

UW – Madison Weed Science Renz Lab

Corteva Autumn Olive

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Objective:

Evaluate the effectiveness of products that contain florasulfuron (TerraVue, DuraCor) alone or mixed with other products in controlling Autumn Olive.

Summary:

Initial results found high initial levels of control from treatments. Leaf drop was high (>80%) 28 Days after Treatment (DAT) and similar across treatments. By fall (79 DAT) no green leaves existed with all treatments providing 100% control. While a few trees did show signs of resprouting it was minimal, and the amount did not differ among treatments.

One year after application (373 DAT) all treatments provided acceptable control (>92%) and did not differ ($P < 0.05$). Only GrazonNext + Remedy had no resprouting at this time, but by October (437 DAT) most treatments had no resprouts, with the exception of DuraCor alone or mixed with Remedy (one out of seven trees survived). This suggests that the additional florasulfuron in treatments 3 and 5 are increasing mortality but additional research is needed to verify this observation. Two years after treatment trends remained similar. High mortality (>90%) of autumn olive was observed for all treatments except for the treatment with DuraCor + SiteVue + Remedy Ultra, (80% mortality). The only treatment that saw a mortality of 100% was TerraVue + Vastlan.

Results confirm that foliar applications of DuraCor or TerraVue provide high levels of control of autumn olive (>90%) one year after treatment. Addition of triclopyr may be enhancing long-term mortality but further research is required on larger trees to confirm.



Notes

All treatments were applied as individual plant treatments. Herbicide solution was applied to the point of runoff on leaf surfaces.

Herbicide Treatments

Treatment Number	Treatment	Rate
1	DuraCor Activator 90	0.89% v/v 0.25% v/v
2	DuraCor Remedy Ultra Activator 90	0.89% v/v 1.43% v/v 0.25% v/v
3	DuraCor SiteVue ¹ Remedy Ultra Activator 90	0.89% v/v 0.0191% v/v 1.43% v/v 0.25% v/v
4	GrazonNext HL Remedy Ultra Activator 90	1.43% v/v 1.43% v/v 0.25% v/v
5	TerraVue Vastlan Activator 90	0.122% w/v 2.01% v/v 0.25% v/v

Herbicide Application

Date	June 30 th , 2021, 10:45am – 11:30am
Equipment	CO ₂ pressurized single nozzle sprayer (50 GPA)
Nozzles & spacing	One TeeJet 8002 nozzle
Regulator PSI	42

¹ Active ingredient for SiteVue is florypyrauxifen



Research Plot Information

Plot Dimensions	Single shrub
Design	Randomized Complete Block, 7 blocks
Soil Type	St. Charles Silt Loam
Soil Characteristics	22.1% clay, 0.5% organic matter, 6.8 pH, 9% slope

Weather Data

Weather Station	KWIMERRI45
Temperature	76.7°F – 79.8°F
Wind Speed and Direction	3.7 mph SSE – 1.4 mph SSE
Relative Humidity	81% - 71%
Cloud Cover	60%
Previous Rain Event Within 48 Hours	June 29 th , 2021, 10:24pm – 0.57 inches
When ≥ 0.25 inches of precipitation occurred after treatment	July 7 th , 2021, 5:14 pm – 0.41 inches



