

UW – Madison Weed Science Renz Lab

Can Elevore or Loyant Provide Long-Term Suppression of Canada Thistle?

Dr. Mark Renz, Professor and Extension Weed Specialist

mrenz@wisc.edu – 357 Moore Hall, 1575 Linden Drive, Madison, WI, 53706

José Luiz Dias, Postdoctoral Researcher, and Leo Roth, Research Specialist

Contact: nlroth2@wisc.edu – 236 Moore Hall, 1575 Linden Drive, Madison, WI, 53706

Objective:

Determine the efficacy of Elevore (halauxifen) and Loyant (florpyrauxifen) on Canada thistle (*Cirsium arvense*) when combined with either Remedy Ultra (triclopyr), Vista XRT (fluroxypyr), or Transline (clopyralid).

Summary:

Elevore and Loyant provided effective Canada thistle control ($\geq 90\%$) at the end of the application year (101 days after treatment (DAT)) when combined with Transline. Korvetto (clopyralid + halauxifen) also achieved $\geq 90\%$ Canada thistle control at 101 DAT. Control of Canada thistle was intermediate (76-85%) at 101 DAT with combinations of Elevore + Remedy Ultra and Loyant + Remedy Ultra. Control was poor ($< 50\%$) at 101 DAT with combinations of Elevore + Vista XRT and Loyant + Vista XRT.

One year after treatment (383 DAT), no differences were detected. Treatments that contained Transline or the high rate of Korvetto had $> 90\%$ control and patterns were similar to 101 DAT rating. By August stem density was reduced by most treatments except Remedy or Vista XRT mixed with either Loyant or Elevore.

While variability in Canada thistle populations made it difficult to determine differences among treatments, results suggest the addition of clopyralid alone (Transline) or in mixtures was the most effective at suppressing Canada thistle. While other products did provide suppression, the level of suppression was reduced when not mixed with Transline or Korvetto which both contain clopyralid.

Herbicide Treatments			
Trt No.	Treatment	Active Ingredients	Rate
1	ProClova	2,4-D + florypyrauxifen	24 fluid ounces per acre (fl oz/A)
2	PastureGard	fluroxypyr + triclopyr	24 fl oz/A
3	Transline	clopyralid	16 fl oz/A
4	Remedy Ultra	triclopyr	16 fl oz/A
5	GF-3635	fluroxypyr + halauxifen + triclopyr	16 fl oz/A
6	Remedy Ultra Loyant	triclopyr florypyrauxifen	24 fl oz/A 3.82 fl oz/A
7	Vista XRT Loyant	fluroxypyr florypyrauxifen	11.5 fl oz/A 3.82 fl oz/A
8	Remedy Ultra Elevore	triclopyr halauxifen	24 fl oz/A 1 fl oz/A
9	Remedy Ultra Elevore	triclopyr halauxifen	24 fl oz/A 2 fl oz/A
10	Vista XRT Elevore	fluroxypyr halauxifen	11.5 fl oz/A 2 fl oz/A
11	Transline Loyant	clopyralid florypyrauxifen	12 fl oz/A 6.56 fl oz/A
12	Transline Loyant	clopyralid florypyrauxifen	16 fl oz/A 6.56 fl oz/A
13	Korvette	clopyralid + halauxifen	16 fl oz/A
14	Korvette	clopyralid + halauxifen	32 fl oz/A
15	Transline Elevore	clopyralid halauxifen	16 fl oz/A 2 fl oz/A

Herbicide Application	
Date	June 12 th , 2020, 10:30 – 11:50am
Equipment	CO ₂ pressurized 10-foot boom sprayer (20 GPA)
Nozzles & spacing	Eight TeeJet 11002VS XR Nozzles with 15-inch spacing



Weather Data

Weather Station	KWIMERRI1
Temperature	71 - 76°F
Wind Speed and Direction	2 mph – 4 mph
Relative Humidity	77% - 81%
Cloud Cover	5%
Previous Rain Event Within 48 Hours	June 11 th , 2020, 4pm – 0.06 inches
When ≥ 0.25 inches of precipitation occurred after treatment	June 20 th , 2020, 5pm – 1.2 inches

Research Plot Information

Plot Dimensions	10 feet by 25 feet (250 square feet)
Design	Randomized Complete Block, 4 blocks
Soil Type	Richwood silt loam
Soil Characteristics	20.8% clay, 1% organic matter, 6.4 pH, 3.5% slope

Plants Present at Application – Developmental Stage

Species	Average Height (in)	Phenological Stage
Canada thistle (<i>Cirsium arvense</i>)	28	flower bud



