Observations on Mango Weevil Infestations in 1957

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(Presented at the meeting of December 15, 1958)

The following observations were made on the mango weevil, *Sternochetus mangiferae* (Fabricius), in the course of chemical control studies in a mango grove in Robinson Gulch at Kunia near Wahiawa, Oahu, in 1957. The fruit was set during March, and there was only a single crop that year. Van Dine (2) first recorded the presence of the weevil in Hawaii in 1906, and stated that the life cycle was approximately 40 days with but one generation per year. Swezey (1) also studied its biology and examined numerous seeds for weevil infestation. He found weevils in nearly all the seeds, with 10-percent infestation in green mangoes as early as January.

In order to evaluate the effectiveness of chemical treatments to be applied, the infestation in 1181 mango fruits gathered from the ground at intervals between July 17 and September 3 was determined. The July 17 collection, made prior to the peak of crop production, showed 95 per cent infestation of seeds by 1 or more mango weevils (table 1). As the season advanced the number of infested fruits decreased, the September 3 collection showing only 41 per cent infestation. Decreases in the number of larvae and increases in the percentages of pupae and adults suggest that the heaviest weevil attack occurred early in the season before the first collection was made.

The number of individuals per infested seed ranged from 1 to 5, with single-individual infestation predominating (66.3 per cent) and 95.7 per cent of the infested seeds having either one or two individuals. Various combinations of larvae, pupae, and adults or all these stages together occurred in some of the seeds.

Over 99 per cent of the weevils in 1975 infested seeds collected during the same period and then held in the laboratory were adults when examined between December 16 and January 27, 1958. The mortality was 34 per cent by mid-December, 42 per cent by early January, and 56 per cent by January 27, in contrast to no mortality in seeds dissected immediately after collection. An examination of 40 old seeds nearly a year after collection (June 1958) showed 100 per cent mortality of the

adults in them.

TABLE 1. Mango seed weevil infestation in Robinson Gulch, Kunia, Oahu, in 1957.

Date	Mangoes		Total Number of Weevils	Per Cent of		
	Number Collected	Per Cent Infested		Larvae	Pupae	Adults
July 17	60	95	94	100	0	0
26	178	97	199	100	0	0
30	190	96	259	100	0	0
Aug. 1	114	94	145	100	0	0
6	134	83	148	62	35	4
8	45	78	59	66	32	2
12	124	89	173	43	47	10
19	146	77	166	32	37	31
26	151	64	131	21	20	60
Sept. 3	39	41	20	25	25	50

Rodents damaged many of the seeds on the ground under the trees to the point where no weevil could have survived. However, 29 per cent of these rodent-damaged seeds had emergence holes when examined on January 27, 1958, indicating escape of one or more adults prior to damage. The fact that 45 per cent of the seeds with no rodent damage had emergence holes suggests a slight degree of control by rodents. Moist conditions obviously are necessary for good weevil emergence, since adults emerged in the field but not in the laboratory.

LITERATURE CITED

(1) SWEZEY, O. H. 1922–52. Scientific notes. PROC. HAWAII. ENT. SOC. *5*:13; *7*:385; *9*:8; *11*:270; *12*:14; *14*:11, 13.
(2) VAN DINE, D. L. 1906. The mango weevil. HAWAII AGR. EXPT. STA. PRESS BULL. 17, 11pp.