

Section VI  
Soil Arthropods

EVALUATION OF CGA 293343 FOR CONTROL OF SUGARBEET WIREWORMS,  
*LIMONIUS CALIFORNICUS*, IN WATERMELONS

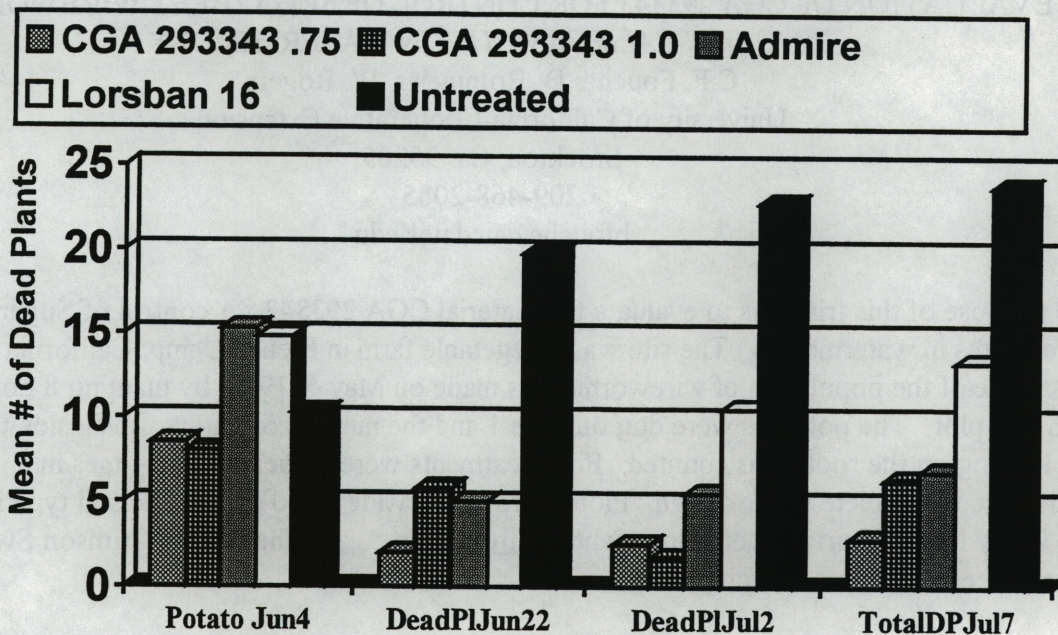
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The purpose of this trial was to evaluate the material CGA 293343 for control of Sugarbeet Wireworms in watermelons. The site was a vegetable farm in French Camp, California. A presample of the population of wireworms was made on May 6, 1998, by planting 8 potatoes in each test plot. The potatoes were dug on June 1 and the number of wireworms inside the potato and feeding on the roots was counted. Five treatments were replicated four times in a randomized, complete block design. Plots were 1 row wide by 30' long. The soil type is Dinuba fine sandy loam. Thirty watermelon plants, *Citrullus lanatus*, of the variety Crimson Sweet, were spaced 12" apart in each plot.

On June 10, 1998, the treatment materials were mixed in 20 liters of water in plastic tanks. Then 150 ml of dilute solution was applied to the base of each watermelon plug at time of transplanting. In the untreated controls, only water was applied. Following the application, the grower maintained the growth of the plants with sprinkler irrigation. On June 22 and July 7, the weak and dead watermelon plants were dug with a 3" diameter soil auger. A volume of 1200 ml soil near the watermelon plug was sifted with 17-mesh window screen and wireworm larvae were counted.

Counts of wireworms were highly variable due to the rapid death of the transplants. By the time the sample was dug the roots were dry and often no larvae were present. Plants that were not completely desiccated often were associated with wireworm larvae. It appears that the high mortality of untreated plants occurred because they could not develop a root system able to reach moist soil due to feeding by wireworms. By the fourth week, in the untreated control plots, over 75% of the plants died due to root feeding by the sugarbeet wireworm. Both rates of CGA 293343 and Admire were able to provide a high level of protection from wireworm feeding for up to 4 weeks after the application. Lorsban provided 2 weeks of protection but the number of dead plants increased substantially by the 4<sup>th</sup> week after the application. Plants were observed through August but no more plant mortality occurred in the test plot. No aphids were present in the test plots this year.

## Wire Worm Control 1998 In Watermelons



Material	Formulation	Gm ai/100 meters	Mean* No. of Wireworms in presample Jun 1	Mean* No. of Dead Plants Jun 22	Mean* No. of Dead Plants Jul 7	Mean* No. of Wireworms Jun 22 + Jul 7
CGA 293343	SC2	0.75	8.5a	2.0a	2.8a	1.5a
CGA 293343	SC2	1.0	8.0a	1.3a	1.7a	5.7a
Admire	FS2	2.8	15.3a	5.0a	6.8ab	3.3a
Lorsban	EC4	17.0	14.8a	5.0a	13.3b	11.3a
Untreated Control	---	---	10.3a	19.8b	23.8c	6.3a

Means followed by the same letter in a column were not significantly different at the 5% level (Fishers LSD)