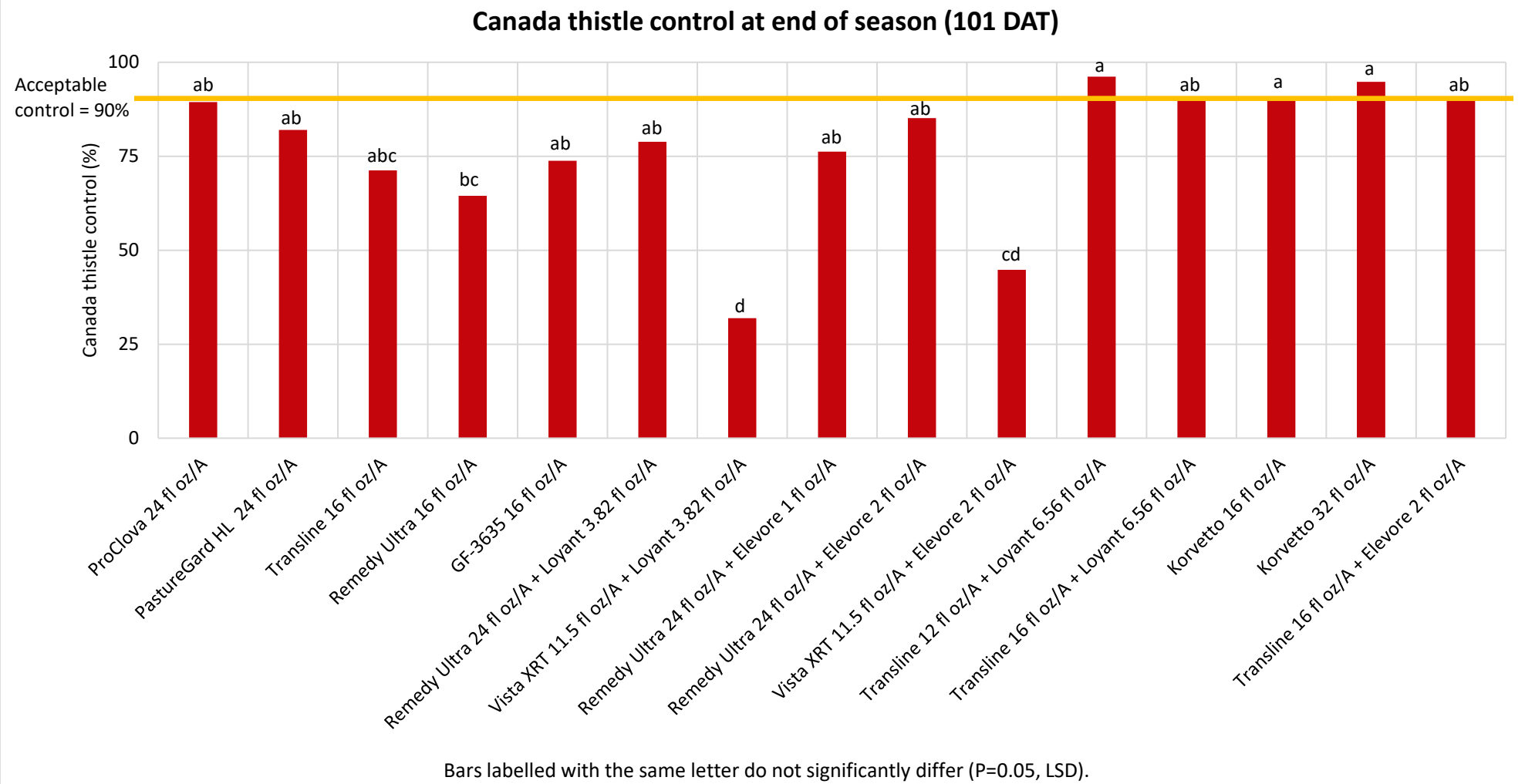
Canada thistle at application - note presence of flower buds



