CALIFORNIA LEAFY GREENS RESEARCH PROGRAM

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EVALUATING NEW WEED MANAGEMENT SYSTEMS FOR FRESH MARKET SPINACH

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ABSTRACT

Few herbicides are available for use in spinach and more effective weed control tools are needed. Results reported here indicate that 0.5 to 1 pint/A Spin-Aid herbicide applied postemergence to 2-leaf spinach provided good weed control and caused slight or no injury to spinach. Spinach yields were not reduced by Spin-Aid. It is recommended that Spin-Aid be evaluated commercially to see if it is acceptable to the industry.

OBJECTIVES

The purpose of this research was to evaluate postemergence applications of Spin-Aid in fresh market spinach. Previous work has found that Spin-Aid applied late in the day resulted in less injury to spinach than early morning applications. This is probably because spinach is less prone to injury from Spin-Aid when application is followed by several hours of darkness which allows time for spinach enzymes to degrade the herbicide.

PROCEDURES

Two trials were performed on commercial spinach fields in 2015: Trial 1 near Hollister, and Trial 2 near Salinas.

Trial 1 was initiated June 29, 2015, the spray date was July 9, weed counts and injury ratings (0= safe; 10=dead) were taken July 19 and harvest was July 30 with a crop maturity of 32 days and exactly 21 days after the Spin-Aid application. Treatments included Spin-Aid at 0.5 and 1 pints/A and a nontreated control. Treatments were replicated 3 times. Trial 2 was initiated August 31, 2015 with the planting of 'Carmel' spinach. The spray date was September 11, injury ratings were taken September 18 and harvest was September 25 with a crop maturity of 26 days and exactly 14 days after the Spin-Aid application. Treatments included Spin-Aid at 0.5 and 1 pints/A and a nontreated control. Treatments replicated 3 times, were applied both in the morning and evening to determine if evening was safer to spinach.

RESULTS AND DISCUSSION

In Trial 1, weed control with Spin-Aid was excellent (Table 1). Spinach was slightly injured by 1 pt/A Spin-Aid, but not the 0.5 pint rate. There was no significant effect on spinach yield by either Spin-Aid rate. In Trial 2, spinach was not injured by any Spin-Aid treatment, nor was there any significant effect on spinach yield by any treatment including time of day (Table 2). We recommend that Spin-Aid be evaluated in commercial applications.

Table 1. Weed densities, spinach injury estimates and spinach yields at San Juan Bautista, CA July 2015.

Treatment	Pints/A	Black nightshade	Purslane	Total weeds	Spinach injury	Spinach yield lbs/A
Spin-Aid	0.5	0	0	0	0	15,853 a
Spin-Aid	1	0	0	0	1.7	14,250 a
Control	0	2.3	1.7	4	0	16,388 a
P value		0.0015	0.0055	<0.0000	0.0123	0.79

Table 2. Spinach injury estimates and spinach yields at Salinas, CA September 2015.

Treatment	Pints/A	Spinach injury	Spinach yield lbs/A
Spin-Aid AM	0.5	0	20,121 a
Spin-Aid AM	1	0	17,094 a
Spin-Aid PM	0.5	0	17,450 a
Spin-Aid PM	1	0	19,409 a
Control	0	0	17,845 a
		1.0 ns	0.74 ns