Susceptibility of Two Tomato Varieties To Infestation By Chaetodacus cucurbitae (Coq.)

BY RALPH H. MARLOWE
Junior Entomologist, Bureau of Entomology and Plant Quarantine

(Presented at the meeting of December 3, 1936)

Recently some work was completed on a field technique that may be employed to measure the effectiveness of a bait spray on melon fly populations. The experimental plot in which the work was carried on contained two commercially grown tomato varieties. Incidentally, it was observed that there was a difference in the infestation of the two varieties grown side by side in the same field. This note presents data which shows that under conditions which existed during the experimental setup, Break of Day variety of tomato was less susceptible to infestation by *C. cucurbitae* than the Prichard variety.

The experimental field was composed of two sections, i.e., south side, Break of Day variety—112 plants, 6 rows wide and the north side, Prichard variety—49 plants, 4 rows wide. The prevailing winds were along the field and not across from one variety to the other thus reducing to a minimum the cross drift of flies.

The crop was picked and infestation counts recorded weekly. Ripe (colored) tomatoes were inspected at the time of picking. The mature green tomatoes were held for 3 to 4 days before examining for infestation. The following table gives the number of tomatoes picked, percent infested by *C. cucurbitae* and the percent injured by other agents which includes tomatoes that were not infested by the melon fly but were not marketable because of injury due to rodents, birds, diseases and other insects besides the melon fly.

The plants in the Break of Day section produced tomatoes for two weeks longer than the Prichard variety. The average number of fruits per plant was 93+ and 46+ respectively or an approximate ratio of 2 to 1. Of the total crop, the average infestation by

Infestation of two Varieties of Tomatoes by *C. cucurbitae.*

Date 1936	Prichard			Break of Day		
	Number tomatoes picked	Percent infested by *C. cucurbitae*	Percent injured by other agents	Number tomatoes picked	Percent infested by *C. cucurbitae*	Percent injured by other agents
8- 3	80	70.0	6.3	473	18.6	8.0
8-10	147	83.7	3.4	367	25.1	9.8
8-17	127	57.5	26.0	303	14.2	12.2
8-24	320	64.4	23.1	952	5.8	9.5
8-31	864	49.3	37.0	2,208	17.0	8.5
9- 8	540	40.0	42.0	1,701	25.2	15.4
9-14	180	50.0	32.8	978	26.4	22.7
9-21	.....	.....	.....	1,350	21.6	32.2
9-28	.....	.....	.....	2,166*	19.7	36.3
Total	2,258	59.3	24.4	10,498	19.3	17.2

the melon fly of the Break of Day variety was 19.3 percent as compared with 59.3 percent infestation of the Prichard variety.

Of the 10,498 tomatoes produced by the Break of Day variety, 6,668+ or 63.5 percent were marketable; of the 2,258 produced by the Prichard variety, 369+ or 16.4 percent were marketable. The average yield of marketable tomatoes per plant was 59+ and 7+ respectively, or an approximate ratio of 8 to 1 per plant.

* This figure includes some medium-size green tomatoes which were picked as the plants were pulled up. Ordinarily these immature tomatoes would have been left for another week before being harvested.