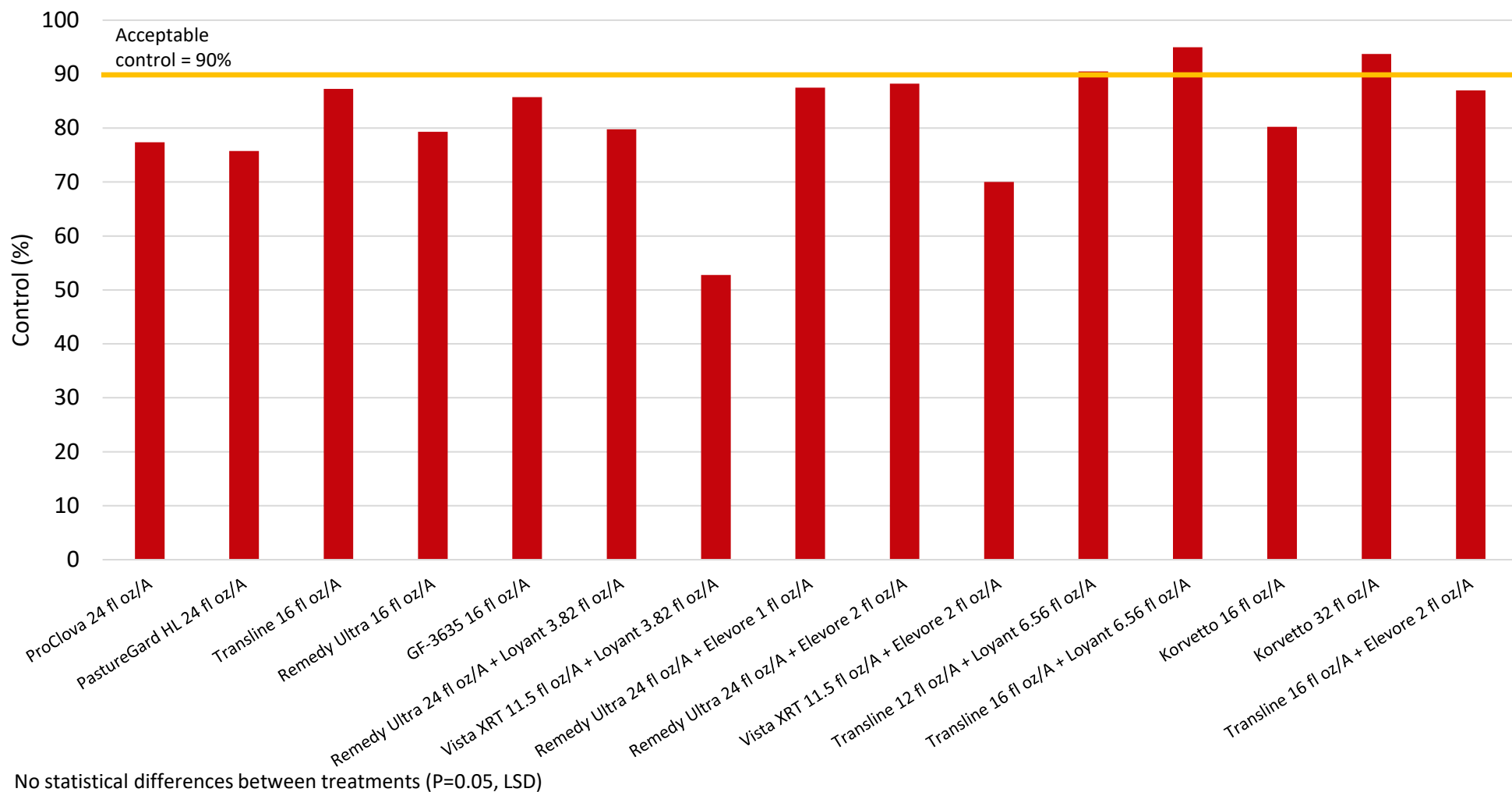
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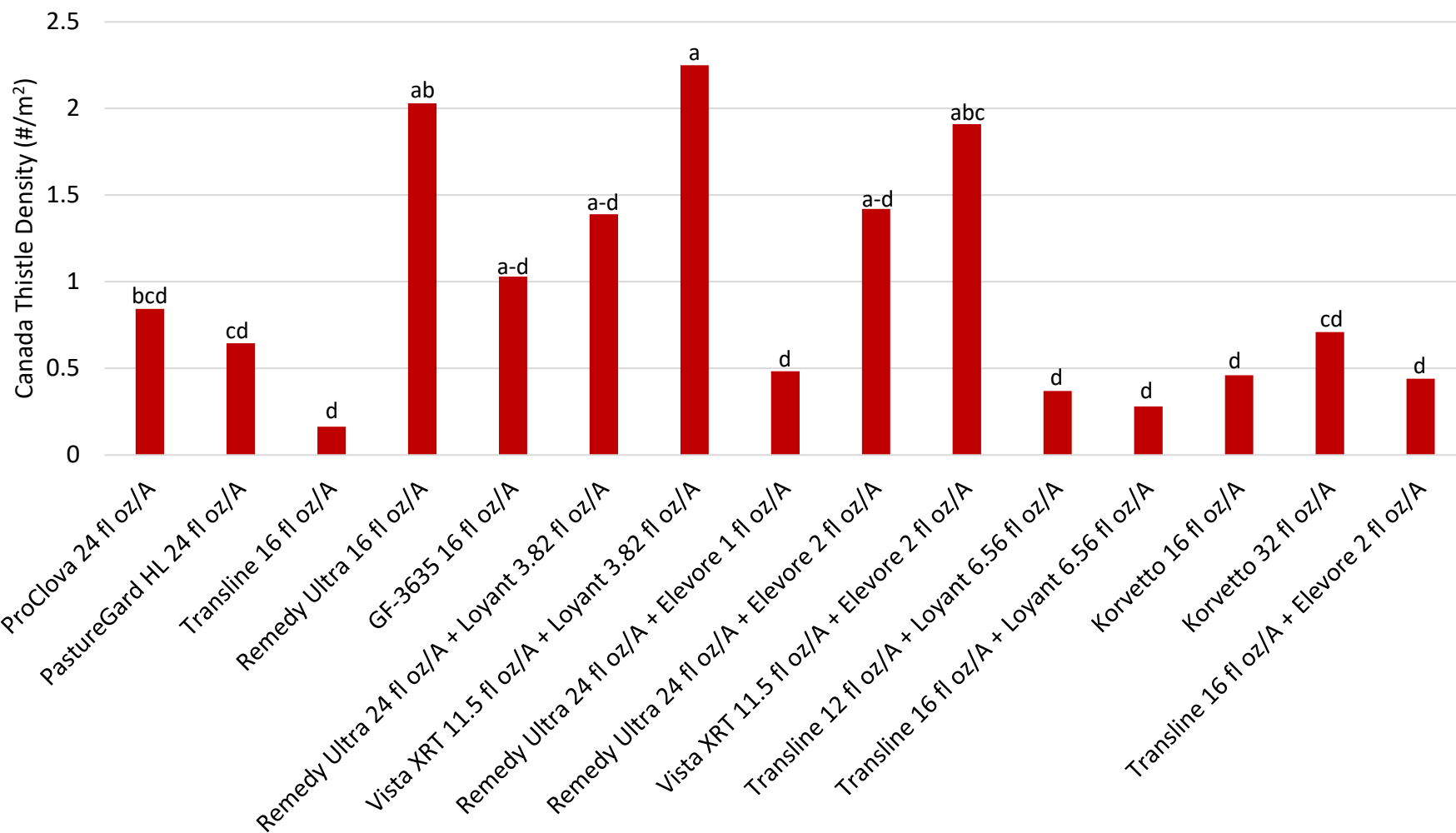
Results:



