

# CANADA THISTLE MANAGEMENT TIPS FOR PASTURE AND RANGELAND

(RECOMMENDATIONS DO NOT APPLY TO TURF GRASS)

Noxious weeds are a serious environmental and economic threat in Gallatin County and Montana. Noxious weeds are non-native plants that compete with desirable plants for nutrients and room to grow. Most noxious weeds found in Montana, including Canada thistle, are native to Eurasia. Environmental, natural and cultural controls such as plant competition, insects, diseases and grazing have kept these plants from becoming problems in their native habitat. Since these competitive factors did not migrate with the plant, noxious weeds in Montana grow virtually unhindered.

Noxious weeds choke out native plant species, decreasing the productivity and value of the land. Noxious weeds do not limit themselves to agricultural areas; they can invade all lands in Montana. Noxious weeds have the potential to reduce bio-diversity, increase soil erosion, reduce wildlife habitat and numbers, decrease land/property values, as well as diminish water quality.

Canada thistle is an aggressive perennial weed that reproduces from vegetative buds in the root system and from seed. Root systems can extend 15 feet deep or more. New plants can develop from root pieces as small as .025 inch long by .0125 inch in diameter. Individual plants can produce up to 1500 seeds per flowering shoot. Seeds can remain viable in the soil up to 20 years. These facts dictate that management efforts must be directed towards long-term planning.

The key for effective long-term control is to implement a management plan that consistently prevents the formation and dispersal of seed and to stress the plant and force it to use stored root nutrients.

**A one-time treatment for Canada thistle will not be effective. Management and control effects must be planned for several consecutive growing seasons in order to prevent new seed formation/dispersal and at the same time deplete the nutrient reserves that have built up in the root system.**

Control measures that have been found to be effective for the management of Canada thistle on small acreage properties are:

## ⇒ Mowing

The most effective mowing technique is to mow the infestation at 25 to 30 days intervals, 4 to 5 times per season, throughout the entire growing season over several (4-5) years. The purpose of the intensive mowing is to stimulate Canada thistle shoot growth thereby depleting the plants root reserve. Mowing alone will not eradicate an infestation but can reduce infestation density by 50%.

Due to Canada thistles extensive root reserves a one-time mowing of the plants during the growing season is not an effective control technique. Similarly, a one-time hand pulling of Canada thistle during the growing season is also not an effective control technique. A one-time mowing or hand pulling will stimulate plant growth and increase infestation size and density.

## ⇒ Herbicide Treatment

There are several herbicides available locally that are very effective for controlling Canada thistle within pasture and rangeland grasses. Curtail, Redeem, Milestone, Forefront and WeedMaster are selective, general use herbicides, available over-the-counter, with a short soil residual that controls many broadleaf plants including Canada thistle. Applied at labeled rates they will not damage grasses. Do not apply to trees, shrubs, flowers, or garden areas. The herbicides are concentrates that are mixed with water and then sprayed onto the target plant. Herbicide uptake is through the plant foliage. Read and follow all label directions. Wear the proper protective gear (rubber gloves, long pants, long sleeve shirt, rubber boots, and eye wear) when spraying. When mixing, fill the tank halfway with water, add the herbicide, and then fill the remainder of the tank with water. When filling the spray tank with water do not submerge the end of the hose in the water. During storage prevent the herbicide from freezing.

Timing of application is dependent upon the stage of plant growth. The best time to treat Canada thistle is after the plant is fully emerged (meaning lots of foliage available for herbicide uptake) is actively growing and prior to bud stage. In Gallatin County, this time frame is normally from the middle of June through the middle of July. Local herbicide suppliers include AgDepot (Bozeman), Murdoch's (Bozeman) as well as UAP (Belgrade) and Rocky Mountain Supply (Belgrade).

Application and mixing rates in small backpack or hand sprayers are as follows:

Curtail:	2 oz herbicide to 1 gallon of water.
Forefront:	1 oz herbicide to 1 gallon of water
Milestone:	½ oz herbicide to 4 gallons of water
Redeem:	1.5 oz herbicide to 1 gallon of water (surfactant required, such as Activator 90)
WeedMaster:	1 oz herbicide to 1 gallon of water

Broadcast application rates in large sprayers are as follows:

Curtail:	4 pints (2 quarts) per acre
Forefront:	2 pints (1 quart) per acre
Milestone:	6 oz per acre
Redeem:	3 – 4 pints (1.5 – 2 quarts) per acre (surfactant required, such as Activator 90)
WeedMaster:	4 pints (2 quarts) per acre

**For the most effective control:**

Apply herbicides in the spring of the year, after the plants have fully emerged, but still actively growing, and prior to bud stage. The herbicides listed above are taken into the plant through the leaf foliage. Therefore, the plant foliage needs to be fully leafed-out in order for the plant to take in enough herbicide for effective control. Also, the target plants need to be actively growing in order for the herbicide to be translocated throughout the entire plant system and into the root system. Do not over apply the herbicide. Too much herbicide will only produce top growth suppression and will not be translocated into the root system.

**Important:**

Add a quality commercial surfactant, such as Activator 90, R-11, Syl-Tac or Preference, to increase the effectiveness and performance of the herbicide. Mixing rate in small backpack or hand sprayers is 1oz of surfactant to each gallon of water; the Broadcast application rate in large sprayers is 1 quart per 100 gallons of water.

If the Canada thistle plants have already flowered then herbicide control is not as effective as if completed earlier. If already flowered, the preferred method of control is to remove the thistle plant stems and flowers if possible and then in the fall, follow up with an herbicide application.

Depending upon weather factors, Canada thistle, has a fall regrowth period. In southwestern Montana we normally experience rain showers in September. The combination of fall rains and warm weather stimulates Canada thistle to experience a fall regrowth. During the fall regrowth the plant is creating and storing nutrients in the root system in anticipation for the upcoming year. A fall herbicide application will be translocated into the root system to control the plant. However, the regrowth period will not occur during a dry fall with little or no rains.

Remember; use the proper herbicide for the targeted noxious weed(s). For example, non-selective herbicides (such as Roundup and similar glyphosate products) are marginally effective at controlling Canada thistle but are very effective at killing grasses.

⇒ **Cultural Control**

Another key to successful long-term management is to encourage the growth of grasses as competitive factors to help keep Canada thistle in check. The healthier the condition of your pasture or rangeland the more difficult it is for invasion by Canada thistle to occur. Conversely, the more stress your pasture or rangeland is under the easier it is for establishment by Canada thistle to occur. Maintain your grasses and manage your grazing pressure but understand that Canada thistle is such an aggressive plant that competition alone is seldom effective against Canada thistle.