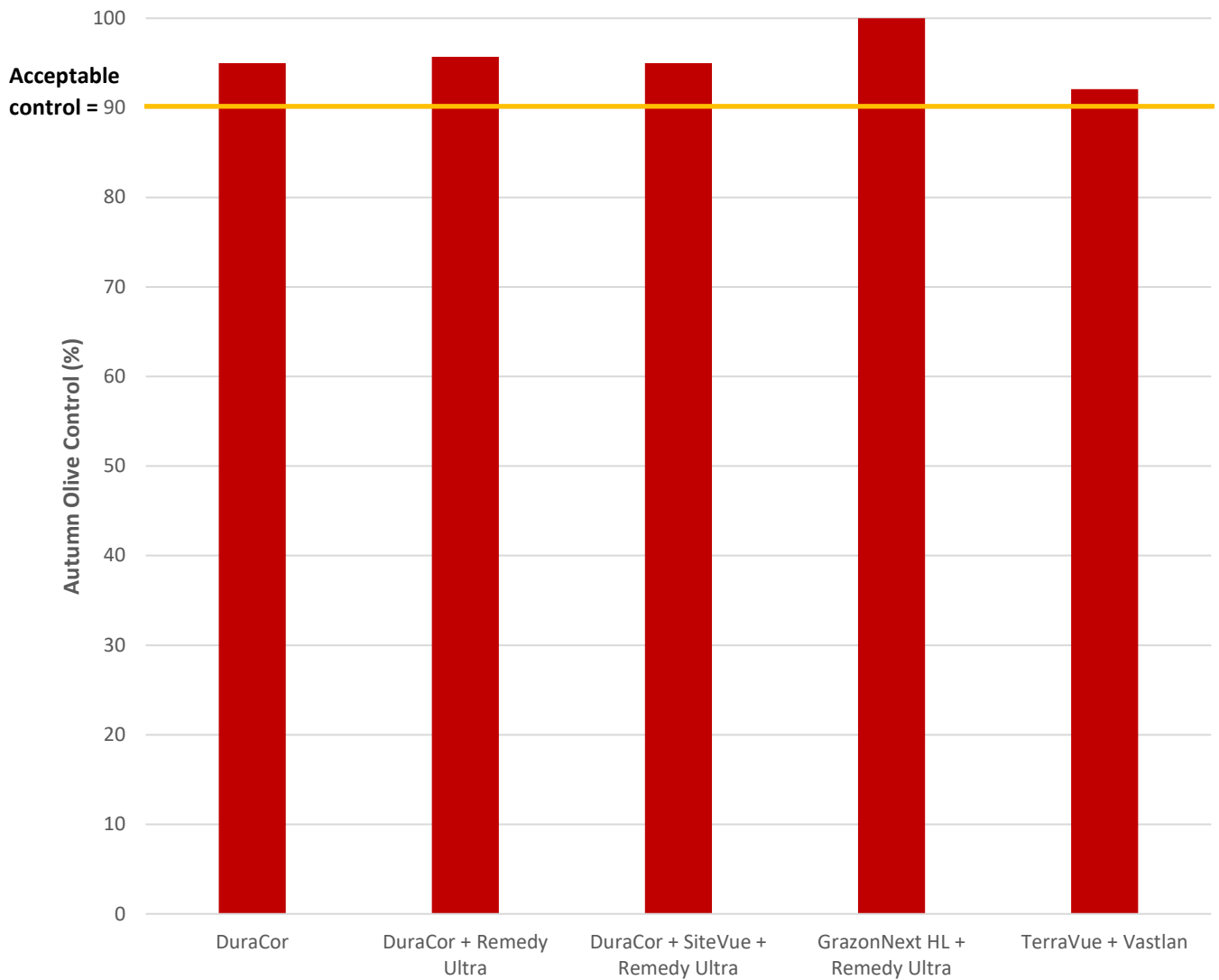
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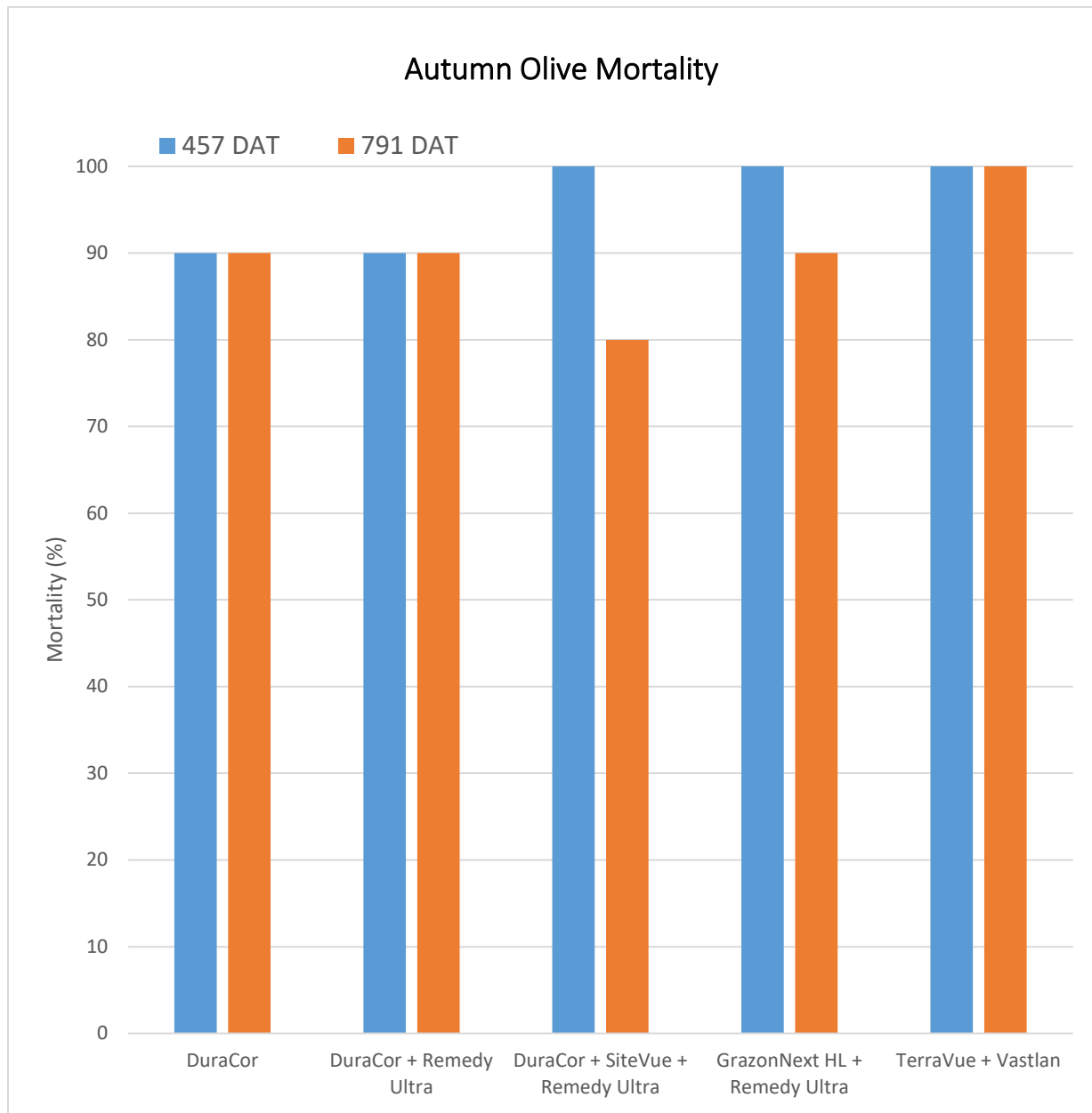