Canada Thistle Control 383 DAT - June 30th, 2021



Canada Thistle Density 430 DAT - August 16th, 2021



Bars labelled with the same letter do not significantly differ (P=0.05, LSD).

Pre-Application Data – June 8th, 2020

Trt. No.	Treatment	Rate	Canada Thistle Cover (%)	Wild Carrot Cover (%)	Other Broadleaf Cover (%)	Bareground/ Litter Cover (%)	Grass Cover (%)
1	ProClova	24 fl oz/A	30 -	2 -	8 -	4 -	56 -
2	PastureGard	24 fl oz/A	17 -	2 -	4 -	4 -	71 -
3	Transline	16 fl oz/A	17 -	4 -	6 -	4 -	68 -
4	Remedy Ultra	16 fl oz/A	18 -	0.5 -	6 -	5 -	69 -
5	GF-3635	16 fl oz/A	28 -	10 -	6 -	2 -	52 -
6	Remedy Ultra Loyant	24 fl oz/A 3.82 fl oz/A	21 -	4 -	14 -	6 -	54 -
7	Vista XRT Loyant	11.5 fl oz/A 3.82 fl oz/A	21 -	4 -	12 -	3 -	58 -
8	Remedy Ultra Elevore	24 fl oz/A 1 fl oz/A	15 -	2 -	6 -	4 -	72 -
9	Remedy Ultra Elevore	24 fl oz/A 2 fl oz/A	31 -	3 -	9 -	7 -	50 -
10	Vista XRT Elevore	11.5 fl oz/A 2 fl oz/A	18 -	3 -	9 -	4 -	66 -
11	Transline Loyant	12 fl oz/A 6.56 fl oz/A	25 -	6 -	6 -	4 -	58 -
12	Transline Loyant	16 fl oz/A 6.56 fl oz/A	16 -	2 -	12 -	4 -	65 -
13	Korvetto	16 fl oz/A	21 -	4 -	8 -	4 -	62 -
14	Korvetto	32 fl oz/A	28 -	6 -	4 -	4 -	58 -
15	Transline Elevore	16 fl oz/A 2 fl oz/A	20 -	0.5 -	4 -	4 -	72 -
Statistics¹							
Least Significant Difference (LSD) P=.05			16.07	7.37	8.41	2.3	19.39
Standard Deviation			11.26	5.16	5.89	1.61	13.58
Coefficient of Variation (CV)			51.2	141.43	74.29	38.56	21.87
Treatment Prob(F)			0.5296	0.6161	0.45	0.0872	0.2865

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

¹ All statistical analyses were conducted in ARM software and assumptions of ANOVA were not evaluated.



11 DAT – June 23rd, 2020			
Trt. No.	Treatment	Rate	Canada Thistle Injury (%)
1	ProClova	24 fl oz/A	58 bcd
2	PastureGard	24 fl oz/A	53 cde
3	Transline	16 fl oz/A	68 abc
4	Remedy Ultra	16 fl oz/A	48 de
5	GF-3635	16 fl oz/A	38 ef
6	Remedy Ultra Loyant	24 fl oz/A 3.82 fl oz/A	45 de
7	Vista XRT Loyant	11.5 fl oz/A 3.82 fl oz/A	25 f
8	Remedy Ultra Elevore	24 fl oz/A 1 fl oz/A	58 bcd
9	Remedy Ultra Elevore	24 fl oz/A 2 fl oz/A	50 de
10	Vista XRT Elevore	11.5 fl oz/A 2 fl oz/A	28 f
11	Transline Loyant	12 fl oz/A 6.56 fl oz/A	75 a
12	Transline Loyant	16 fl oz/A 6.56 fl oz/A	78 a
13	Korvette	16 fl oz/A	55 bcd
14	Korvette	32 fl oz/A	70 ab
15	Transline Elevore	16 fl oz/A 2 fl oz/A	75 a
Statistics			
LSD P=.05			16.6
Standard Deviation			11.6
CV			21.24
Treatment Prob(F)			0.0001

