CONTROL OF TOMATO FRUITWORM CONTROL IN PUERTO RICO ON THREE TOMATO CULTIVARS, 1984–85: Tomatoes were planted at the Fortuna Research and Development Center of the University of Puerto Rico Agricultural Experiment Station, Fortuna, PR. Three varieties, PR-82 and PR-101, advanced breeding lines from the Puerto Rico program and the well known U.S. cultivar, Walter, were used. Seedlings were transplanted to the field 10 Dec. Treatments consisted of 4 rows of 5 plants each with 36-inch spacing between rows and 16-inch spacing with in rows. Each treatment (variety × spray, including an untreated control) was replicated 3 times in a randomized complete block design. PR-101 was not included in all of the insecticidal spray treatments because we had insufficient plants. Foliar sprays were either weekly or biweekly from 17 Dec through 7 Mar using a CO₂ powered hand-sprayer delivering 50 gal of water/acre at 35 psi. Our intended objective was evaluation of the efficacy of reduced insecticide spray applications for control of tomato pinworm, *Keiferia lycopersicella* (Walsingham), control on 3 tomato lines thought to vary in pinworm susceptibility. Pinworm populations failed to materialize, however tomato fruitworm was abundant enough to cause economic injury. Plots were harvested 12–13 Mar, and the fruit scored as to marketable (essentially unblemished), showing evidence of fruitworm injury, and unmarketable for reasons other than evident insect injury. The latter category, included cracking and other fruit defects.

Of 20,515 fruit scored, 432 (2.1%) were recorded as damaged by fruitworm; an additional 2,391 (11.7%) were judged unmarketable. Over spray treatments, the proportion of marketable fruit was 94.5% for PR-101, 92.7% for Walter, and 74.1% for PR-82. In the untreated check, the % marketable fruit was 91.5% for Walter, 88.8% for PR-101, and 79.7% for PR-82. We could positively attribute only 15.3% of the unmarketable fruit to fruitworm injury; 2.4% for Walter, 3.7% for PR-101, and 5.8% for PR-82. However, the gain in marketable fruit resulting from the most effective sprays was greater than this suggesting that much of the losses due to undetermined causes originated with insect injury. Indeed, the correlation between % insect damaged tomatoes and % losses from other causes was highly significant for treatments with all 3 varieties, $r = 0.415$, 61 d.f. and for treatments with all 16 sprays, $r = 0.378$, 94 d.f. In plots not treated with insecticide, the proportion of fruit judged unmarketable (data not presented) was 8.3% for Walter, 12.3% for PR-101, and 21.3% for PR-92. Ambush appeared to be the most effective insecticide material. Except with Sevin, there was no evidence that 2x rates provided better control than 1x rates, or that weekly applications were more effective than biweekly application.

FOLIAR SPRAYS FOR CONTROL OF COLORADO POTATO BEETLE ON TOMATO, 1985: Tomatoes were transplanted on 7 May at the Eastern Shore Agricultural Research Station, Painter, VA. Each plot consisted of a single, 25-ft long row bordered on each side by an untreated row. Between-row spacing was 5 ft with 12-inch spacing between plants. Treatments were replicated 4 times in a randomized complete block design. Sprays were applied with a propane compressed air backpack sprayer using 3 hollow cone nozzles per row and delivering 75 gal water/acre at 41 psi. Applications were made on 16, 24 May, 3, 10, 17, and 24 Jun. Evaluation criteria consisted of direct counts of the no. of CPB on 10 plants per treatment.

In control plots CPB larvae reached peak no. on 30 May with highest density of adults occurring on 26 Jun. All treatments except Monitor gave good control of larval populations. During the 2 wk of peak adult activity on 19 and 26 Jun, adult counts were significantly lower in all insecticide treatments than in control.