GAU Res. J. 1996. 21 (2) : 129-131

Evaluation of Botanicals Against Jassid, *Amrasca biguttula biguttula* Ishida Infesting Castor

V. B. Patel and J. R. Patel

Department of Entomology, B. A. College of Agriculture, Gujarat Agricultural University, Anand-388 110

Use of plant products as insecticides against crop pests is gaining importance in recent years in view of environmental and health hazards posed by synthetic organic insecticides. The present investigation was taken up to evaluate some of the locally and readily available botanical insecticides against jassid, *Amrasca biguttula biguttula* Ishida infesting castor.

An experiment was conducted at Gujarat Agricultural University Campus, Anand during summer, 1991 in Randomised Block Design with three replications using GAU castor Hybrid-1. The plot size was 3.0 x 2.7 m. The row to row and plant to plant distance of 45 and 30 cm was maintained respectively. The seeds were dibbled in the fisrt week of March.

The locally and readily available botanical insecticides (Table 1) were studied in comparision with cartap for their bio-efficacy against jassid. The application of insecticides was started at the 6 weeks age of the castor crop with the apprearance of jassid and continued at an interval of one week till 10 weeks age of the crop. Five sprays were given. Prior to spray application of the respective treatment, from each plot on twenty randomly selected young leaves, only nymphs of jassid were counted and recorded during the study period. The data were subjected to analysis of variance by adopting standard statistical procedure.

The data on bioefficacy of various botanicals against jassid (Table 1) revealed significant superiority of readily available formulations viz., Neemark (0.5%) and Repelin (1%) over all other botanicals and cartap (0.5%) at the 7 weeks age of the castor crop. After second spray at the 8 weeks age Repelin and Neemark while not differing from 5% Neem (*Azadirachta indica* A. Juss) seed kernel Suspension, 3% Neem seed kernel + 2% Lantana (*Lantana camara* L.) leaves suspension, 2% Wellgro and 0.05% cartap were found significantly more effective against jassid than Neem, Ardusa (*Alianthus excelsa* Roxb.) and Lantana leaves extract. Among the latter group 5% Neem leaves extract was equally effective as Neem seed kernel suspension, Neem seed kernel suspension + Lantana leaves suspension, Wellgro and cartap.

The effectiveness of Repelin, Neemark, Wellgro, cartap, Neem seed kernel, Neem

TABLE 1

Bio-efficacy of various botanicals and cartap against jassid, *A. biguttula biguttula* Ishida infesting castor.

Treatment	*No. of jassid nymphs per leaf at the age (weeks) of*						
	6	*7*	*8*	*9*	*10*	*11*	*Pooled*
5% Neem seed kernel suspension	3.60	2.03	1.72	1.68	1.98	2.13	1.87
5% Neem seed kernel suspension + 2% Lantana leaves suspension	3.65	2.20	1.85	1.93	2.08	2.03	2.02
5% Neem suspension	3.66	3.15	2.08	2.25	2.18	2.18	2.37
5% Ardusa leaves suspension	3.55	3.20	2.76	3.38	3.35	3.70	3.28
5% Lantana leaves suspension	3.83	3.36	2.83	3.71	3.65	3.56	3.44
2% Wellgro	3.30	1.83	1.92	2.05	1.88	1.96	1.93
0.5% Neemark	4.00	1.15	1.52	1.63	1.80	1.71	1.60
1% Repelin	3.70	1.38	1.48	1.60	1.71	1.68	1.57
0.05% Cartap	3.56	1.86	1.71	1.71	1.91	1.65	1.73
Control	3.41	3.56	3.45	3.78	3.71	3.75	3.64
S. Em. ±	0.39	0.08	0.18	0.22	0.20	0.20	0.08
C. D. (P = 0.05)	NS	0.24	0.54	0.65	0.58	0.60	0.23
C.V. (%)	18.60	5.98	14.76	16.00	14.05	14.42	13.07

leaves, Neem seed kernel with Lantana leaves suspension applications at the crop age 9, 10 and 11 weeks was found at par but superior to Ardusa, Lantana and control.

The overall population build up of jassid was significantly lower on castor crop sprayed with repelin and Neemark as compared other treatments, but they did not differ fr cartap which also remained at par with Ne seed kernel and Wellgro, Latter two were a at par to a mixture of Neem seed kernel a Lantana leaves. The Neem leaves suspens spray prevented population build up of jas

more effectively than suspension of Ardusa and Lantana leaves which could not prevent, jassid infestation effectivelty.

Thus, the infestation of jassid, *A. biguttula biguttula* on young castor crop was prevented very effectively with spray application of plant origin insecticides Repelin 1% and Neemark 0.5%, Patel and Sojitra (1993) and Khandal *et al.* (1989) have also found effectiveness of Repelin and Neemark against jassid infesting okra and cotton respectively.

(Received on 27th June, 1994)

REFERENCES

Khandal, V. S., Rahalka, S. B. and A. D. Phadke, 1989. Herbal Plant Protection Approach for Pest Control in Cotton. Paper presented at National Seminar on 'Futuristic Approaches in Cotton Improvement' February 24-25, 1989.

Patel, J. R. and I. P. Sojitra, 1993. Repekin a plant origin insecticide for pest control on okra, *Abelmoschus esculentus* L. paper presented at World Neem Conference, Bangalore, February 24-28, 1993.