The members of the Academy felt that though useful observations have been made there is a clear case for further detailed studies with special emphasis on the need for collaboration between the workers in the Oilseeds and the Entomology Sections.

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4. A PRELIMINARY STUDY ON THE EFFECT OF CERTAIN SYNTHETIC INSECTICIDES ON BENGALGRAM AND COWPEA

by

B. VASANTHARAJ DAVID and P. S. NARAYANASWAMY

The studies were undertaken to gather information on the beneficial and adverse effects of repeated application of insecticides on bengalgram and cowpea independent of their insecticidal action. Three rounds of 0.1% sprays of BHC, DDT, Lindane, Aldrin, Dieldrin, Basudin and H. E. T. P. and 0.05% sprays of Parathion (Folidol) and Endrin were applied under pot culture conditions during 1961–62 at Coimbatore and replicated four times. The first round of treatments was given a month after sowing and the subsequent two rounds at intervals of 15 days.

There was good growth in plants treated with BHC, Basudin, Endrin, Parathion, Dieldrin, Aldrin and Lindane in Bengalgram and DDT, Endrin, Aldrin and Dieldrin in cowpea.

In all the insecticidal treatments both in bengalgram and cowpea there was increased yield over control and there was also increase in the height of plants over control in bengalgram, indicating that the insecticides have some stimulant action on the growth and yield of plants. This is in conformity with previous observations.

Observations made on the third day after the application of insecticides showed no phytocidal injury to the foliage of the plants.

Secondary infestation of the mealy bug, *Ferrisiana virgata* Ckll., on plants treated with DDT, BHC, Lindane and Dieldrin in bengalgram and DDT in cowpea, the aphid, *Aphis craccivora* Koch., on plants treated with BHC, DDT, and Dieldrin in cowpea and the mite, *Tetranychus telarius* Linn., on plants treated with BHC, DDT, Endrin, Aldrin and Basudin in cowpea were noted. There were no symptoms of tainting of the produce but after cooking the produce obtained from the plants treated with BHC in bengalgram and Basudin in cowpea were found to have lost their natural flavour and to be insipid in taste.

The results obtained in this preliminary study are only indications of the benefits and manifestations of adverse effects in plants treated with insecticides.

* During discussions the remarks of the referee were read out. The referee had remarked that it is a good line of work, but proper planning, including the association of a Plant Physiologist with the experiments is essential to arrive at some definite conclusions.

The authors explained that the work done was only of a preliminary nature. Detailed studies on the physiological aspect would involve work of a fundamental nature for which facilities are not available here.

It was pointed out that the applications of sprays repeatedly at 15 days intervals was unnecessary and the number of applications could have been reduced since some of these chemicals are effective upto 3 weeks.

Further observations could also have been done on specific pests that occurred on the plants and their reactions to the treatments. It is desirable to study the final quality of the product and also the insecticidal residue left over in the plant parts.

The authors agreed that these aspects will be taken up in subsequent studies.

5. A NEW AND SAFER INSECTICIDE FOR THE CONTROL OF *Epilachna vigintioctopunctata* F. AND *Leucinodes orbonalis* G. ON BRINJAL

by

A. LEELA DAVID

An experiment was conducted on the summer crop of brinjal during 1962, for the control of the leaf beetle, *Epilachna vigintioctopunctata F.* and fruit borer, *Leucinodes orbonalis* G. with sprays of thiometon (Ekatin) 0.1%, methyl demeton (Meta Systox) 0·1%, methyl naphthyl carbamate (Sevin) 0.1%, dust of Heptachlor 3% and control. The insecticides were applied three times at intervals of about 2 to 3 weeks. The results were highly significant with Sevin proving the best and methyl demeton and thiometon coming next in the order of efficacy. Sevin also gave significantly the highest yield which was double that of the control. It was neither phytotoxic to the plants nor did it give any off-flavour to the brinjal fruits. Sevin is also stated to have low mammalian toxicity with LD_{50} of 540 milligrams per Kilogram body weight in rats and hence can be safely used as an insecticide on this vegetable crop.

* The referee has pointed out that thiometon and methyl demeton being systemic insecticides effective against sucking insects and Heptachlor being an effective soil insecticide it would have been better if Sevin had been compared with DDT, lindane and endrin which are known to be effective against the Epilachna beetle and the borer. Further, the trials should be repeated at least for 3 years before drawing any definite conclusions.

The author replied that in the body of the paper itself it has been explained that experiments for the comparison of DDT and endrin with methyl demeton were conducted during the previous season. It was found that methyl demeton and thiometon were better than others and therefore in the present set of trials sevin has been compared with these two chemicals. Heptachlor was included since it is advocated for other surface eating insects also and because it was reported to give better yields.

A number of other questions, mainly clarificatory in nature, were raised both in the sectional meetings and the plenary session and were suitably answered.