Autumn Olive Control 373 DAT - July, 9, 2022



No significant differences between treatments ($P=0.05$, LSD).



No significant differences between treatments ($P=0.05$, LSD).

Results:

15 Days Before Treatment – June 15 th , 2021				
Trt. No.	Treatment	Rate	Autumn Olive DBH (cm)	Autumn Olive Stem Count (#/shrub)
1	DuraCor Activator 90	0.89% v/v 0.25% v/v	0.61 -	2.9 -
2	DuraCor Remedy Ultra Activator 90	0.89% v/v 1.43% v/v 0.25% v/v	0.5 -	3 -
3	DuraCor SiteVue Remedy Ultra Activator 90	0.89% v/v 0.0191% v/v 1.43% v/v 0.25% v/v	0.36 -	4.9 -
4	GrazonNext HL Remedy Ultra Activator 90	1.43% v/v 1.43% v/v 0.25% v/v	0.44 -	2.7 -
5	TerraVue Vastlan Activator 90	0.122% w/v 2.01% v/v 0.25% v/v	0.68 -	3.4 -
Statistics ¹				
Least Significant Difference (LSD) P=.05			0.5785	2.15
Standard Deviation			0.5244	1.95
Coefficient of Variation (CV)			101.4	57.78
Treatment Prob(F)			0.7945	0.2627

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.



28 Days After Treatment (DAT) – July 28th, 2021					
Trt. No.	Treatment	Rate	Autumn Olive Control (%)	Autumn Olive Leaf Necrosis (%)	Autumn Olive Leaf Drop (%)
1	DuraCor Activator 90	0.89% v/v 0.25% v/v	100 -	16 -	84 -
2	DuraCor Remedy Ultra Activator 90	0.89% v/v 1.43% v/v 0.25% v/v	100 -	7 -	93 -
3	DuraCor SiteVue Remedy Ultra Activator 90	0.89% v/v 0.0191% v/v 1.43% v/v 0.25% v/v	100 -	9 -	91 -
4	GrazonNext HL Remedy Ultra Activator 90	1.43% v/v 1.43% v/v 0.25% v/v	100 -	15 -	85 -
5	TerraVue Vastlan Activator 90	0.122% w/v 2.01% v/v 0.25% v/v	100 -	13 -	87 -
Statistics					
LSD P=.05			.	12.42	12.42
Standard Deviation			0	11.26	11.26
CV			0	93.19	12.81
Treatment Prob(F)			1	0.5161	0.5161

