

### Section III

#### Root-Feeding Coleoptera and Symphylans

#### SUGARBEET ROOT MAGGOT CONTROL, 1992

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Experimental plots were established approximately ten miles east of Hazelton, Id. The soil type was Portneuf silt loam and the plots were furrow irrigated. Nine treatments and an untreated check were replicated six times in a randomized complete block design. Individual plots were six rows (22 inch row spacing) by 30 feet. Alleys were cut between plots prior to harvest to give 25 ft. of row per plot. On 4 April modified in-furrow applications of Temik, Counter and Tenax were made at plant including an at planting sidedress application of Temik. Temik was placed 2" to the water side of the furrow and 2-3" deep. On 13 May, post-emergence applications of Temik and Counter were made. Temik was knifed in a narrow band as in the planting application and Counter was applied as a 4" band over the row and chain incorporated. Rapeseed meal was applied 14 May by hand in a 3-4" band over the row and hand raked to incorporate with the soil. Post emergence applications were made just prior to irrigation. On 25 July five adjacent beets were dug from the middle of rows two and five to give 10 beets per plot for rating root maggot damage. The beets were washed and rated using the following rating schemes: 5 Point: 0= no scars; 1= 1-4 small scars of pinhead size; 2= 5-10 small scars to 3 large scars; 3= more than 3 large scars; 4= 4, 1/2 to 3/4 root area blackened by scars; 5= more than 3/4 of root area damaged, dying beet: 7 Point: 0= no damage; 1= 1-4 small scars of pinhead size; 2= 5-10 small scars, or up to 3 larger scars; 4= 4 large scars to 1/4 root surface covered with scars; 5= 1/4 to 1/2 root surface covered with scars; 6= 1/2 to 3/4 root area blackened by scars; 7= more than 3/4 root surface blackened, dying beet. Sugar beets were machine topped and harvested for untared weights on 15 October. Data were analyzed using ANOVA and LSD's.

There was significant damage reduction by Temik applied in-furrow at plant, post-emergence sidedress application, and the split application of Temik in-furrow at plant and post-emergence sidedress with both the 5 point and 7 point rating systems. There was no significant reduction of damage by any treatment of Counter, Tenax or the rapeseed treatment. All treatments except the post-emergence Counter treatment, showed harvest weights greater than the untreated check but, only the at-plant applications of Temik and Counter were significantly greater. Due to unusually high insect pressure (root maggot and sugarbeet crown borer), severe losses in stand (up to 50% across the field) were observed this year. A stand analysis showed that stand counts in the at-plant applications of Temik, Counter and the high rate of Tenax at-plant were all significantly greater than the untreated check. We think that the planting application of Counter provided good yields and stand counts due to crown borer control.



Treatment	Rate	Stand Count Mean # per plot	Damage Analysis per 10 beets		Harvest Weight per 50 ft of row
			5 pt	7 pt	
Untreated Check	—	35.0 ab <sup>1</sup>	27.8 de	38.5 de	77.1 ab
Temik 15G	2.1 MIFAP	45.7 c	24.0 bc	29.7 bc	90.1 bcd
Temik 15G	2.1 PLNT (SHANK)	55.3 d	31.0 e	44.3 e	104.9 d
Temik 15G	1.5 MIFAP + 1.5 PE (SHANK)	34.5 ab	20.7 ab	23.7 ab	85.2 abcd
Temik 15G	2.1 PE (SHANK)	39.0 abc	17.2 a	19.5 a	87.0 abcd
Counter 20G	2.0 MIFAP	45.2 c	27.2 cd	35.5 cd	97.8 cd
Counter 20G	2.0 PE (BAND)	33.0 a	26.8 cd	36.5 d	70.0 a
Tenax 20G	6 oz/1000 ft MIFAP	43.5 bc	26.7 cd	36.0 cd	88.1 abcd
Tenax 20G	8 oz/1000 ft MIFAP	44.8 c	27.8 de	40.2 de	81.8 abc
Rapeseed	100 lb/A	40.7 abc	28.8 de	40.3 de	80.9 abc

<sup>1</sup>Means within a column followed by the same letter are not significantly different at the P = 0.05 level, LSD's.