

Area	Year	Growers	Sugar Yield (lbs/A)
Pinal	1972	Carlotta Gilbert	7,210
	1973	Howard Holland	8,145
	1974	Philip C. Hanson	8,380
	1975	Glenn Lane	9,180
	1976	Glenn Lane	8,025
	1977	Signal Park Farms	8,270
	1978	Empire Farms Corporation	7,268
	1979	Virginia K. Holland	7,365
	1980	Layton Farms, Ltd.	8,585
	1981	R.E. Schlittenhart	7,450
	1982	Glenn Lane	8,849

## Evaluation of New Synthetic Pyrethroids on Beet Armyworm

Dale Fullerton

### Summary

The effectiveness of Ammo and FMC-54800 in the control of larval populations of beet armyworms was demonstrated in seedling sugarbeets. Both insecticides were tested at two rates and were equal to the control of the standard insecticide. FMC-54800 appeared to be slightly more effective than Ammo.

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Sugarbeets were planted on Sept. 22 on the Mesa Experimental Farm and thinned on Oct. 13. Beet armyworm egg masses occurred early on seedling beets, however, treatable populations of larvae did not occur until Oct. 22. Populations remained high for about two weeks until cool, wet weather reduced moth activity and subsequent oviposition.

Ammo and FMC-54800 were both tested at 0.04 and 0.08 lbs/acre and compared to Lannate, the standard beet armyworm control. Pounce was added as the standard synthetic pyrethroid. Kryocide, which had looked effective in a previous test, was added to re-affirm its effectiveness.

The initial application was applied on Oct. 25 when pre-treatment counts indicated moderately high larval numbers based on the number of larvae per 10 plants. Larval increases from continued hatching of egg masses necessitated a follow-up application on Oct. 29.

Table 1 shows the treatments, application rates, larval numbers and significance for each sampling date. Both rates of Ammo and FMC-54800 reduced larval numbers below those of the untreated check and were comparable to the two standard insecticides. Kryocide did not show a significant reduction after either of the two applications. In general, FMC-54800 appeared to be slightly more effective than Ammo. While larger and more persistent populations would have been desirable, it is apparent that Ammo and FMC-54800 have potential as an effective beet armyworm insecticide.

Table 1. Larvae per 10 plants

Treatments	Rate lbs/A	Pre-trtmt 10/22	10/26	10/28	11/1	11/16
Untreated	---	4.75	20.25 a	27.75 n.s.	29.25 a	26.0 a
Lannate L	0.45	16.25	6.50 cd	18.00	7.00 b	2.5 cd
Pounce	0.10	10.0	10.25 c	13.25	8.75 b	3.25 c
Ammo	0.04	14.5	10.75 bc	20.25	4.50 bc	3.0 c
Ammo	0.08	21.75	8.25 cd	23.00	7.25 b	1.25 cd
FMC 54800	0.04	10.75	3.25 cd	3.25	0.50 c	0.0 d
FMC 54800	0.08	18.75	2.00 d	6.00	0.00 c	0.0 d
Kryocide	8.0	13.75	18.00 ab	28.80	27.50 a	12.25 b

Application dates: Oct. 25, 29

Means followed by the same letter are not significantly different.

#### Sugarbeet Variety Test at the Mesa Farm

John Nelson  
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#### Summary

Amstar Spreckels' experimental line H79290 has produced outstanding root yields and sucrose percentages the past three seasons and appears to be superior to several commercial varieties.

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Sugarbeet variety improvement in the United States is a cooperative undertaking of the sugarbeet industry, the U. S. Department of Agriculture and the State Agricultural Experiment Stations. In Arizona, the Agricultural Experiment Station does not conduct breeding work on sugarbeets. However, the University of Arizona has cooperated with Spreckels Sugar Division of Amstar Corporation and other sugar companies since 1968 in testing lines and hybrids that may have potential for central Arizona.

Much progress has been made by breeders in developing varieties that are better adapted to central Arizona conditions. In the late 1960's sugarbeet production in Arizona was seriously hampered by diseases commonly known as virus yellows. Yields were greatly improved by the release of US H9B, a hybrid with moderate virus yellows resistance. Tests at the Mesa Farm showed that this hybrid would out-yield varieties without yellows resistance by 2 to 6 tons per acre. More recently, hybrids have been developed that have *Erwinia* rot resistance and bolting resistance. Bolting resistance is of particular importance to growers in central Arizona, since varieties for use in this production area must have a higher level of bolting resistance than those of most other growing areas because of the winter season. Several hybrids have been developed that have excellent bolting resistance and appear superior to S-445H in yield characteristics. Currently, Amstar Spreckels plant breeder, Dr. Jim Schulke, has developed several experimental lines that appear to be superior in root and sugar yield to varieties now being used commercially.

The entries in this year's test are limited to Amstar Spreckels' lines and hybrids. The test was planted 30 September 1981 and harvested 24 June 1982. The characteristics of each entry are given in Table 1.