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INCIDENCE OF LEPIDOPTEROUS PESTS ON JUTE IN PESHAWAR*

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Larval densities of *Spilosoma obliqua* Walk., with seasonal averages in parenthesis ranged from 0-157.5 (38.7), 0-153.8 (45.0), 0-3.3 (0.9), 0-2.5 (0.7), 0-2.8 (0.8), 0-0.5 (0.1) on cultivars C. G., Nepal-1, D-154, Nepal-2, Yue-Yuan No. 5 and Sunkukra, respectively. *Earias cupreoviridis* Wlk., *Euproctis xanthorrhoea* Kollar, *Anomis involuta* Walk., *Dasychira mendosa* Hub., were noted as minor pests, on some of the cultivars. *Sylepta derogata* Fab. revealed a moderate level of occurrence on the last cultivar. *Earias insulana* Boisd., *Euproctis fraterna* Moore, *E. scintillans* Walk., *Psalis pennatula* (Fab.), *Archips micaceana* Walk., *Anomis flava* Fab., *Spodoptera litura* (Fab.), *Creatonotos gangis* Lin., and *Trypanophora semihyalina* Kollar were encountered as occasional and rare pests.

INTRODUCTION

Due attention was given to the experimentation of jute crop in this part of the country when the Eastern Wing delinked permanently. In N.W.F.P. no parametrical assessment of the incidence of the pest species has been tackled so far in the past. It was, therefore, considered necessary to scroe out the incidence of various pest species on jute. *Anomis flava* Fab. (13,17), *Dasychira mendosa* Hub. (5), *Earias cupreoviridis* Walk. (5,6,7), *E. insulana* Boised. (1,2,5,8,11,16), *Euproctis scintillans* Walker (5,7), *Spilosoma obliqua* Walk. (3,4.5,9,10,12,14,15) and *Spodoptera litura* Fab. (5,14) have been reported as pests of jute. The present report concerns with the initial assessment of the incidence of lepidopterous pests on different cultivars of jute being cultivated at the Agricultural Research Institute Tarnab, Peshawar.

MATERIALS AND METHODS

Seed of the following jute cultivars were sown on June 2, 1981, in lines 0.3 m apart, in randomised complete block design :-

(A) *Corchorus olitorius* L. (B) *C. capsularis* L.

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0.3 m apart, in randomised complete block design :-

(A) *Corchorus olitorius* L.
(1) C. G.
(2) Nepal-1

(B) *C. capsularis* L.
(3) D-154
(4) Nepal-2
(5) Yue-Yuan No. 5

(C) *Hibiscus cannabinus* L.
(6) Sunkukra

Each cultivar plot measured 3.9 x 9.3 with four replications. Plots and replicates were buffered with sufficient spacings.

Densities of the larvae were recorded per plot/replication and infestation were averaged accordingly. Observations were continued at weekly intervals until maturity stage. Data expressed in densities and in percent were transformed to log x or log x + 1.5, and arcsin, respectively, and then subjected to statistical analysis.

RESULTS AND DISCUSSION

(1) Jute Hairy Caterpillar (*Spilosoma obliqua* Walker)

Incidence of the pest started during August and thereafter it followed a fluctuated and skewed pattern of occurrence and distribution up to matuirty stage of the crop (Table 1 A). The first two peak levels occurred exclusively on the *Olitorius* cultivars (C.G., Nepal-1). In the 3rd phase (generation) its existence along with remaining cultivars, was also observed on C. G. and Nepal-1. As a pooled estimate (seasonal mean) the *Olitorius* cultivars had the higher level of incidence of *S. obliqua*. The damage mainly restricted to the *Olitorius* cultivars (Table 1 B) which skeletonised the leaves and defoliated the plants. The female of *S. obliqua* preferred to oviposit on the leaves of the *Olitorius* cultivars rather than on *C. Capsularis* and *H. Cannabinus*. However, in laboratory tests the larvae fed on the leaves of the remaining cultivars too.

Apanteles obliqua Wilk., and *Carcelia* Sp. were noted as parasites and *Cantheconidea furcellata* (Wolf.) as predator of *S. obliqua*.

(2) Diamond Bollworms (*Earias cupreoviridis* Walker).

