

Evaluation of Postemergence Herbicides on Peppermint

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Abstract

A single trial was conducted in a commercial field of established peppermint grown for oil to evaluate three postemergence herbicides for peppermint tolerance. All three herbicide treatments resulted in severe peppermint injury. None of the herbicides tested offer a new solution for postemergence weed control in peppermint.

Introduction

Pyridate (Tough[®], formerly Novartis) herbicide was a very effective and safe postemergence herbicide used in peppermint. Unfortunately, pyridate is no longer manufactured and a suitable replacement for postemergence weed control has not been found. The objective of this trial was to evaluate three postemergence herbicides for peppermint tolerance.

Methods and Materials

A single trial was conducted in a commercial field of established peppermint near Powell Butte, Oregon. Pyraflufen (ET[®], Nichino America) was applied April 28, 2006 to mint that was 4 inches in height. Cloransulam (FirstRate[®], Dow) and diflufenzopyr plus dicamba (Distinct[®], BASF) were applied May 25, 2006 to mint that was 10 inches in height.

Plots were 7-ft by 25-ft with 4 replications arranged as randomized complete blocks. Treatments were applied with a CO₂ backpack sprayer delivering 20 gal/acre operating at 20 psi and 3 mph. Peppermint injury was determined by making visual evaluations using a 0 to 100 percent standard rating scale, with 0 percent being no injury. All the plots were hand harvested on August 4. The samples were air dried in burlap sacks until August 10 when they were steam distilled in a small-scale still at the Hyslop Research Farm near Corvallis, Oregon to measure the oil yield.

Results and Discussion

The three herbicide treatments resulted in severe peppermint injury, but differences in oil yield were not detectable (Table 1). The injury observed would be unacceptable for use in commercial production and it seems unlikely that lower rates of these herbicides would be useful for controlling weeds. None of the herbicides tested offer a new solution for postemergence weed control in peppermint.

Table 1. Peppermint injury and oil yield following herbicide applications near Powell Butte, Oregon, 2006.

Treatment [†]	Rate (lb ai/ac)	Peppermint injury			Oil yield lb/A
		May 5	June 3	July 6	
		----- % -----			
Pyraflufen	0.0065	35	28	5	59
Cloransulam [‡]	0.0105	---	19	14	75
Diflufenzopyr + dicamba [‡]	0.0875	---	35	43	61
Check	---	0	0	0	71
LSD (P = 0.05)		---	---	---	NS

[†] Pyraflufen (ET) was applied April 28, cloransulam (FirstRate) and diflufenzopyr + dicamba (Distinct) were applied May 25.

[‡] Treatments included non-ionic surfactant at 0.25 percent v/v.