

Canada thistle control using the rosette technique, Carrington, 2015-16. Greg Endres and Mike Ostlie. A field study was conducted during 2015-16 at the NDSU Carrington Research Extension Center to re-examine control of Canada thistle using the rosette technique. Experimental design was a randomized complete block with three replications. Selected summer 2015 tillage treatments involved roto-tilling on June 12 to 1- to 24-inch tall (rosette to bud stage) Canada thistle followed by a second tillage on July 13. Selected summer 2015 mowing treatments were on June 12 followed by mowing on July 3 (rosette to bud stage) and August 4. Herbicides were applied with a CO₂-pressurized plot sprayer delivering 17 gal/A at 35 psi through 8002 flat fan nozzles to the center 6.67 ft of 10- by 30-ft plots. Herbicides were applied during summer 2015 on June 20 at 76 F, 61% RH and 9 mph wind to 2- to 30-inch tall (rosette to bud stage) Canada thistle. Herbicides were applied during fall 2015 on September 29 at 69 F, 26% RH and 11 mph wind to 1- to 24-inch tall (rosette to bud stage) Canada thistle. Following fall-applied herbicides, selected treatments were roto-tilled on October 9. Barley was planted in the trial on April 8, 2016. No herbicides were used during the growing season but the trial was mowed August 3.

Summer-applied Roundup PowerMax or WideMatch and summer- plus fall-applied Roundup PowerMax provided 76-81% Canada thistle control when evaluated on September 24, 2015 (before fall tillage to selected treatments) (Table). Canada thistle control when evaluated in May 2016 generally was good to excellent (77-97%) with all treatments except the summer herbicide treatments (numbers 3 and 4). However, only suppression (66-73% control) of Canada thistle was achieved when evaluated in September 2016 with mowing followed by fall-applied Roundup PowerMax; summer plus fall application of Roundup PowerMax; mowing followed by fall-applied Roundup PowerMax plus fall tillage; and summer application of WideMatch followed by fall-applied Stinger plus fall tillage (treatments 2, and 6-8). In summary, the data indicate mowing followed by fall herbicide or summer- followed by fall-applied herbicide provided the highest level of Canada thistle suppression at the close of the second year of the trial.

Table.

Number	Treatment		Herbicide rate fl oz/A	Canada thistle control				
	Description ¹	Timing ²		24-Sep-15	16-May-16	18-Jun-16	15-Jul-16	21-Sep-16
				%				
1	Tillage Roundup PowerMax	Summer 2015 29-Sep-15	x 32	35	92	75	77	56
2	Mow Roundup PowerMax	Summer 2015 29-Sep-15	x 32	63	83	74	78	72
3	Roundup PowerMax	20-Jun-15	32	76	13	15	10	0
4	WideMatch	20-Jun-15	28.4	76	33	13	8	0
5	Tillage Roundup PowerMax Tillage	Summer 2015 29-Sep-15 9-Oct-15	x 32 x	42	77	72	76	29
6	Roundup PowerMax Roundup PowerMax	20-Jun-15 29-Sep-15	32 32	81	84	76	77	66
7	Mow Roundup PowerMax Tillage	Summer 2015 29-Sep-15 9-Oct-15	x 32 x	59	80	75	79	69
8	WideMatch Stinger Tillage	20-Jun-15 29-Sep-15 9-Oct-15	28.4 10.7 x	71	97	79	84	73
CV (%)				6.1	18.6	20.3	14.3	31.1
LSD (0.05)				9	23	21	15	25

¹Roundup PowerMax includes Class Act NG at 2.5% v/v (Winfield).

²Summer 2015: Tillage (roto-till)=June 12 and July 13; Mow=June 12, July 3 and August 4.