Case Study: The Mystery of Perennial Pepperweed and Chlorsulfuron in Sierra Valley

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Previous Research

• Young, Renz, DiTomaso, Wilson, Hutchingson, Grewell Etc.

• Mowing, cultivation, grazing, tarping, burning

-Combined with herbicides

-Bud Stage

-Telar (Chlorsulfuron) -2,4-D -Glyphosate -Imazapyr

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Sierra Valley- Telar Not Working?



Honey Lake Valley- Telar Works Fine!



Honey Lake Valley 2018 Study Perennial Pepperweed Percent Control

■ 23 Months ■ 2 Months ■ 2 Months



Sierra Valley

- Trial Established in 2019
 - Feather River Land Trust Property
 - History of multiple applications of Telar on property
 - Pepperweed Persisted



Implemented Trial

- Three Replications
- RCBD
- Applied 20 gal/acre
- 10*15 ft. plots
- Applied Bud Stage June 2019

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Percent Pepperweed Control					
	12 MAT		24 MAT		
Treatment	Mean	Tukey			
2,4-D 2 qt/acre + MSO	77	A			
Telar 1.3 OZ/acre + MSO	28	ВС	м 		
 Telar 2.6 OZ/acre + MSO	40	В			
 Telar 2.6 OZ/acre + NIS	20	С			
Untreated	0	D			

Treated the Same Plots Again!

• Two Years of Max Label rate for Telar?

Telar 2.6oz 30 Days After Second Treatment

2,4-D 30 Days After Second Treatment

Telar 2.6oz 2 YAT After First Treatment 1 YAT After Second Treatment

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Percent Pepperweed Control

12 MAT		24 MAT	
Tukey	Mean	Tukey	
A	83	A	
BC	10	ВС	
В	28	В	
C	7	C	
	0		
	AAT Tukey A BC B C D	AAT 24 / Tukey Mean A 83 BC 10 B 28 C 7 D 0	

What is Happening??

- Unique soil
- 10-13 percent organic matter
- "Binding" Telar (Limited Root Bud Absorption)
 - Not an explanation for lack of translocation
- History of Telar on site (multiple applications)
 - Possible- not probable resistance.
 - Starting pot study 2021 for initial resistance screening
 - Population form Sierra Valley
 - Population From Honey Lake Valley



Interested in Your Experiences!

• Have you had failures of Telar/chlorsulfuron on Pepperweed in your area?

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