It appeared during September on the *Olitorius* cultivars and bored into the main terminal shoot. Thereafter it occurred on the pods of the *Olitorius* and *Capsularis* cultivars during October-November. Infestation/plot with seasonal

Table 1. *Incidence of jute hairy caterpillar, Spilosoma obliqua (Walker), on different cultivars of jute*

Cultivar	(A) Post-sowing mean larval densities plot^{-1} in days										
	55 (Aug. 6)	72 (Aug. 13)	89 (Aug. 30)	98 (Sep. 8)	105 (Sep. 15)	127 (*) (Oct. 7)	137 (*) (Oct. 17)	148 (*) (Oct. 28)	161 (Nov.10)	168 (Nov.17)	Seasonal Mean (*)
C. G.	82.3	47.8	0.3	157.5	80.5	8.0 b	4.8 c	4.5 b	1.0	0	38.7 ab
Nepal-1	109.3	60.0	0	78.3	42.3	153.8 c	2.8 bc	1.8 ab	1.3	0.3	45.0 b
D-154	0	0	0	0	0	2.3 ab	2.5 bc	3.3 b	0.8	0	0.9 a
Nepal-2	0	0	0.3	0	0	1.3 ab	2.3 bc	2.5 b	0.8	0	0.7 a
Yue-Yuan No. 5	0	0	0.3	0	0	1,3 ab	1.8 ab	2.8 b	1.8	0	0.8 a
Sunkukra	0	0	0	0	0	0.3 a	0 a	0.5 a	0.3	0	0.1 a

	(B) Damaged (defoliated) plats per plot (% in parathesis)			
	(Aug. 6)	(Sep. 15)	(Oct. 17)	Seasonal Mean
C. G.	1.8 (0.07)	2.8 (0.12)	0	1.53 (0.06)
Nepal-1	1.0 (0.08)	0.3 (0.02)	2.8 (0.3)	1.37 (0.06)

(*) = Significant at 0.05 level of probability. Mean followed by the same letters are not significantly different.

and Sunkukra, respectively. It also appeared very rarely during October 1983 on cultivar Sunkukra. It was also observed on okra at Tarnab.

(3) Cotton Leaf Roller (*Sylepta derogata* Fab.)

It appeared during September to November on cultivar Sunkukra. Infestation with seasonal average in parenthesis/plot ranged from 0.3-14.5 (8.7) during the season.

(4) Grey Hairy Caterpillar (*Dasychirammendosa* Hub.).

It appeared during August to November with fluctuated level of occurrence. Larval densities/plot with seasonal average in parenthesis ranged from 0-1.3 (0.4), 0-1.0 (0.4), 0, 0-5 (0.1), 0, 0-1.0 (0.5) on all the six cultivars, respectively. Larvae were also observed on ber and cauliflower.

(5) Yellow Hairy Caterpillar (*Euproctis xanthorrhoea* Kollar)

It appeared during August to November with fluctuated level of occurrence. Larval densities/plot with seasonal average in parenthesis ranged from 0-1.5 (0.2), 0-1.5 (0.2), 0-0.3 (0.1), 0-0.3 (0.04), 0-1.3 (0.4) on all the six cultivars, respectivaly. Adults were also encountered in some of the replicates during October-November.

(6) Green Semilooper (*Anomis involuta* Walker).

It appeared during August to November with fluctuated and skewed level of existence. Larval densities/plot with seasonal average in parenthesis ranged from 0-0.3 (0.08), 0, 0-0.3 (0.2), 0-0.3 (0.08), 0-0.8 (0.4), 0-0.3 (0.08) on all the six cultivars, respectively.

(7) Shoot Webbing Leaf Roller (*Archips micaceana* Walker).

It attacked mainly the plants of *Olitorius* cultivars when they were 0.5-1.0m tall. The larvae of this species clasped the leaves together in the apical portion through webbing and fed internally. Larvae were observed on brinjal, okra, apricot, apple and soybean.

In addition to the above pests the following species were noted as rare and occasional pests :

(8) *Anomis flava* Fab. on Sunkukra, (9) *Farias insulana* Boised. on Sunkukra, Nepal-2 and Yue-Yuan No. 5, (10) *Euproctis fraterna* Moore and (11) *E. scintillans* (Walker) on Sunkukra and (12) *Psalis pennatula* (Fab.) on Nepal-2 and Yue-Yuan No. 5 cultivars of jute.

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