GAU. Res. J. 1978. 3 (2): 90-91

Laboratory Evaluation of Some Insecticides for the Control of Leaf Weevil, *Cyrtozemia dispar* Pascoe (Curculionidae: Coleoptera) Infesting Soybean in Gujarat

D. J. Koshiya, R. K. Bharodia and G. M. Talati

Main Oilseeds Research Station, GAU, Junagadh

A leaf weevil, *Cyrtozemia dispar* Pasc. has been observed to infest soybean crop in the entire region wherever it is cultivated. However, its incidence was in epidemic proportion during the *kharif* season of 1975-76. This pest is comparatively a new one on soybean was first recorded by Patel and Sahay (1966) on cotton in Gujarat. Main damage is done by the adult weevils feeding on soybean leaves. Severe infestation completely defoiated the plants in many fields during *kharif* 1975-76. The grubs feed on roots but their damage was not much. As this pest has a habit to swoon and fall on ground on disturbance, only laboratory investigations for suitable insecticidal control were carried out in place of any field trial. Adult weevils were collected from unsprayed soybean fields and were used for laboratory trial after keeping them overnight in the laboratory. Nine insecticides from different formulations were tested along with water spray as control. The insecticides were sprayed or dusted directly on petri dishes (10 cm in diameter) with the help of Potter's tower with 1 ml or gm of spray or dust material at 30 kg/cm^2 pressure. After the treatment, 10 adult weevils were released in each petri dish. Fresh clean soybean leaves were provided as food 12 hours after release. Each treatment was replicated thrice. The weevil mortality data obtained 12, 24 and 48 hours after the treatment are summarized in Table 1.

TABLE 1

Efficacy of different insecticides in the control of leaf weevil, *Cyrtozemia dispar* Pasc. infesting soybean.

Treatment		*Mean % mortality after treatments (hours)*		
		12	24	48
Quinalphos	0·05% emulsion	100·00(10·03)*	100·00(10·03)	100·00(10·03)
Malathion	5% dust	100·00(10·03)	100·00(10·03)	100·00(10·03)
DDT	10% dust	0·0(00·71)	100·00(10·03)	100·00(10·03)
Carbaryl	10% dust	0·0(00·71)	100·00(10·03)	100·00(10·03)
Endosulfan	4% dust	40·00 (6·33)	100·00(10·03)	100·00(10·03)
Quinalphos	1·5% dust	76·67 (8·75)	100·00(10·03)	100·00(10·03)
Malathion	0·07% emulsion	0·0 (0·71)	66·67 (8·19)	93·33 (9·67)
Carbaryl	0·2% suspension	0·0 (0·71)	16·67 (4·10)	33·33 (5·72)
Endosulfan	0·05% emulsion	0·0 (0·71)	10·00 (2·83)	13·33 (3·67)
Control	(Water spray)	0·0 (0·71)	0·0 (0·71)	0·0 (0·71)
	S.E.m. ±	(0·23)	(0·40)	(0·29)
	C.D. 5%	(0·68)	(1·19)	(0·86)

* Figures in parenthesis are after $\sqrt{X + 0·5}$ trasformations, where 'X' denotes original mortality %.

Quinalphos 0·05% emulsion and malathion 5% dust were found quick in action and 100% mortality was recorded in less than 12 hours. 100% mortality was obtained also with DDT 10% dust, carbaryl 10% dust, endosulfan 4% dust and quinalphos 1·5% dust within 24 hours. Very low mortality was obtained with carbaryl 0·2% suspension, endosulfan 0·05% emulsion and malathion 0·07% emulsion, though with malathion 0·07%, 93% mortality was obtained after 48 hours. Thus quinalphos 0·05% emulsion or 1·5 dust or malathion 5% dust or DDT 10% dust or carbaryl 10% dust or endosulfan 4% dust could be recommended for quick and efficient control of this pest. Patel and Sahay (1966) have also recommended 10% carbaryl dusting for the control of this pest.

The authors are grateful to Shri P. K. Patel, Oilseeds Specialist, Gujarat Agricultural University, Junagadh for providing necessary facilities.

(*Received on Jan. 3, 1977*)

REFERENCE

Patel, R. M. and G. Sahay. 1966. Occurrence of new leaf weevil pest (*Cyrtozemia dispar* Pasc.) on cotton in Gujarat-State. *Curr. Sci.* 35 (10): 261-262.