

CALIFORNIA LEAFY GREENS RESEARCH PROGRAM

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EVALUATION OF METAM SODIUM FOR CONTROL OF LETTUCE DROP AND WEEDS IN LETTUCE

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ABSTRACT

Metam sodium at 75 GPA was applied by shank and drip chemigation in December 2011 in an area previously infested with *Sclerotinia minor* (lettuce drop). Lettuce was planted into the trial site May 2012 and again August 2012. Disease incidence was recorded in both plantings and it was especially high in the August plantings. Weed densities were recorded in the May lettuce planting and numbers of infested plants were recorded for both lettuce plantings. The data indicated that the metam sodium treatments suppressed lettuce drop as well as weeds.

OBJECTIVE

Evaluate shank- and drip-applied metam sodium for control of lettuce drop and weeds.

METHODS

A multi-year (2011-13) lettuce drop and weed control study was initiated June 2011 at the Spence USDA research farm at Salinas, CA. The site is a Chualar sandy loam soil and plots were three 40-in wide beds by 60 ft long. Treatments were replicated four times and arranged in a randomized complete block design.

The trial area was infested with *Sclerotinia minor* sclerotia, and then head lettuce (cv. Hallmark) was planted June 29, 2011. The lettuce was allowed to mature and infest the site with sclerotia produced on plants infected by *S. minor*.

Medium flow drip tape (0.50 gal/min/100 feet) was installed at the site for the metam sodium drip treatment plots, prior to application. Metam sodium was shank applied 5-in deep at 72.2 GPA (Vapam HL) Dec. 5, 2011 and the drip application was made Dec. 6, 2011 at 75.0 GPA (Sectagon 42) through the drip line, in 1.5 acre inches of water during a 3.3 hour interval. A nontreated control was also included. Following the metam sodium applications, the test plot was left fallow until May 2012.

Romaine lettuce (cv. Sunbelt) was planted on May 1, 2012 and again on August 2, 2012. Lettuce drop evaluations were made at approximately one week intervals between thinning and maturity. Yield data were collected from the second crop only. Data were analyzed using SAS.

New medium flow drip tape (0.50 gal/min/100 feet) was installed in the metam sodium drip treatment plots. Metam sodium (Vapam HL for both treatments) was shank applied 5-in deep at 75.0 GPA Dec. 13, 2012 and the drip application was made Dec. 14th at 75.0 GPA through the drip line in 1.5 acre inches of water during a 3.3 hour interval. Following the metam sodium applications the test plot was left fallow until May 6, 2013 when lettuce was again planted in the trial site. Results from the 2013 plantings will be forth coming.

RESULTS

Metam sodium applied by shank and drip application methods suppressed weeds in the first crop and lettuce drop incidence in the second crop (Table 1). Yields were higher in both metam sodium treatments compared to the nontreated control.

Table 1. Weed densities in the first crop and lettuce drop incidence in the first and second lettuce crops and lettuce yield in the second crop following fallow applications of metam sodium applied by drip chemigation or shank application.

Treatment	Weeds 1,000/A	Lettuce drop incidence		Lettuce yield 2 nd crop	
		1 st 7/17/12	2 nd 10/23/12	No. 1,000/A	Weight 1,000 Lbs./A
Metam sodium shank	554 b	9.8	58.0 b	11.8 a	13.4 a
Metam sodium drip	727 b	12.8	65.6 b	12.2 a	13.2 a
Control	1997 a	17.2	93.7 a	5.6 b	4.6 b

CONCLUSIONS

The results of this test indicate that lettuce drop was suppressed by metam sodium both shank and drip methods. The disease pressure in this test was very high, and lower metam sodium rates could probably be used in commercial settings.