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



79 DAT – September 17th, 2021				
Trt. No.	Treatment	Rate	Autumn Olive Control (%)	Autumn Olive Resprouts (#/shrub)
1	DuraCor Activator 90	0.89% v/v 0.25% v/v	100 -	0 -
2	DuraCor Remedy Ultra Activator 90	0.89% v/v 1.43% v/v 0.25% v/v	100 -	0 -
3	DuraCor SiteVue Remedy Ultra Activator 90	0.89% v/v 0.0191% v/v 1.43% v/v 0.25% v/v	100 -	0.3 -
4	GrazonNext HL Remedy Ultra Activator 90	1.43% v/v 1.43% v/v 0.25% v/v	100 -	0.1 -
5	TerraVue Vastlan Activator 90	0.122% w/v 2.01% v/v 0.25% v/v	100 -	0 -
Statistics				
LSD P=.05			.	0.42
Standard Deviation			0	0.38
CV			0	448.25
Treatment Prob(F)			1	0.5528

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

373 DAT – July, 9, 2022

Trt. No.	Treatment	Rate	Autumn Olive Control (%)	Autumn Olive Resprouts (#/shrub)	Shrub Alive/Dead (#alive/7 shrubs)
1	DuraCor Activator 90	0.89% v/v 0.25% v/v	95.0 -	0.4 -	1/7 = 0.1 -
2	DuraCor Remedy Ultra Activator 90	0.89% v/v 1.43% v/v 0.25% v/v	95.7 -	0.6 -	2/7 = 0.3 -
3	DuraCor SiteVue Remedy Ultra Activator 90	0.89% v/v 0.0191% v/v 1.43% v/v 0.25% v/v	95.0 -	0.4 -	2/7 = 0.3 -
4	GrazonNext HL Remedy Ultra Activator 90	1.43% v/v 1.43% v/v 0.25% v/v	100.0 -	0.0 -	0/7 = 0.0 -
5	TerraVue Vastlan Activator 90	0.122% w/v 2.01% v/v 0.25% v/v	92.1 -	0.4 -	1/7 = 0.1 -
Statistics					
LSD P=.05			13.48	1.02	0.43
Standard Deviation			12.22	0.93	0.39
CV			12.79	249.95	225.92
Treatment Prob(F)			0.8239	0.8198	0.6213



457 DAT – October, 3, 2022				
Trt. No.	Treatment	Rate	Autumn Olive Resprouts (#/shrub)	Shrub Alive/Dead (#alive/ 7 shrubs)
1	DuraCor Activator 90	0.89% v/v 0.25% v/v	0.3 -	1/7 = 0.1 -
2	DuraCor Remedy Ultra Activator 90	0.89% v/v 1.43% v/v 0.25% v/v	0.6 -	1/7 = 0.1 -
3	DuraCor SiteVue Remedy Ultra Activator 90	0.89% v/v 0.0191% v/v 1.43% v/v 0.25% v/v	0.0 -	0/7 = 0.0 -
4	GrazonNext HL Remedy Ultra Activator 90	1.43% v/v 1.43% v/v 0.25% v/v	0.0 -	0/7 = 0.0 -
5	TerraVue Vastlan Activator 90	0.122% w/v 2.01% v/v 0.25% v/v	0.0 -	0/7 = 0.0 -
Statistics				
LSD P=.05			0.85	0.27
Standard Deviation			0.77	0.24
CV			448.25	426.96
Treatment Prob(F)			0.5528	0.5867



791 DAT – August 30th, 2023

Trt. No.	Treatment	Rate	Autumn Olive Resprouts (#/shrub)	Shrub Alive/Dead (#alive/7 shrubs)
1	DuraCor Activator 90	0.89% v/v 0.25% v/v	0.4 -	1/7 = 0.1 -
2	DuraCor Remedy Ultra Activator 90	0.89% v/v 1.43% v/v 0.25% v/v	0.9 -	1/7 = 0.1 -
3	DuraCor SiteVue Remedy Ultra Activator 90	0.89% v/v 0.0191% v/v 1.43% v/v 0.25% v/v	0.5 -	1/6 = 0.2 -
4	GrazonNext HL Remedy Ultra Activator 90	1.43% v/v 1.43% v/v 0.25% v/v	0.4 -	1/7 = 0.1 -
5	TerraVue Vastlan Activator 90	0.122% w/v 2.01% v/v 0.25% v/v	0.0 -	0/7 = 0.0 -
Statistics				
Least Significant Difference (LSD) P=.05			1.52	0.37
Standard Deviation			1.38	0.34
Coefficient of Variation (CV)			312.45	286.31
Treatment Prob(F)			0.847	0.8913

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