KANSAS DEPARTMENT OF AGRICULTURE

OFFICIAL CONTROL METHODS FOR MUSK THISTLE

Carduus nutans L.

Revised May 20, 2020

DESCRIPTION

Musk thistle is primarily a biennial, winter annual or short-lived perennial forb that was introduced from Eurasia. The leaves are deeply lobed, hairless, and dark green with a light green mid-rib. A silver-gray leaf margin is characteristic of each spine tipped lobe, giving the leaf a frosted appearance. The stems grow from a rosette of leaves that grow flat to the ground and are present year-round. The leaf base extends down the stem as wing-like flaps. Musk thistle is the first of the thistles to bloom in the spring. Each head is 2 to 3 inches in diameter, terminal, solitary, usually nodding or bent over slightly at the ends of branches, and consisting of many, tiny, purple (rarely white) flowers. The seed-like fruits are straw-colored, oblong, and 1/8-inch-long topped by numerous ½-1-inch, white, capillary bristles that aid in dispersal of the seeds and detach as a unit. Fruit dispersal begins 7-10 days after blooming. Flowering May-September (occasionally until frost); fruiting May-frost.

PREVENTION OF SPREAD

The Noxious Weed Law (K.S.A. 2-1313a et. seq.) requires all people to control the spread of and to eradicate musk thistle on all lands owned or supervised by them. Methods used for control must prevent both the production of viable seed and destroy the plant's ability to reproduce by vegetative means. Infestation sites must be monitored after control methods have been accomplished to ensure that dormant seeds in the seedbank do not germinate and establish new infestations.

MUSK THISTLE CONTROL PRACTICES

Because musk thistle is a biennial or short-lived perennial, you may be able to use mechanical controls alone as a control option because only the flower needs to be destroyed for control. Contact your county noxious weed director for more information.

Cultural Control

Cultural weed control involves land and vegetation management techniques used to prevent the establishment or control the spread of noxious weeds.

The use of sheep, goats and cattle to graze musk thistle may be used during the rosette to bolting stage then repeated as necessary to prevent the production of flowers. Repeat grazing each year to deplete the seedbank and provide control.

Frequent surveys of fence lines, roadway, ditches and other susceptible areas for new infestations and the quick removal of any new plants will prevent musk thistle from becoming established.

Mechanical Control

Mechanical weed control involves the physical removal of all parts or just the reproductive parts of weeds.

Any mechanical controls that prevent the plant from producing flowers, including mowing and burning, may be used to control musk thistle as long as that control takes place before any flowers are produced. Care must be taken to ensure that a new stem does not sprout from the root crown. Removal of the root crown is preferable, therefore mechanical controls such as digging, hoeing, disking or tilling are more effective and preferred.

Mechanical controls can be used throughout the year when they target the rosette.

Chemical Control

The following herbicides may be used for cost-share with landowners. Other products labeled and registered for use on this noxious weed in Kansas may also be used in accordance with label directions but are not available for cost-share. Be sure to follow all label directions and precautions. For additional information consult the most recent edition of the KSU publication of "Chemical Weed Control for Field Crops, Pastures, Rangeland, and Noncropland".
Any two or more of the herbicides listed below may be available for cost-share as a pre-mix or a tank mix if allowed on the respective labels. Contact your county weed program for availability.

Herbicide	Mode of Action
2,4-D	4
aminopyralid	4
chlorsulfuron	2
clopyralid	4
dicamba	4
diflufenzopyr	19
imazapic	2
metsulfuron methyl	2
picloram	4
triasulfuron	2

Biological Control

Biological control refers to the deliberate application of a living organism to control the spread of weeds. These agents will not eradicate their host plant, therefore other control methods must be used in addition to the use of biological control agents as part of an integrated pest management strategy. The importation of biological control agents is regulated by USDA-APHIS and is allowed by permit only. The following agent is permitted for use on musk thistle in Kansas. Other agents may be available for use if the appropriate permit is obtained.

Cheilosia corydon	flower fly

The below species are available for use within the state of Kansas though neither of these insects may be transported across state lines either into or out of Kansas. Consult with your County Noxious Weed Director for more information.

Rhinocyllus conicus	head weevil
Trichosirocalus horridus	crown weevil