

Section VIII

Mites & Sap-sucking Insects

CONTROL OF SPIDER MITES IN DRY BEANS

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The objective of this experiment was to evaluate spray coverage and control of spider mites comparing five different commercial spray applicators. Large replicated plots were established in a commercial, large, lima bean field near Stockton, California. Kelthane® miticide was applied at the label rate recommendation of 3 pts/acre. The five treatments were as follows:

The Grower Sprayer was a ground unit with over the top and drop nozzles. The air boom utilized a fan to shear droplets and high air delivery to penetrate into plant canopy. The Spray Coupe and PTG Electro were two different types of electrostatic low volume sprayers utilizing an ion-charged spray solution. A helicopter was provided by the local crop dusting service.

The results were measured in two parts. One measurement evaluated the spray coverage to the bean by utilizing water sensitive spray cards placed in the plant. The other measurement was monitoring spider mite counts for five weeks after applications were made to evaluate control.

Summary: Spray coverage as measured by the water sensitive cards showed varying degrees of leaf coverage as related to spray volume and type of equipment used. All ground applicators used controlled the mite population. The helicopter which showed a trend of higher mite population by the third week evaluation could not be analyzed statistically with other spray treatments since it was not in the replicated block design.

Conclusion: Acceptable spider mite control was achieved with all ground application equipment with spray volumes ranging from 10-25 gpa and beginning treatments when mite populations are low and plant size is best for complete foliage coverage and spray penetration (8"-12" tall). The air application may not be considered the best initial option for mite control when field conditions are accessible to ground equipment, this in part, due to the inability of the aerial spray solution to reach the lower canopy where mites first initiate.

Twospotted Spider Mites Per 50 Leaves-Farmington, CA-1997

Treatments	0 Day Jun 12	7 Day Jun 19	14 Day Jun 26	28 Day Jul 10	35 Day Jul 17	42 Day Jul 24
Untreated	16.5a	9.8a	10.8a	33.0a	116.0a	587.8a
Spray Coupe	12.5a	3.3b	3.8b	3.3bc	24.0b	108.3b
Air Boom	16.8a	2.0b	2.0b	2.5bc	4.0b	47.5b
Grower	18.3a	3.3b	2.5b	6.8bc	5.8b	26.8b
PGT Electro	12.0a	4.5b	1.5b	1.8c	~3.5b	23.0b
Helicopter		2.0	3.3	12.5	38.0	125.0

Means within a column followed by the same letter are not significantly different (P=0.10; LSD)