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

28 DAT – July 10th, 2020

Trt. No.	Treatment	Rate	Canada Thistle Injury (%)	Canada Thistle Control (%)	Canada Thistle Cover (%)	Other Broadleaf Cover (%)	Bareground/ Litter Cover (%)	Grass Cover (%)
1	ProClova	24 fl oz/A	40 de	0 d	44 ab	2 -	0.5 d	53 bcd
2	PastureGard	24 fl oz/A	45 cde	21 cd	18 d-g	4 -	2 cd	76 ab
3	Transline	16 fl oz/A	94 a	71 ab	4 g	4 -	8 a	83 a
4	Remedy Ultra	16 fl oz/A	38 de	0 d	40 a-d	5 -	0.3 d	54 bcd
5	GF-3635	16 fl oz/A	36 de	0 d	41 a-d	3 -	0.5 d	55 bcd
6	Remedy Ultra Loyant	24 fl oz/A 3.82 fl oz/A	40 de	0 d	42 abc	6 -	1 d	50 cd
7	Vista XRT Loyant	11.5 fl oz/A 3.82 fl oz/A	22 e	0 d	48 a	6 -	0 d	46 d
8	Remedy Ultra Elevore	24 fl oz/A 1 fl oz/A	62 a-d	25 cd	20 c-g	6 -	2 cd	72 abc
9	Remedy Ultra Elevore	24 fl oz/A 2 fl oz/A	28 de	6 d	48 a	3 -	2 cd	46 d
10	Vista XRT Elevore	11.5 fl oz/A 2 fl oz/A	31 de	0 d	36 a-e	4 -	0.8 d	59 a-d
11	Transline Loyant	12 fl oz/A 6.56 fl oz/A	74 abc	56 ab	16 efg	8 -	4 bc	72 abc
12	Transline Loyant	16 fl oz/A 6.56 fl oz/A	91 a	78 a	4 g	4 -	8 a	82 a
13	Korvette	16 fl oz/A	51 cde	26 cd	30 a-f	8 -	0.5 d	61 a-d
14	Korvette	32 fl oz/A	55 b-e	48 bc	20 b-g	3 -	6 ab	70 abc
15	Transline Elevore	16 fl oz/A 2 fl oz/A	88 ab	56 ab	8 fg	2 -	8 a	81 a
Statistics								
LSD P=.05			33.76	28.224	23.64	5.39	3.19	23.17
Standard Deviation			23.64	19.764	16.56	3.78	2.23	16.22
CV			44.18	74.93	59.45	79.56	73.64	25.2
Treatment Prob(F)			0.0003	0.0001	0.0005	0.4832	0.0001	0.0082

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



40 DAT – July 22nd, 2020

Trt. No.	Treatment	Rate	Canada Thistle Injury (%)	Canada Thistle Control (%)	Canada Thistle Cover (%)	Horsenettle Cover (%)	Other Broadleaf Cover (%)	Bareground /Litter Cover (%)	Grass Cover (%)
1	ProClova	24 fl oz/A	65 de	55 abc	12 -	8 -	7 -	1 -	74 -
2	PastureGard	24 fl oz/A	68 de	25 cd	9 -	6 -	4 -	2 -	80 -
3	Transline	16 fl oz/A	93 a	71 ab	3 -	12 -	2 -	1 -	84 -
4	Remedy Ultra	16 fl oz/A	60 ef	33 cd	15 -	3 -	4 -	1 -	77 -
5	GF-3635	16 fl oz/A	45 fg	43 bcd	16 -	4 -	4 -	2 -	76 -
6	Remedy Ultra Loyant	24 fl oz/A 3.82 fl oz/A	70 cde	48 bc	12 -	10 -	6 -	1 -	72 -
7	Vista XRT Loyant	11.5 fl oz/A 3.82 fl oz/A	25 h	14 d	26 -	6 -	4 -	1 -	64 -
8	Remedy Ultra Elevore	24 fl oz/A 1 fl oz/A	74 b-e	58 abc	6 -	6 -	8 -	1 -	83 -
9	Remedy Ultra Elevore	24 fl oz/A 2 fl oz/A	61 ef	42 bcd	16	12 -	2 -	1 -	68 -
10	Vista XRT Elevore	11.5 fl oz/A 2 fl oz/A	41 gh	12 d	20 -	6 -	4 -	2 -	70 -
11	Transline Loyant	12 fl oz/A 6.56 fl oz/A	86 abc	74 ab	6 -	5 -	5 -	2 -	84 -
12	Transline Loyant	16 fl oz/A 6.56 fl oz/A	90 ab	72 ab	4 -	8 -	4 -	1 -	82 -
13	Korvetto	16 fl oz/A	81 a-d	54 abc	8 -	15 -	4 -	1 -	76 -
14	Korvetto	32 fl oz/A	90 ab	69 ab	9 -	10 -	3 -	1 -	76 -
15	Transline Elevore	16 fl oz/A 2 fl oz/A	91 a	82 a	3 -	6 -	2 -	1 -	90 -
Statistics									
LSD P=.05			16.52	32.704	14.73	7.08	5.14	0.65	20.22
Standard Deviation			11.57	22.902	10.31	4.91	3.59	0.45	14.16
CV			16.63	45.21	94.65	61.88	84.27	37.54	18.34
Treatment Prob(F)			0.0001	0.0006	0.1303	0.2464	0.7111	0.569	0.517

