Section VII
Forage & Seed Insects

COLORADO POTATO BEETLE CONTROL WITH BEAUVARIA AND BACILLUS THURINGIENSIS SPRAYS, 1997

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Experimental plots were established on the UI Research and Extension Center, Kimberly, Idaho. Potatoes were planted on 28 Apr and irrigated by solid set sprinkler. The soil type was Portneuf silt loam. Four treatments and one untreated check plot were replicated four times in a RCB design. Individual plots were 4 rows (36 inch row spacing) wide by 25 ft long with 5 ft alleyways separating the plots. On a semi-weekly basis, adults, large larvae (3-4 instar), small larvae (1-2 instar), and egg masses were counted and percent defoliation estimates were made from whole plant inspections of the center 5 hills of the middle 2 plot rows. All test treatments were broadcast applied on 1 Jul as a S using a backpack CO_2 sprayer at a rate of 20 gal per acre (30 psi, with 4, 10X hollow cone nozzles). An additional application of Mycotrol, Mycotrol + M-Track and M-Track was made on 28 Jul. Data were analyzed using ANOVA and Newman-Keuls multiple means comparison.

There was a significant reduction from the untreated check in adult CPB on 30 Jul with the beauvaria + Bt treatment. There were significant reductions of large larvae with Bt alone and the beauvaria + Bt treatments on 1 Jul. There was also a reduction on large larvae from the untreated check with beauvaria + Bt on 9 Jul and 16 Jul. On 16 Jul there was also a reduction in large larvae numbers from the untreated check with beauvaria alone. There was low mortality of small larvae with treatments in this study. There was a significant reduction of defoliation with the beauvaria + Bt and Bt treatments that indicates reduced feeding by adults and larvae.

		Adults						
Treatment/formulation	Rate	Jun 20	Jul 1	Jul 9	Jul 16	Jul 30	Aug 5	Aug 11
Check	-----	8.75 a	4.25 a	1.50 a	8.25 a	195.50 b	47.25 a	4.25 a
M-Trak	4 qt/acre	8.50 a	3.50 a	2.50 a	10.50 a	144.75 ab	64.25 a	3.75 a
M-Trak + Mycotrol 2F	4 qt/acre + 0.5 qt/acre	9.00 a	3.00 a	3.25 a	5.00 a	69.25 a	83.75 a	4.50 a
Mycotrol 2F	0.5 qt/acre	8.50 a	1.50 a	1.75 a	13.75 a	122.00 ab	52.25 a	5.75 a

		Large Larvae			
Treatment/formulation	Rate	Jun 20	Jul 1	Jul 9	Jul 16
Check	-----	9.00 a	239.25 b	154.25 b	109.50 b
M-Trak	4 qt/acre	8.00 a	88.75 a	128.25 ab	49.50 ab
M-Trak +	4 qt/ acre +	6.50 a	104.00 a	70.75 a	10.75 a
Mycotrol 2F	0.5 qt/acre				
Mycotrol 2F	0.5 qt/acre	6.50 a	235.75 b	117.25 ab	31.00 a

		Small Larvae			
Treatment/formulation	Rate	Jun 20	Jul 1	Jul 9	Jul 16
Check	-----	315.25 a	117.75 a	85.50 a	24.25 a
M-Trak	4 qt/acre	289.25 a	104.75 a	77.75 a	31.00 a
M-Trak +	4 qt/acre +	310.00 a	106.75 a	35.75 a	12.75 a
Mycotrol 2F	0.5 qt/acre				
Mycotrol 2F	0.5 qt/acre	365.75 a	111.25 a	51.00 a	16.50 a

		Egg Masses			
Treatment/formulation	Rate	Jun 20	Jul 1	Jul 9	Jul 16
Check	-----	26.00 a	7.50 a	2.25 a	0.75 a
M-Trak	4 qt/acre	15.75 a	5.50 a	2.75 a	1.00 a
M-Trak +	4 qt/acre +	17.25 a	4.75 a	1.75 a	1.00 a
Mycotrol 2F	0.5 qt/acre				
Mycotrol 2F	0.5 qt/acre	18.25 a	6.25 a	1.25 a	0.25 a

		% Defoliation			
Treatment/formulation	Rate	Jun 20	Jul 1	Jul 9	Jul 16
Check	-----			48.75 b	61.25 b
M-Trak	4 qt/acre			21.25 a	12.50 a
M-Trak +	4 qt/acre +			15.00 a	8.75 a
Mycotrol 2F	0.5 qt/acre				
Mycotrol 2F	0.5 qt/acre			42.50 b	46.25 b

Means within a column with the same letter are not significantly different (P = 0.05; Student-Newman-Keuls).

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