PRELIMINARY STUDIES ON THE CONTROL OF MANGO-HOPPERS BY STEM INJECTION WITH SYSTEMIC INSECTICIDES

CONTROL of insect pests by injecting systemic insecticides through the root or stem of their host plants is of recent origin. The cotton wood-leaf aphid, *Chaitophorus populellus* Gillette and Palmer (Lavigne and Stevens, 1965), Cotton stick insect, *Graeffea crouanii* (Le Guillou) (Stelzer, 1970), elm leaf beetle, *Pyrrhalta luteola* (Muller) (Saunders, 1971), Slash pine seed worm, *Laspeyresia anaranjada* (Muller) (Merkel and De Barr, 1971) and the cocoanut caterpillar, *Brassolis sophorae* L. and moth borer, *Castnia daedalus* Cramer (Rai, 1973) have been controlled by this method. Since these attempts gave promising results, a preliminary experiment was conducted to find out the effect of stem injection in controlling mango-hoppers. This was attempted during the off-season so as to eliminate the hopper population before flowering starts and to overcome residue problems that may arise during flowering season.

Dimethoate was injected at the rate of 0·50 ml active ingredient per cm girth of the main trunk of the mango tree aged about 21 years. Population counts of the mango-hoppers (*Amritodes atkinsoni* (Leth.), *Idioscopus clypealis* (Leth.), *Idioscopus niveosparsus* (Leth.), both in treated and untreated (control) plants were taken before and after the treatment, daily for a week, and at an interval of one week afterwards. Reduction in the population of the hoppers indicating the effectiveness of the hemical is presented in Table I.

It is clear from the table that the population started declining from the third day of the treatment and continued declining upto third week, when it was as low as one per sample of ten sweeps as against 152 in control. The population slightly raised from fourth week onwards showing the toxic residual effect of the chemical upto fourth week. However, it was kept as low as 21 per sample of ten sweeps against the population of 234 in control even after eight weeks. This slight increase in the population of hoppers after fourth week and upto eight weeks may be due to the time taken for the build up of the hoppers. However, this low incidence of the hoppers during this period minimises the damage, by which time fruit setting will be completed. Further work on the efficacy of other systemic insecticides at various concentrations in addition to residual effects on the plants, etc., are in progress.

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TABLE I

Population of Mango-hoppers after the stem injection with systemic insecticide

Population of mango-hoppers	Population before treatment	First week in days							Population after treatment Week						
		1	2	3	4	5	6	7	II	III	IV	V	VI	VII	VIII
On treated plant	192·0	135·0	54·0	29·0	18·0	15·0	13·5	12·5	1·5	1·0	4·0	5·0	7·0	13·0	21·0
On control plant	203·0	206·0	223·5	219·0	210·0	223·0	246·0	226·0	188·5	152·0	138·0	162·0	178·0	214·0	234·0

* Average of four samples of ten sweeps each.

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