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

54 DAT – August 5th, 2020

Trt. No.	Treatment	Rate	Canada Thistle Control (%)	Canada Thistle Cover (%)	Horsenettle Cover (%)	Other Broadleaf Cover (%)	Bareground/Litter Cover (%)	Grass Cover (%)
1	ProClova	24 fl oz/A	65 bcd	9.5 cd	10 -	4 -	2 -	74 -
2	PastureGard	24 fl oz/A	67 bcd	4 cd	0.8 -	2 -	2 -	90 -
3	Transline	16 fl oz/A	74 abc	3 cd	7 -	2 -	2 -	85 -
4	Remedy Ultra	16 fl oz/A	46 d	10.7 bcd	6 -	1 -	1 -	80 -
5	GF-3635	16 fl oz/A	56 cd	14 bc	2 -	3 -	2 -	78 -
6	Remedy Ultra Loyant	24 fl oz/A 3.82 fl oz/A	69 a-d	6 cd	14 -	4 -	2 -	75 -
7	Vista XRT Loyant	11.5 fl oz/A 3.82 fl oz/A	6 e	26 a	11 -	0.5 -	1 -	61 -
8	Remedy Ultra Elevore	24 fl oz/A 1 fl oz/A	70 a-d	4 cd	1 -	3 -	2 -	90 -
9	Remedy Ultra Elevore	24 fl oz/A 2 fl oz/A	70 a-d	8 cd	14 -	2 -	2 -	74 -
10	Vista XRT Elevore	11.5 fl oz/A 2 fl oz/A	10 e	20 ab	8 -	2 -	2 -	68 -
11	Transline Loyant	12 fl oz/A 6.56 fl oz/A	94 a	2 d	2 -	8 -	2 -	87 -
12	Transline Loyant	16 fl oz/A 6.56 fl oz/A	90 ab	1 d	8 -	1 -	2 -	86 -
13	Korvetto	16 fl oz/A	82 ab	2 d	12 -	4 -	2 -	79 -
14	Korvetto	32 fl oz/A	84 ab	5 cd	10 -	6 -	2 -	76 -
15	Transline Elevore	16 fl oz/A 2 fl oz/A	92 a	1 d	8 -	0.5 -	2 -	88 -
Statistics								
LSD P=.05			25.239	10.29	13.81	5.36	1.1	19.51
Standard Deviation			17.674	7.2	9.67	3.75	0.77	13.66
CV			27.01	91.8	124.06	129.56	43.79	17.14
Treatment Prob(F)			0.0001	0.0002	0.613	0.3478	0.683	0.1463

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

67 DAT – August 18th, 2020

Trt. No.	Treatment	Rate	Canada Thistle Control (%)	Canada Thistle Cover (%)	Horsenettle Cover (%)	Other Broadleaf Cover (%)	Bareground/Litter Cover (%)	Grass Cover (%)
1	ProClova	24 fl oz/A	76 bc	6 cd	6 -	12 -	5 -	71 -
2	PastureGard	24 fl oz/A	72 bc	2 d	3 -	2 -	10 -	82 -
3	Transline	16 fl oz/A	89 ab	1 d	9 -	2 -	5 -	82 -
4	Remedy Ultra	16 fl oz/A	82 abc	4 d	6 -	0.7 -	8 -	81 -
5	GF-3635	16 fl oz/A	62 c	14 bc	3 -	4 -	4 -	75 -
6	Remedy Ultra Loyant	24 fl oz/A 3.82 fl oz/A	88 ab	2 d	11 -	4 -	6 -	76 -
7	Vista XRT Loyant	11.5 fl oz/A 3.82 fl oz/A	11d	25 a	8 -	4 -	4 -	58 -
8	Remedy Ultra Elevore	24 fl oz/A 1 fl oz/A	84 ab	2 d	2 -	4 -	6 -	86 -
9	Remedy Ultra Elevore	24 fl oz/A 2 fl oz/A	89 ab	3 d	11 -	4 -	6 -	75 -
10	Vista XRT Elevore	11.5 fl oz/A 2 fl oz/A	6 d	16 ab	6 -	2 -	5 -	70 -
11	Transline Loyant	12 fl oz/A 6.56 fl oz/A	97 a	0.8 d	4 -	16 -	8 -	71 -
12	Transline Loyant	16 fl oz/A 6.56 fl oz/A	98 a	0.5 d	9 -	2 -	6 -	82 -
13	Korvetto	16 fl oz/A	90 ab	2 d	18 -	5 -	14 -	62 -
14	Korvetto	32 fl oz/A	91 ab	2 d	11 -	8 -	7 -	70 -
15	Transline Elevore	16 fl oz/A 2 fl oz/A	91 ab	2 d	8 -	1 -	5 -	84 -
Statistics								
LSD P=.05			21.018	8.8	11.59	9.51	5.74	17.94
Standard Deviation			14.718	6.16	8.11	6.66	4.02	12.56
CV			19.61	111.22	104.98	133.19	59.74	16.75
Treatment Prob(F)			0.0001	0.0001	0.4361	0.1061	0.13	0.1098

