

Weed Control in Western Oregon

Kyle Roerig, Andrew Hulting and Caio Brunharo, Oregon State University

During the 2019 growing season, crop safety and herbicide efficacy trials were conducted in commercially grown peppermint fields in western Oregon. Our group also participated in a multi-state MIRC funded weed research project. The primary objectives of these trials were to provide data in support of the registration of

pyroxasulfone (Zidua) and associated tank mixes and to evaluate the use of several protoporphyrinogen oxidase (PPO) inhibitor herbicides; carfentrazone (Aim), flumioxazin (Chateau) and saflufenacil (Sharpen) at various application timings. Pyridate (Tough) treatments were also included in studies to continue

Table 1. Pyroxasulfone tankmix partners in single cut peppermint, Linn County, Oregon.

Treatment ¹	Rate lb ai/a ²	Peppermint Injury			Yield 8/8/19 lb oil/a
		3/19/19	4/2/19	5/30/19	
		-----	%	-----	
untreated		0	0	0	124
terbacil	1.2	0	0	0	134
+ paraquat	0.5				
pyroxasulfone	0.09	0	0	0	108
pyroxasulfone	0.18	0	0	0	113
saflufenacil	0.0445	0	0	0	120
+ MSO	1.0				
+ AMS	1.67				
flumioxazin	0.128	0	0	0	117
sulfentrazone	0.375	0	0	0	107
pyroxasulfone/flumioxazin	0.339	0	12	0	123
pyroxasulfone/carfentrazone	0.2035	0	0	0	109
pyroxasulfone	0.09	0	10	0	114
+ saflufenacil	0.0445				
+ MSO	1.0				
+ AMS	1.67				
pyroxasulfone	0.18	0	0	0	116
+ oxyfluorfen	0.5				
+ paraquat	0.5				
pyroxasulfone	0.18	0	5	0	116
+ oxyfluorfen	0.5				
+ paraquat	0.5				
+ saflufenacil	0.0445				
+ MSO	1.0				
+ AMS	1.67				
LSD P=0.05		NS ³	NS	NS	NS

¹Application date: 1/31/19; ²The rate is %V/V for MSO; ³Not significant

our on-going evaluation of this herbicide for use in peppermint. Many of the herbicides and use patterns discussed in this report are not registered for use in peppermint in Oregon. For a current list of registered herbicides and uses refer to the mint chapter in the Pacific Northwest Weed Management Handbook (<https://pnwhandbooks.org/weed>).

Pyroxasulfone Tankmix Partners in Peppermint

A trial was conducted in Linn County to evaluate possible tankmix partners with pyroxasulfone (Zidua), a pre-emergence herbicide that our group has been evaluating for several growing seasons in mint production systems. The peppermint system chosen was single cut with herbicide treatment on January 31, 2019 and mint harvest on August 8, 2019. Terbacil (Sinbar), saflufenacil (Sharpen), flumioxazin (Chateau), sulfentrazone (Spartan), oxyfluorfen (Goal) and paraquat (Gramoxone), in addition to premixes of pyroxasulfone/flumioxazin (Fierce) and pyroxasulfone/carfentrazone (Anthem Flex), were evaluated. No statistical differences were observed in terms of crop injury (no visual injury as of May 2019) and oil yield (Table 1). We were not able to evaluate weed control because of the low weed pressure in the chosen site. Therefore, we focused our efforts on evaluating crop safety of the selected herbicides on the crop. Mean oil yield was the highest for terbacil + paraquat, followed by pyroxasulfone/flumioxazin, and saflufenacil, with no crop injury for most of the herbicide treatments.

(continued on page 2)