

## **Evaluation of herbicides for Canada thistle control in non-crop area near Bucyrus, ND, 2023-24.**

A trial to evaluate Canada thistle control using various herbicides and herbicide combinations was initiated in a heavily infested non-crop field near Bucyrus, ND. Treatments were applied on July 20, 2023 using a backpack research sprayer with a 5 foot spray boom using a spray volume of 15 gallons per acre (Table 2). Canada thistle was at the budding stage to early bloom at time of application. Control was evaluated 1 to 8 weeks after treatment (WAT) application and then again at 1 year after treatment (YAT). At 8 WAT, Canada thistle control was 88% or more for all treatments except dicamba plus Venue (81%). At 1 YAT, eight of the 13 treatments continued to control Canada thistle at 90% or more. These included Milestone (aminopyralid), Tordon (picloram), Method (aminocyclopyrachlor), Plainview (indaziflam plus imazapyr plus aminocyclopyrachlor), and Venue (pyraflufen) plus Method. Glyphosate alone, even at 40 oz/A, provided poor control of Canada thistle (61 to 72%). Dicamba alone at 32 oz/A also provided little control (54%). While aminocyclopyrachlor alone and in combination provided the most consistent control, it is only currently labelled for use in non-crop, right-of-ways, and other areas that will not be grazed or hayed. It must not be used around any trees, as it will cause serious injury or death of most tree species if it leaches into the tree's root zone.

Table 1. Canada thistle control with different herbicide treatment in a non-crop location near Bucyrus, ND, 2023-24. Canada thistle was in late-bud to early bloom stage at application.

Treatment <sup>a</sup>	Rate	Percent control				
		1 WAT	2 WAT	4 WAT	8 WAT	1 YAT
1 Roundup PowerMax 3 AMS	26.7 oz/a 8.5 lb/100 gal	25 f	71 cde	87 cd	89 d	61 bc
2 Roundup PowerMax 3 AMS	40 oz/a 8.5 lb/100 gal	42 de	80 b	95 ab	98 a	72 b
3 Milestone	7 oz/a	45 cd	76 bc	85 cde	93 bcd	100 a
4 Tordon	32 oz/a	52 bc	79 b	86 cde	97 ab	99 a
5 Method	8 oz/a	42 de	76 bc	87 cd	97 ab	99 a
6 Method	12 oz/a	42 de	71 c-f	83 de	99 a	100 a
7 Dicamba (Sterling Blue)	32 oz/a	42 de	74 bcd	81 e	88 d	54 c
8 Plainview SC	32 oz/a	43 cd	69 def	89 c	98 a	99 a
9 Plainview SC	48 oz/a	55 ab	78 b	90 bc	100 a	100 a
10 Roundup PowerMax 3 Plainview SC AMS	26.7 oz/a 32 oz/a 8.5 lb/100 gal	62 a	88 a	96 a	100 a	96 a
11 Venue 2,4-D LV6	3.5 oz/a 23 oz/a	43 cd	65 fg	81 e	88 d	35 d
12 Venue Method	3.5 oz/a 8 oz/a	43 cd	66 efg	89 c	96 abc	93 a
13 Venue Dicamba (Sterling Blue)	3.5 oz/a 16 oz/a	33 ef	63 g	74 f	81 e	0 f
LSD P=.05		8.5	6.1	5.2	5.3	11.1
Standard Deviation		5.1	3.7	3.1	3.2	6.6
CV		11.63	5.09	3.72	3.47	9.65
Treatment F		10.890	23.645	38.815	31.690	99.420
Treatment Prob(F)		0.0001	0.0001	0.0001	0.0001	0.0001

Means followed by same letter or symbol do not significantly differ (P=.05, LSD).

Table 2. Description of herbicide application and equipment for treatments applied to control Canada thistle in non-crop location near Bucyrus, ND, 2022-23.

Application Description		Application Equipment	
Date	Jul-20-2023	Equipment Type	Backpack
Start Time	1:30 PM	Operation Pressure	28 PSI
Stop Time	2:57 PM	Nozzle Model	11015
Timing	POST	Nozzle Type	Flat fan
Air Temperature Start, Stop	76.5, 75.5 F	Nozzle Spacing	19 IN
% Relative Humidity Start, Stop	46.3, 46.4	Boom Height	60 IN
Wind Velocity+Dir. Start	3.2 MPH, NNW	Ground Speed	2.7 MPH
Wind Velocity+Dir. Stop	2.7 MPH, NW	Carrier	WATER
Wind Velocity+Dir. Max	6.2 MPH, WNW	Application Amount	15 GAL/AC
Wet Leaves (Y/N)	N, no	Propellant	CO2
Soil Temperature	75 F		
% Cloud Cover	50		