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

81 DAT – September 1st, 2020

Trt. No.	Treatment	Rate	Canada Thistle Control (%)	Canada Thistle Cover (%)	Horsenettle Cover (%)	Other Broadleaf Cover (%)	Bareground/Litter Cover (%)	Grass Cover (%)
1	ProClova	24 fl oz/A	86 abc	3 cd	6 -	10 -	2 -	77 -
2	PastureGard	24 fl oz/A	75 abc	4 bcd	4 -	4 -	1 -	88 -
3	Transline	16 fl oz/A	80 abc	2 d	7 -	2 -	1 -	88 -
4	Remedy Ultra	16 fl oz/A	66 c	6 bc	6 -	0.7 -	2 -	85 -
5	GF-3635	16 fl oz/A	71 bc	7 b	4 -	2 -	2 -	84 -
6	Remedy Ultra Loyant	24 fl oz/A 3.82 fl oz/A	80 abc	4 bcd	12 -	6 -	2 -	76 -
7	Vista XRT Loyant	11.5 fl oz/A 3.82 fl oz/A	29 d	13 a	6 -	4 -	3 -	74 -
8	Remedy Ultra Elevore	24 fl oz/A 1 fl oz/A	75 abc	3 bcd	3 -	4 -	2 -	87 -
9	Remedy Ultra Elevore	24 fl oz/A 2 fl oz/A	84 abc	4 bcd	12 -	2 -	2 -	79 -
10	Vista XRT Elevore	11.5 fl oz/A 2 fl oz/A	25 d	12 a	7 -	2 -	2 -	78 -
11	Transline Loyant	12 fl oz/A 6.56 fl oz/A	95 a	1 d	3 -	6 -	1 -	89 -
12	Transline Loyant	16 fl oz/A 6.56 fl oz/A	90 ab	2 d	12 -	3 -	2 -	82 -
13	Korvette	16 fl oz/A	91 ab	1 d	16 -	9 -	3 -	71 -
14	Korvette	32 fl oz/A	94 a	2 d	10 -	6 -	2 -	79 -
15	Transline Elevore	16 fl oz/A 2 fl oz/A	87 abc	2 d	8 -	2 -	1 -	86 -
Statistics								
LSD P=.05			22.753	3.86	11.25	7.64	1.89	12.82
Standard Deviation			15.933	2.7	7.88	5.35	1.33	8.98
CV			21.02	62.77	99.74	127.81	65.21	11
Treatment Prob(F)			0.0001	0.0001	0.549	0.3889	0.2609	0.1183

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

101 DAT – September 21st, 2020

Trt. No.	Treatment	Rate	Canada Thistle Control (%)	Canada Thistle Cover (%)	Horsenettle Cover (%)	Other Broadleaf Cover (%)	Bareground/Litter Cover (%)	Grass Cover (%)
1	ProClova	24 fl oz/A	89ab	2 d	2 -	4 -	6 -	84 -
2	PastureGard	24 fl oz/A	82 ab	2 d	0.5 -	3 -	10 -	84 -
3	Transline	16 fl oz/A	71 abc	2 d	2 -	1 -	17 -	78 -
4	Remedy Ultra	16 fl oz/A	64 bc	7 abc	4 -	2 -	16 -	70 -
5	GF-3635	16 fl oz/A	74 ab	6 bc	1 -	2 -	8 -	82 -
6	Remedy Ultra Loyant	24 fl oz/A 3.82 fl oz/A	78 ab	4 cd	4 -	3 -	8 -	80 -
7	Vista XRT Loyant	11.5 fl oz/A 3.82 fl oz/A	32 d	10 a	6 -	2 -	20 -	61 -
8	Remedy Ultra Elevore	24 fl oz/A 1 fl oz/A	76 ab	3 d	0.8 -	2 -	17 -	76 -
9	Remedy Ultra Elevore	24 fl oz/A 2 fl oz/A	85 ab	4 cd	6 -	2 -	8 -	78 -
10	Vista XRT Elevore	11.5 fl oz/A 2 fl oz/A	44 cd	8 ab	2 -	0.5 -	18 -	70 -
11	Transline Loyant	12 fl oz/A 6.56 fl oz/A	96 a	1 d	0.3 -	2 -	13 -	83 -
12	Transline Loyant	16 fl oz/A 6.56 fl oz/A	90.2 ab	2 d	4 -	3 -	6 -	84 -
13	Korvetto	16 fl oz/A	90.9 a	2 d	10 -	4 -	8 -	74 -
14	Korvetto	32 fl oz/A	94 a	2 d	4 -	6 -	8 -	80 -
15	Transline Elevore	16 fl oz/A 2 fl oz/A	90.4 ab	2 d	0.8 -	1 -	17 -	80 -
Statistics								
LSD P=.05			26.118	3.26	7.45	4.96	10.97	14.34
Standard Deviation			18.29	2.29	5.21	3.47	7.68	10.04
CV			23.57	60.48	159.38	124.1	62.37	12.9
Treatment Prob(F)			0.0002	0.0001	0.363	0.7367	0.1351	0.1143

