

Short Communications

Pakistan J. Sci. Ind. Res., Vol. 15, No. 6, December 1972

FIELD TRIALS OF PETKOLIN GRANULES AGAINST BLACK CUTWORM (LEPIDOPTERA: NOCTUIDAE) OF POTATO AT MALIR, KARACHI

S.H. ASHRAFI, A.H. QURAIISHI and AIJAZ ALI

PCSIR Laboratories, Karachi 39

(Received December 20, 1972)

Black cutworm (*Agrotis ypsilon* Rott.) is a widely distributed major pest of potato crop in the Indo-Pakistan subcontinent. It is primarily a pest of potato (*Solanum tuberosum*), causing considerable damage, but it has also been recorded as a pest on tobacco (*Nicotiana tabacum*),¹ gram (*Cicer aerintum*), cotton (*Gossypium* sp.), tomato (*Lycopersicum esculentum*), lucerne (*Trifolium alexandrium*), chillies (*Capsicum annum*), brinjal (*Solanum melongana*) etc.

Many insecticides like Malathion,² Toxophen plus DDT,³ systemic toxicants,⁴ Aldrin, Dieldrin, and Endrin can also be used effectively for the control of black cutworm.

Because of the degree of damage to a commodity of high food value, the trials was conducted to evaluate the efficacy of Petkolin granules.⁵⁻⁸ Pesticidal potentialities of Petkolin have been reported earlier by Ashrafi *et al.*, and others against many insect pests.⁹⁻¹⁴

Materials and Methods

The experiment was designed and conducted in a field of 1½ acre cultivated land at Malir. A plot of ¼ acre was taken as control, while the rest 1½ acre was equally divided into six plots, each of ¼ acre for three different treatments.

Three different treatments, 5 lb (T₁), 4 lb (T₂) and 3 lb (T₃) per acre respectively, were given. Pretreatment counts were taken after 48 hr in first three plots (first experiment), while in another three plots (second experiment) after one week. Petkolin granules (25%) were broadcast at the rate of 5, 4 and 3 lb per acre respectively. The diluent used in equal proportion was ordinary field sand. The variety of potato on which the granules were used was Ultimus of Holland. As usual irrigation was given soon after broadcasting.

The mortalities were corrected by using the Abbott's formula.¹⁵

Results

Experiment carried out with Petkolin granules on potato crop proved effective in controlling black cutworm too. It is clear from the data given in Tables 1 and 2 plots treated with 4 lb granules per acre given the maximum yield, i.e. 253 maunds per acre after 24 hr and 241 maunds per acre after 178 hr respectively. The data also show that the yield is much high in all the treated plots as compared to the yield of control plots.

TABLE 1. AVERAGE PER CENT MORTALITIES OF BLACK CUTWORM AFTER 24 hr WITH DIFFERENT TREATMENTS.

Treatments	Counts	No. of larvae		Mortality (%)		Yields/acre	
		Control	Treated	Control	Treated	Control	Treated
T ₁	Pretreatment	28	23	3.5	78.2	78	192
	Posttreatment	27	5				
T ₂	Pretreatment	31	21	6.4	80.9	95	253
	Posttreatment	29	4				
T ₃	Pretreatment	13	17	7.6	58.8	83	168
	Posttreatment	12	7				

TABLE 2. AVERAGE PER CENT MORTALITIES OF BLACK CUTWORM AFTER 178 hr (ONE WEEK) DIFFERENT TREATMENTS.

Treatments	Counts	No. of larvae		Mortalities (%)		Yields/acre	
		Control	Treated	Control	Treated	Control	Treated
T ₁	Pretreatment	16	14	18.7	78.5	93	198
	Posttreatment	13	3				
T ₂	Pretreatment	14	25	7.1	76	103	241
	Posttreatment	13	6				
T ₃	Pretreatment	17	19	11.7	73.6	77	212
	Posttreatment	15	5				

Acknowledgement. The authors wish to express their sincere thanks to Mr. Dad Rahim and Mr. Mohd. Yousuf of Haji Murad Goth, Malir, Karachi for extending their cooperation during this trial.

References

1. *Crop Pest and How to Fight them* (Government of Maharashtra, Bombay, 1960), pp. 78.
2. W.A.L. David, *Ann. Rev. Entomol.*, **3**, 379 (1958).
3. N.M. Rendolph, *J. Eco. Entomol.*, **49**, 403(1956).
4. H.T. Reynold, T.R. Fukoto, R.L. Metchalf and R.B. March, *J. Eco. Entomol.*, **50**, 527 (1959).
5. M. Anwarullah, S.S. Qureshi and S.H. Ashrafi, *Pakistan J. Sci. Ind. Res.*, **10**, 251 (1967).
6. M. Anwarullah and T. Akhtar, *Pakistan J. Sci. Ind. Res.*, **9**, 180(1966).
7. S.H. Ashrafi, S.M. Murtuza and D. Asmatullah, *Pakistan J. Sci. Ind. Res.*, **7**, 211(1964).
8. S.H. Ashrafi, S.N.H. Naqvi, N.R. Khan and S.M. Murtuza, *Sci. Ind.*, **7**, 22(1969).
9. S.H. Ashrafi, M.A. Quddus and S.M. Murtaza, *Pakistan J. Sci. Ind. Res.*, **6**, 192 (1963).
10. S.H. Ashrafi and S.M. Murtuza, *Pakistan J. Sci. Ind. Res.*, **7**, 152 (1964).
11. S.H. Ashrafi and A.A. Khan, *Pakistan J. Sci. Ind. Res.*, **8**, 298 (1963).
12. M. Abdullah and A.H. Qureshi, *Pakistan J. Sci. Ind. Res.*, **14**, 144 (1971).
13. S.H. Ashrafi, R.A. Khan and M. Anwarullah, *Sci. Res.*, **3**, 190 (1966).
14. S.H. Ashrafi I.A. Khan, S.A. Moiz and M.S. Qureshi, *Sci. Res.*, **5**, 1(1963).
15. W.S. Abott, *J. Eco. Entomol.*, **18**, 165 (1925).