Poisoning:** Plumeless thistle may accumulate nitrate

**Other:** It is a noxious weed in many states. It resembles Scotch thistle (*Onopordum acanthium* L.) and musk thistle (*Cardus nutans* L.). Scotch thistle is densely tomentose throughout giving a bluish- or grayish-green appearance. Musk thistle leaves are not as deeply serrate and lack hairs.

# IMPACT OF PLUMELESS THISTLE

Plumeless thistle currently infests 45,000 acres in Nebraska. While pastures and rangeland tend to carry the largest infestation levels, other areas can equally provide a favorable habitat for this invasive plant species.

Plumeless thistle was first identified in Nebraska in 1930, when a botanical survey found this plant in Lancaster County. Landowners and producers spend thousands of dollars each year to control plumeless thistle. This plant competes for water and nutrients while depleting grass and forage which is utilized by livestock, wildlife, and recreationists. We can all do our part by controlling plumeless thistle infestations, or by reporting uncontrolled infestations to your local county noxious weed control authority.



Leaves of the plumeless thistle rosette (left) differ from those of the musk thistle rosette (right) by having deep serrations to nearly the midrib.

# CONTROLLING PLUMELESS THISTLE

## Mechanical and Cultural Control

Infested areas which have been allowed to reach the bud, or bloom stage, can be mowed temporarily to prevent seed development. However, some plants within the infested area will be less mature, and will require additional control measures.

Plumeless thistle does not usually become a problem in spring-planted crops. However, some problems have been encountered in no-till situations.

Fall-sown crops can become infested with plumeless thistle, which may set seed prior to harvest. Properly managed grassland which is well fertilized and not overgrazed is the most cost efficient and profitable control method available today. However, these well-managed grasslands are not exempt from infestations and require continuous monitoring to ensure that noxious weeds are not allowed to grow.

## Biological Control

Natural enemies (biological agents) for the control of plumeless thistle are being used in Nebraska. Some of the agents which have attacked musk thistle also attack plumeless thistle, but these agents work slowly, and results may not be seen for many years. These agents are considered a tool to assist in the control of plumeless thistle and should never be relied on to completely control any noxious weed. The use of biocontrol agents shall be as effective as the use of herbicides and shall be approved by your local county noxious weed control authority.

## Plumeless Thistle Control Summary

A combination of two or more control methods is the best approach to take when controlling plumeless thistle. By utilizing several control options, your odds become better that more plumeless thistle will be controlled. Plumeless thistle is capable of producing thousands of seeds which may lay dormant for several years. Continued monitoring and follow-up control measures are essential for maintaining plumeless thistle infestations at a low level.

## Herbicide Control

The use of herbicides can be an effective tool to assist in controlling noxious weeds. A person needs to identify the problem and the appropriate herbicide for the plant as well as the site that the plant is growing. If the noxious weed infestation is severe and scattered across a large area, then a broadcast application may be warranted.

However, if the noxious weeds are in patches or a few scattered plants here and there, a person may be able to spot treat individual plants or patches. This approach requires less herbicide and has minimal impact on native plants and the environment. Controlling noxious weeds with herbicides in only one tool and should never be the only control option.

Additional information regarding herbicide use can be found through the Nebraska Cooperative Extension EC130 (*Guide for Weed, Disease, and Insect Management in Nebraska*) or your local county weed control authority at [neweed.org](http://neweed.org).

