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 Always consult a current label prior to making any pesticide application.

### Mint Herbicide Efficacy - Endeavor, WI - 2019

Jed B. Colquhoun / Daniel J. Heider / Rich A. Rittmeyer  
 University of Wisconsin Horticulture Department

Location: Gumz Muck Farm - Endeavor, WI

Plot Information:

Soil Type: Houghton Muck  
 Variety: Black Mitcham Peppermint  
 Date Planted: established meadow mint  
 Row Spacing: n/a (meadow mint)  
 Plant Spacing: n/a (meadow mint)  
 Date Harvested: 8/17/19 (center 2.5 ft strip of plot)  
 Plot Size-Design: 6' x 20', 3 reps  
 Rating Dates: 6/6, 6/19, 7/8  
 Phytotoxicity Rating Scale: 0% = no crop injury, 100% = dead crop plants  
 Weed Control Rating Scale: 0% = no control, 100% = complete control

Application Equipment: Backpack CO2 pressure sprayer. GPA 20, PSI 27, MPH 3.3,  
 Nozzle: XR8003VS, Nozzle spacing 18", Height 18".

Herbicide Application Data:

Date		5/17/19	6/11/19
Time		11:00 AM	9:00 AM
Treatment		Dormant	3-wk POST
Soil Moisture	SF	dry	dry
	1"	moist	dry
	3"	moist	dry
Soil Temp (F°)	SF	56	75
	3"	53	60
Air Temp (F°)		53	72
Wind (mph - direction)		5-8 N	0
%RH		36%	46%
Sky (% clouds)		80%	50%
Crop Stage		-----	
Weed & Size		-----	

*Summary:* In general the 2019 growing season was severely delayed by cool, wet weather. Although initial injury was observed with almost all herbicide treatments, by July 8 crop injury was minimal across the study area. This is similar to observations across many years of research and also similar to what would be expected with non-tilled mint in a burndown treatment. There were no differences among treatments in hay yield per acre, but as is often the case in this crop, moderate mint *injury was positively correlated with the concentration of oil in the hay.* Exceptions include where Spartan, Sharpen or Prowl H2O were applied alone and where Zidua and Spartan were tank-mixed, where the oil concentration didn't overcome low hay yield. Weed control was excellent in all treatments with the exception of reduced redroot pigweed control where Prowl H2O was applied alone, as would be expected. It should be noted, however, that the redroot pigweed at this site was still susceptible to terbacil, which is not the norm in Wisconsin mint.

Weed Abbreviations

COLQ = Common Lambsquarter      COPU = Common Purslane  
 RRPW = Redroot Pigweed          LASW = Ladythumb Smartweed

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Trt No.	Treatment Name	Rate	Unit	Appl Timing	6/6/2019 % Injury	6/19/2019 % Injury	% Weed Control 6/19/19			
					COLQ	RRPW	COPU	LASW		
1	UTC - Weedy				3.3	6.7	96.7	50	97.5	100
2	Sinbar	0.5 lb ai/a		Dormant	0 c	10.2 ab	100 a	97.8 abc	100 -	100 -
3	Zidua	0.09 lb ai/a		Dormant	1.2 bc	27.5 ab	98.3 ab	94.8 bc	100 -	100 -
4	Zidua	0.18 lb ai/a		Dormant	0 c	3.4 b	100 a	95 bc	100 -	100 -
5	Sharpen	0.045 lb ai/a		Dormant	0 c	1.9 b	100 a	100 a	100 -	100 -
	MSO	1 % v/v		Dormant						
	AMS	2 % v/v		Dormant						
6	Spartan	0.3 lb ai/a		Dormant	5.1 abc	13 ab	100 a	100 a	100 -	100 -
7	Prowl H2O	1.9 lb ai/a		Dormant	1.8 bc	12.4 ab	96.7 b	92.2 c	100 -	100 -
8	Zidua	0.09 lb ai/a		Dormant	9 ab	25.2 ab	100 a	100 a	100 -	100 -
	Sharpen	0.045 lb ai/a		Dormant						
	MSO	1 % v/v		Dormant						
	AMS	2 % v/v		Dormant						
9	Zidua	0.09 lb ai/a		Dormant	37.1 a	50 a	100 a	100 a	100 -	100 -
	Sinbar	0.5 lb ai/a		Dormant						
10	Zidua	0.09 lb ai/a		Dormant	8.2 ab	28.5 ab	100 a	99.4 ab	100 -	100 -
	Spartan	0.3 lb ai/a		Dormant						
11	Zidua	0.09 lb ai/a		Dormant	30.8 a	39.7 ab	98.3 ab	98.9 abc	100 -	100 -
	Prowl H2O	1.9 lb ai/a		Dormant						
12	Spartan	0.3 lb ai/a		Dormant	0 c	10.2 ab	100 a	99.4 ab	100 -	100 -
	Zidua	0.09 lb ai/a		3-wk POST						

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

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Trt No.	Treatment Name	Rate	Unit	Appl Timing	7/8/2019 % Injury	Yield 8/17/2019		
					lb hay/A	ml oil/lb hay	lb oil/A	
1	UTC - Weedy				3.3	23058	0.57	25.6
2	Sinbar	0.5 lb ai/a		Dormant	0 -	22564 -	0.74 ab	33.1 ab
3	Zidua	0.09 lb ai/a		Dormant	1.2 -	20009 -	0.69 ab	26.6 ab
4	Zidua	0.18 lb ai/a		Dormant	0 -	21577 -	0.66 ab	28.6 ab
5	Sharpen	0.045 lb ai/a		Dormant	0 -	21490 -	0.55 b	23.7 b
	MSO	1 % v/v		Dormant				
	AMS	2 % v/v		Dormant				
6	Spartan	0.3 lb ai/a		Dormant	1.2 -	17511 -	0.66 ab	23.4 b
7	Prowl H2O	1.9 lb ai/a		Dormant	0 -	20560 -	0.60 b	23.4 b
8	Zidua	0.09 lb ai/a		Dormant	1.8 -	21373 -	0.84 a	35.7 a
	Sharpen	0.045 lb ai/a		Dormant				
	MSO	1 % v/v		Dormant				
	AMS	2 % v/v		Dormant				
9	Zidua	0.09 lb ai/a		Dormant	0 -	20996 -	0.68 ab	28.4 ab
	Sinbar	0.5 lb ai/a		Dormant				
10	Zidua	0.09 lb ai/a		Dormant	1.2 -	18731 -	0.66 ab	24.2 b
	Spartan	0.3 lb ai/a		Dormant				
11	Zidua	0.09 lb ai/a		Dormant	1.2 -	21170 -	0.73 ab	30.4 ab
	Prowl H2O	1.9 lb ai/a		Dormant				
12	Spartan	0.3 lb ai/a		Dormant	1.2 -	20735 -	0.65 ab	25.8 ab
	Zidua	0.09 lb ai/a		3-wk POST				

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