

SECTION I

INTRODUCTION.

Although in most parts of the Tropics and Sub-Tropics guava is not considered a serious agricultural pest, and may in fact be cultivated for its fruit, in the Western Pacific, notably Fiji and New Caledonia, it is ranked as a noxious weed. Its status as a pest can best be gauged by reference to Fiji.

The first report in the literature is by Barnes in 1930. Guava was then a serious weed in many parts of the island, being found on hilly slopes not under cultivation, in coconut plantations, in fallow sugarcane fields and on grazing land. Some control was obtained by cutting down the bushes and ploughing out the stumps, or by burning. Cutting to ground level and poisoning the stumps was also practised, and in one coconut plantation complete control was obtained by cutting back the shrubs and allowing Mile-a-minute (Mikania micrantha HBK) to smother them. Unfortunately the latter will smother young coconuts as well, so should be used with care.

The cost of controlling guava in 1930 ranged from 9/- per acre for cutting and burning to £3 per acre for digging out, and £3:10/- per acre for cutting and poisoning.

In 1945 the Fiji Legislative Council issued a paper on "The distribution, status and control of weeds in Fiji" (Harvey et al. 1945), in which the weeds are considered in relation to environmental conditions. The status of guava may be summarised as follows :-

On cultivated land infestation was light, whereas on undeveloped flat land as well as on pasture and fallow it was heavy. . On cultivated/hilly land no guava was to be found although light infestation occurred on pasture, and heavy infestation on undeveloped land. These hilly lands appear to have been largely under sugarcane. No mention is made of guava being found along roadsides, although beside rivers it tended to be extensive.

In the Western Agricultural Division infestation was heavy and widespread, both in pasture and fallow. Horses and cattle seem to have been

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more important in spreading seeds than birds, since clean land opened to stock soon became infested. In the Northern Agricultural Division it was considered to be the most serious weed of grazing land, coconut plantations and fallow. Under these conditions it would clearly be uneconomical to attempt control with a herbicide, and indeed biological control seems the only practical method.

Guava is neotropical in origin, and in Trinidad at any rate, although common, does not assume the proportions of a pest. There seems a good chance, therefore, that a search would reveal one or more insect species capable of keeping it under control, and if these were to be divorced from their parasites, they might effect a still closer control.

The problem has been approached from two directions. Firstly, a search has been made through the literature and a list compiled of insects recorded from guava; and secondly, a field collection made and any immature stages bred out. From field observations it was possible to pick out a few promising species for more detailed study. In the event, only one species, Eupseudosoma involutum Sepp. Lepidoptera, Arctiidae, was chosen, and this proved so promising that the others were not considered. Recommendations on future policy in this respect are given in Section V.