

235 ft. x 4 rows (40-inch spacing) at the rates shown in table 1. Presilk applications were made on August 2 and 5; remaining applications on August 7, 9, 11, 13, 15, 17, 19, and 21. On August 27 and 28, fifty ears were harvested per plot (200 per treatment) and individually examined for corn earworm damage and the presence of aphids.

Lannate, Lorsban, and Gardona provided effective control of the corn earworm in the presence of an infestation that produced 78 percent worm-infested ears in the untreated plots (table 1). In the presence of this moderate level of infestation, Sevimol at 3 lbs. actual toxicant per acre did not provide acceptable control. The use of Sevimol (or Sevin and molasses) for control of corn earworm is presently widespread among sweet corn growers in southern California. However, the results indicate that this material may not provide adequate protection when earworm populations are high. Of the compounds tested, only Lorsban provided effective control of both the corn earworm and the aphid.

The experimental compounds, FMC 33297 (a synthetic pyrethroid), RH 218 (an organophos-

phate), and UC 49035 (a carbamate) were evaluated in a separate test in which the plots were 50 ft. x 3 rows. These materials were applied on August 7, 9, 11, 13, 15, 17, 19, and 21. On August 29-30, twenty-five ears per plot (100 per treatment) were harvested and examined individually for corn earworm damage. The results are presented in table 2.

Although FMC 33297 and RH 218 at 1 lb. appeared to give slightly better control than UC-49035 and RH 218 at 0.5 lb., there were no significant differences between the mean percentages of infested ears in these treatments. All treatments had significantly fewer ears than the untreated plots.

Table 1. Evaluation of insecticides for control of corn earworm and *R. padi* on sweet corn in Riverside, Ca.—1974

Treatment	Lb. actual toxicant per acre	Percent earworm-infested ears	Percent aphid-infested ears
Lorsban	1.0	3.5 a	2.5 a
Lannate	0.45	3.0 a	56.0 b
Gardona	1.5	4.5 a	86.5 c
Sevimol	3.0	20.0 b	49.5 b
Untreated		78.0 c	96.0 c

Means in column followed by same letter not significantly different — Duncan's multiple range test  $P \leq 0.05$

The present studies indicate that under conditions of a moderate corn earworm infestation, Lannate, Gardona, and Lorsban provide effective earworm control, while Sevimol does not. The experimental compounds tested showed sufficient promise to warrant additional testing.

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Table 2. Evaluation of insecticides for control of corn earworm on sweet corn in Riverside, Ca. — 1974

Treatment	Lb. actual toxicant per acre	Percent earworm-infested ears
FMC 33297	0.1	5 a
RH 218	0.5	15 a
RH 218	1.0	8 a
UC 49035	1.0	12 a
Untreated		75 b

Means in columns followed by same letter not significantly different — Duncan's multiple range test  $P \leq 0.05$

## Research Briefs for CALIFORNIA AGRICULTURE

### HIGH-ENERGY RATIONS

Results of three studies to date in a continuing project aimed at determining the effects of dietary treatment on body composition and performance of beef cattle indicate that maximum performance on a high-energy ration is achieved by cattle grown to 500 lbs. before being given the high-energy ration. To obtain data for determining what procedure should be used to grow calves to 500 lbs., various energy levels were compared. In general, the rate of growth was dependent on energy concentration in the ration. Considering the growth and efficiency to 500 lbs. on the growing ration and the performance on the high energy ration from 500 lbs. to finish, a growing ration containing 72 per-

cent concentrates appeared to be optimum. Costs, obviously, would determine the levels chosen. — *G. P. Lofgreen, Department of Animal Science, Davis, Imperial Valley Field Station.*

### CATTLE WASTE NITRATE DISPOSAL

A recent Imperial Valley Field Station study of an unlined, liquid-cattle-waste digestion pond showed that soil sealing occurred in 3 weeks and that the order of magnitude of nitrate addition to the ground water was 0.27 lbs. per steer per year. The study was conducted as part of a current project at the station which is aimed at improving irrigation management and salinity control in the

Imperial Valley. — *F. E. Robinson, Department of Water Science and Engineering, Davis.*

### HEAT-TREATED, VIRUS-FREE MEYER LEMON CLONES

Two heat-treated, virus-free Meyer lemon clones developed through the Citrus Variety Improvement Program are being compared with four old-line, virus-infected clones on three rootstocks and as own-rooted seedlings in a study at the South Coast Field Station. So far, evaluation of the heat-treated, virus-free clones for production and fruit quality in this planting give every indication that they can successfully replace virus-infected Meyer lemons. — *W. Reuther and E. C. Calavan, Department of Plant Science, Riverside.*