



Musk Thistle

Carduus nutans



Musk thistle	
General	Family: Sunflower (Asteraceae) Introduced from Europe and Asia Colorado List B - Control required
Common names	Nodding thistle
Habitat	Herbaceous biennial Found in pastures, rangeland, forests, disturbed areas, rights-of-way, ditch banks, and grain fields Grows in all soil textures, but the soils must be well drained
PLANT	
Vegetation	Plants 6+ feet tall Leaves hairless, dark green with light green mid-rib, deeply lobed, 1-1½ inches wide and 4-5 inches long with yellow to white spines near tip. Leaves extend onto the stem and give it a winged appearance Multi-branched stems from the base. Newly emerged plants over-winter in the rosette stage, bolt, then flower in the spring or early summer of the following season.
Roots	Taproot
Flower	June-October Purple, single at ends of stems. Distinctive bracts below. Mature flowers are 1½ -3 inches wide and droop from stem
Seed	Each head produces up to 1,500 seed within 45-55 days after bolting. (120,000 seeds per plant) Seed is dispersed 7-10 days after flowering. Most seed drop within 10 feet of the mother plant. Can germinate 6-8 weeks after falling to the ground. Most seed are sterile. Most windborne "fluff" is seedless. Seed may remain dormant in soil for over 10 years
Seedling	Rosettes emerge in spring and fall. Grow up to 3-4 feet wide. Rosette leaves lobed with white mid-rib. Overwinters as a rosette. Bolts and flowers the next spring or early summer. Once it flowers, the plant dies.
Reproduction	Seed

CONTROL – CHEMICAL		
Timing	Herbicide	Notes
Spring or Fall Rosette	2,4-D (various) Aminocyclopyrachlor + chlorsulfuron (Perspective) Aminopyralid (Milestone) Chlorsulfuron (Telar) Clopymidifen (various) Dicamba (various) Glyphosate (various) Imazapic (Plateau) Metsulfuron (Escort XP) Picloram (Tordon) Restricted Use Triclopyr (Garlon 3A, Garlon 4)	Use of a surfactant is recommended for most herbicides to help increase contact with the vegetation and to facilitate herbicide uptake. Refer to the specific label for the appropriate type of surfactant. Treating at the rosette and early bolt stage stops biennial weeds from using resources that desirable plants need to prosper. Refer to the individual label for allowed sites, specific timing, and restrictions about grazing and haying. Formulations of more than one active ingredient are available. For established populations, control will take a few years so treatment will need to be repeated. Use all chemicals according to the manufacturer's label. The label will provide specific instructions including allowed sites, application methods, rates, storage, re-entry requirements and personal protective equipment. No specific recommendation or endorsement is made or implied by listing the above methods or products.
Spring to Early Summer Rosette to Early flowering	2,4-D (various) Aminopyralid (Milestone) Aminocyclopyrachlor + chlorsulfuron (Perspective) Chlorsulfuron (Telar) Clopymidifen (various) Dicamba (Banvel) Glyphosate (various) Imazapic (Plateau) Metsulfuron (Escort XP) Picloram (Tordon) Restricted Use	
CONTROL -- NON-CHEMICAL		
Technique	Timing	Method
Biological		<i>Trichosirocalus horridus</i> - Musk Thistle Rosette Weevil or Crown Weevil <i>Rhinocyllus conicus</i> - a seed-head weevil that has naturalized and now also infests native thistles. Redistribution not recommended
Burning	Not recommended	Not effective in controlling musk thistle but may improve grass growth, which may act as competition. Burning may not be allowed so check with your local fire protection district for current restrictions.
Cultivation	Spring to Fall Rosettes and young plants without flower heads	May need to be repeated throughout the season and on an annual basis until the seedbank is exhausted. May allow more seeds to germinate due to disturbance.
Grazing	Not recommended	Grazing as a control method is ineffective because livestock only eat a few flowers. Heavy grazing and disturbances near water, salt, and loafing areas will increase seedlings due to disturbance.
Mowing	Spring to Early Summer	Between the first appearance of pink on the earliest buds and brown on the pappus. Plants may resprout. Repeat as needed throughout the season.
Prevention	Anytime	Maintain the health of the site by encouraging healthy stands of grass.
Removal	Spring to Early Summer Rosette to Bolting	Remove rosettes and young plants before they are more than 12 inches tall (before flower buds form). Remove at least the top couple inches of the taproot. Repeat as new rosettes germinate.
	Summer - Flowering	Remove flower heads, bag, and dispose of in the trash or landfill. Sever root at least a couple inches below the soil. Plants without flower buds do not need to be put in the trash.
	Fall - Rosette	Remove rosettes and at least the top couple inches of the taproot.
	Pulling when plants are small results in less bulk and makes disposal easier. Pulling will disturb the soil so it may contribute to more of the seedbank to germinate.	