

Comparison of New Formulations of Aminopyralid (Milestone) plus Triclopyr Tea (Garlon) for Control of Annual Weeds and Canada Thistle during the 2006 and 2007 Growing Seasons.

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A field study was initiated near Scottsbluff, Nebraska to compare herbicide performance from new formulations of aminopyralid. The experimental design was a randomized complete block with three replications. Individual plots were 7 feet wide by 25 feet long. The experiment was located on a sandy loam soil with pH of 7.8, organic matter of 4.3% and cation exchange capacity of 16.4 mg/100 g. Herbicide treatments were applied on May 18, 2006, when annual weeds were 2 to 5 inches tall and Canada thistle was just beginning to bolt and was 4 inches tall (Table 1). Herbicides were applied with a backpack sprayer calibrated to deliver 20 gallons of water per acre at 36-psi pressure with Spraying Systems 11002 VS nozzles. Environmental conditions at the time of treatment are given in Table 1.

Weed control and Nebraska sedge injury were evaluated on June 15 and September 21, 2006 and May 16, 2007. Nebraska sedge was injured by all treatments but injury was greatest with Garlon applied at 1.0 lb/acre either alone or in combination with Milestone (Table 2). Weed control evaluations taken in mid June of 2006 showed that all treatments were providing 86% or greater kochia control and 99% tansy mustard control. None of the treatments provided satisfactory mint control. Canada thistle control increased as Milestone rate increased. Garlon alone was not providing effective Canada thistle control. In late September of 2006, Canada thistle control with Milestone plus Garlon tank mixes ranged from 70 to 87% while premixed formulations containing Milestone plus Garlon ranged from 72 to 80% control. Canada thistle control with Garlon alone or Banvel plus 2,4-D was 40% or less. Treatments providing the most effective kochia control in late September were Garlon plus Vanquish or Banvel plus 2,4-D. By May of 2007, approximately 12 mo after treatment, Canada thistle control had declined in all treatments except a tank mix of Milestone plus Garlon at 0.075 + 0.77 lb/acre. The data seem to suggest that tank mixing or premixed formulations of Milestone plus Garlon may antagonize the effectiveness of Milestone for Canada thistle control.

Table 1. Environmental Conditions at the Time of Herbicide Application.

Date	Air temperature (F)	Humidity (%)	Wind speed & direction (mph)	Time of day	Weed heights (inches)			
					Kochia	Mint	Tansy mustard	Canada thistle
May 18	68	30	4.5 NW	11:00 am	2	3	5	4

Rainfall before and after herbicide application:

Date	Amount - (inches) -	Date	Amount - (inches) -	Date	Amount - (inches) -
April	0.71	May 23	0.18	May 30	0.50
May 1-18	0.48	May 28	0.10		

Table 2. Comparison of New Formulations of Aminopyralid plus Triclopyr Tea for Control of Annual Weeds and Canada Thistle during the 2006 and 2007 Growing Seasons.

Herbicide treatment ¹	Rate lb/acre	Sedge injury ²	Weed control						
			6/15/06 ³				9/21/06		5/16/07
			Kochia	Mint	Canada thistle	Tansy mustard	Kochia	Canada thistle	Canada thistle
			----- (%) -----						
Nontreated	—	0	0	0	0	0	0	0	0
Milestone + Garlon 3A + Act 90	0.05 + 0.51	7	99	32	77	99	38	70	22
Milestone + Garlon 3A + Act 90	0.075 + 0.77	13	99	32	87	99	52	87	86
Milestone + Garlon 3A + Act 90	0.10 + 1.00	22	86	30	85	99	57	85	56
Milestone + Garlon + Act 90	0.55	5	86	30	77	99	57	73	54
Milestone + Garlon + Act 90	0.82	7	88	32	88	99	52	80	54
Milestone + Garlon + Act 90	1.10	23	96	33	90	99	75	72	56
Garlon 3A + Act 90	0.75	3	99	0	60	99	63	40	0
Garlon 3A + Vanquish + Act 90	0.75 + 0.5	7	99	10	68	99	96	30	0
Garlon 4 + Act 90	0.75	5	99	3	53	99	67	23	0
Garlon 4 + Act 90	1.0	20	99	2	60	99	67	35	15
Banvel + 2,4-D amine + Act 90	0.25 + 1.0	18	99	0	72	99	93	22	0
LSD at 0.5%	—	19	13	NS	22	5	28	25	49

¹ Surfactant Activator 90 (Act 90) was combined with the spray solution at 0.25% per volume of carrier. Herbicides applied May 18, 2006 when average weed height was 3 to 4 inches.

² Perennial sedge injury was evaluated on a scale from 0 to 100 with 0 equal to no injury and 100 equal to death of the plant.

³ Weed control was estimated on June 15 and September 21, 2006 and May 16, 2007 by visually comparing treated and nontreated plots.