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

355 DAT - June 2 nd , 2021						
Trt No.	Treatment	Rate	Canada Thistle Cover (%)	Other Broadleaf Cover (%)	Grass Cover (%)	Bareground/ Litter Cover (%)
1	ProClova	24 fl oz/A	1 -	2.3 b	86.3 -	10.5 -
2	PastureGard	24 fl oz/A	1.3 -	1.3 b	91.8 -	5.8 -
3	Transline	16 fl oz/A	0.8 -	0.3 b	93.5 -	5.5 -
4	Remedy Ultra	16 fl oz/A	1.8 -	4.3 ab	86.5 -	7.5 -
5	GF-3635	16 fl oz/A	1 -	0.8 b	90.3 -	8 -
6	Remedy Ultra Loyant	24 fl oz/A 3.82 fl oz/A	1 -	2 b	85.8 -	11.3 -
7	Vista XRT Loyant	11.5 fl oz/A 3.82 fl oz/A	2.3 -	4.3 ab	86 -	7.5 -
8	Remedy Ultra Elevore	24 fl oz/A 1 fl oz/A	0 -	0.5 b	91 -	8.5 -
9	Remedy Ultra Elevore	24 fl oz/A 2 fl oz/A	0.5 -	1.3 b	87.8 -	10.5 -
10	Vista XRT Elevore	11.5 fl oz/A 2 fl oz/A	1.5 -	1.3 b	85.5 -	11.8 -
11	Transline Loyant	12 fl oz/A 6.56 fl oz/A	0.3 -	0.3 b	90.3 -	9.3 -
12	Transline Loyant	16 fl oz/A 6.56 fl oz/A	0.3 -	0 b	89.8 -	10 -
13	Korvette	16 fl oz/A	0 -	0.8 b	88.5 -	10.8 -
14	Korvette	32 fl oz/A	0 -	0 b	93 -	7 -
15	Transline Elevore	16 fl oz/A 2 fl oz/A	0 -	0 b	89.8 -	10.3 -
Statistics						
LSD P=0.05			1.57	4.73	6.97	5.03
Standard Deviation			1.10	3.32	4.9	3.54
CV			124.96	154.83	5.54	41.61
Treatment Prob(F)			0.0590	0.0026	0.1577	0.1104

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



383 DAT - June 30th, 2021

Trt No.	Treatment	Rate	Canada Thistle Cover (%)	Canada Thistle Control (%)
1	ProClova	24 fl oz/A	3.5 -	77 -
2	PastureGard	24 fl oz/A	3.3 -	76 -
3	Transline	16 fl oz/A	1 -	87 -
4	Remedy Ultra	16 fl oz/A	4 -	79 -
5	GF-3635	16 fl oz/A	3.3 -	86 -
6	Remedy Ultra Loyant	24 fl oz/A 3.82 fl oz/A	3.5 -	80 -
7	Vista XRT Loyant	11.5 fl oz/A 3.82 fl oz/A	6 -	53 -
8	Remedy Ultra Elevore	24 fl oz/A 1 fl oz/A	1.5 -	88 -
9	Remedy Ultra Elevore	24 fl oz/A 2 fl oz/A	3.3 -	88 -
10	Vista XRT Elevore	11.5 fl oz/A 2 fl oz/A	6 -	70 -
11	Transline Loyant	12 fl oz/A 6.56 fl oz/A	1.8 -	91 -
12	Transline Loyant	16 fl oz/A 6.56 fl oz/A	1 -	95 -
13	Korvette	16 fl oz/A	2.3 -	80 -
14	Korvette	32 fl oz/A	1.8 -	94 -
15	Transline Elevore	16 fl oz/A 2 fl oz/A	1.8 -	87 -
Statistics				
LSD (P=0.05)			3.46	24.348
Standard Deviation			2.43	17.050
CV			83.9	20.78
Treatment Prob(F)			0.1458	0.1327

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



430 DAT – August 16th, 2021

Trt No.	Treatment	Rate	Canada Thistle Density (#/m ²)	Canada Thistle Mortality (%)
1	ProClova	24 fl oz/A	0.843 bcd	97.3 abc
2	PastureGard	24 fl oz/A	0.645 cd	97.5 ab
3	Transline	16 fl oz/A	0.163 d	98.5 ab
4	Remedy Ultra	16 fl oz/A	2.03 ab	90.5 de
5	GF-3635	16 fl oz/A	1.03 a-d	96.3 abc
6	Remedy Ultra Loyant	24 fl oz/A 3.82 fl oz/A	1.39 a-d	94.6 a-d
7	Vista XRT Loyant	11.5 fl oz/A 3.82 fl oz/A	2.25 a	92.2 cde
8	Remedy Ultra Elevore	24 fl oz/A 1 fl oz/A	0.483 d	98 ab
9	Remedy Ultra Elevore	24 fl oz/A 2 fl oz/A	1.42 a-d	94.6 a-d
10	Vista XRT Elevore	11.5 fl oz/A 2 fl oz/A	1.91 abc	92.3 cde
11	Transline Loyant	12 fl oz/A 6.56 fl oz/A	0.37 d	98.9 a
12	Transline Loyant	16 fl oz/A 6.56 fl oz/A	0.28 d	98.7 a
13	Korvette	16 fl oz/A	0.46 d	97.8 ab
14	Korvette	32 fl oz/A	0.71 cd	97.6 ab
15	Transline Elevore	16 fl oz/A 2 fl oz/A	0.44 d	98.3 ab
Statistics				
LSD (P=0.05)			1.2609	5.1744
Standard Deviation			0.8864	3.6375
CV			89.8	3.8
Treatment Prob(F)			0.0288	0.0035

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