

Section VI
Biological and Cultural Controls

COLORADO POTATO BEETLE CONTROL DEMONSTRATION TRIALS
USING FOIL BIO INSECTICIDE, 1989

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Hazelton Plot: A field of 'Russet Burbank' potatoes near Hazelton, ID was chosen as the test site. The south edge of the field had adequate populations of Colorado potato beetle larvae for this test. Two 5 acre plots were established along the edge of the field. Each plot was approximately 150 ft wide by 1/8 mile long. Five areas in each plot with representative larval populations were selected for counting beetles and estimating percent defoliation. Each counting area consisted of 10 consecutive hills of potatoes.

On 8 Jul the plots were marked and pre-treatment beetle counts and defoliation estimates were made. Later the same day, the plots were sprayed using an "Eagle" aircraft which delivered 10 gal finished spray/acre. Foil was applied at the rate of 4 qt/acre with 5 cc of Bond sticker/gal of spray. The commercial standard plot for comparison was treated with Ambush (permethrin) at the rate of 0.1 lb AI/acre. Post-treatment counts were made 6, 13, and 23 d after application. After the 23 d count, the plots were oversprayed with permethrin to avoid further defoliation by the adults.

Control data are presented in the table. The commercial standard reduced larval populations virtually to zero. Foil reduced larval populations by about 80% by the 6 d post-treatment count. The percent defoliation in both the Foil and permethrin plots was essentially stopped at the 6 d count and had only slightly increased at the 13 d count. In both cases, the increase was due to a second generation of adults emerging and feeding on the foliage. This is well demonstrated at 23 d post-treatment when percent defoliation had increased by about 10% in both plots.

Both treatments gave good control of Colorado potato beetle larvae. The Foil application could have been more efficacious if applied one wk earlier. The application was applied, however, at the time when normal potato beetle larval applications are made.

Treatment	Mean no. CPB/10 hills and percent defoliation			
	Days after application			
	Pre-treat	6	13	23
AMBUSH:				
AD	1.6	0.0	20.6	85.4
S	48.4	0.4	0.0	0.0
L	113.6	0.2	1.6	4.6
% Defoliation	25.0	25.0	27.0	36.0
FOIL:				
AD	0.2	0.0	5.0	71.6
S	41.8	7.2	5.0	0.0
L	49.8	4.8	6.4	3.0
% Defoliation	10.0	10.0	13.0	25.0

AD = adults; S = small larvae; L = large larvae.