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A SHORT NOTE

SOME STUDIES ON POPULATION DYNAMICS OF MAJOR INSECT PESTS OF COTTON AT LYALLPUR

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Population of cotton whitefly and cotton jassid fluctuated between 1.0 and 4.0, and 1.1 and 3.2 per leaf, respectively, during June to October, 1970. It reached its maximum in the 2nd half of July in case of both the insects. Pink bollworm infestation was very low. Spotted bollworm infestation on squares, flowers and bolls during August through September ranged from 0.55 to 4.4, 4.4 to 12.3 and 3.0 to 8.07 per cent, respectively.

INTRODUCTION

Cotton, suffers heavy losses due to cotton jassid, whitefly and pink and spotted bollworms. Efforts directed towards finding out effective and economic control of these pest insects with insecticides have not been successful because these did not include the study of population behaviour of these pest species. Present study is a step towards that direction.

Hussain and Lal (1940) stated that cotton was the most favourite host of *Empoasca devastans* Dist. Verma and Afzal (1940) reported that sweeping with hand-net for comparative estimation of jassid infestation on different varieties of cotton served the purpose well. Khan (1944) stated that *Earias insulana* B. and *Earias fabia* F. were found on cotton throughout the Punjab Province. The proportion of these two species varied considerably in different months of the year depending on the variable metereological conditions like temperature and rainfall. Afzal and Ghani (1949) found that the jassid population increased by delaying the sowing time or with the increase in the number of irrigations applied to the crop.

MATERIALS AND METHODS

The observations on the population of major insects pests of cotton viz. whitefly, jassid, pink and spotted bollworms were recorded at fortnightly

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intervals from June to October, 1970, by randomly selecting 10 plants from each plot and counting the number of each insect pest on them. The methods employed for counting the population of insects consisted of (i) traping the insects on the glass slides which were previously smeared with glycerine. (ii) adhering one inch sticky tape on the lower and upper surface of the leaves and (iii) counting the insects with the aid of a hand lense with the minimum disturbance to avoid dislodging of anchoring insects.

RESULTS AND DISCUSSIONS

The field data, Fig. 1, showed that the average population of cotton whitefly was 1.9 insects per leaf during the month of June and it rose to 4.0 insects per leaf by the 2nd half of July. The population, however, declined thereafter,due to the advent of monsoon rains. By the end of October, the population was recorded as 1.0 insect per leaf. Jassid, similarly, showed a maximum population of 3.2 insects per leaf during the second week of July. The population of jassid also declined, thereafter, until it reached 1.1 insects per leaf in the first half of September and 1.4 insects per leaf during the month of October.

The spotted bollworms (Fig. 2) were found to be most abundant; the highest percentage infestation of squares, flower and bolls was, respectively, 4.4, 12.3 and 8.07 percent during the 1st week of September which declined to 4.2, 4.4 and 6.10 percent by the end of September. The infestation of bolls by this insect was recorded to be 4.10 per cent in October. The maximum attack of pink bollworm on bolls (2.3 per cent) was observed during the second week of October.

The present studies have shown that 2nd half of July and first half of August is appropriate time for the control of jassid and white flies. The infestation of spotted bollworm was highest in September and thus the application of suitable insecticides at that time would be useful for the control of this pest. Further studies of more comprehensive nature on the population behaviour of major insect pests of cotton and amount of damage done by them are needed to guide field staff on the judicious use of insecticides.

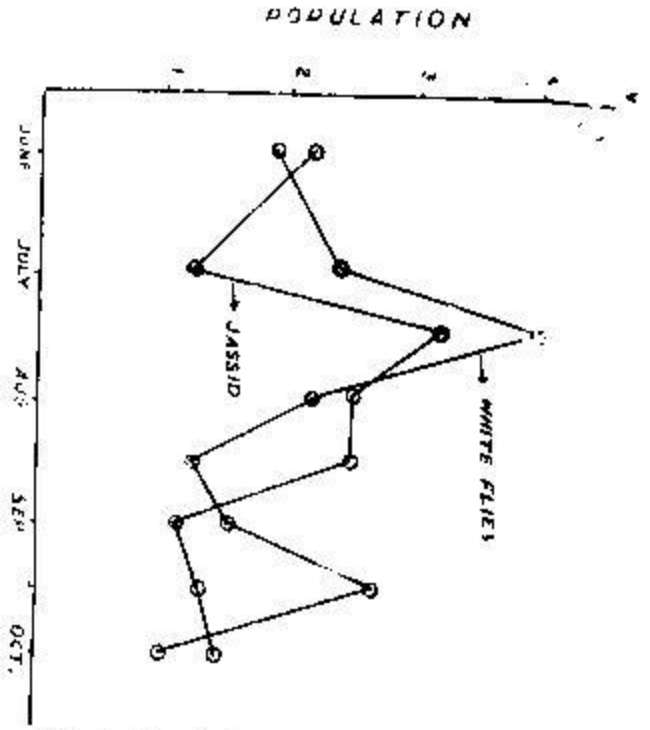

Fig. 1. Population fluctuations of whiteflies and jassids on cotton.

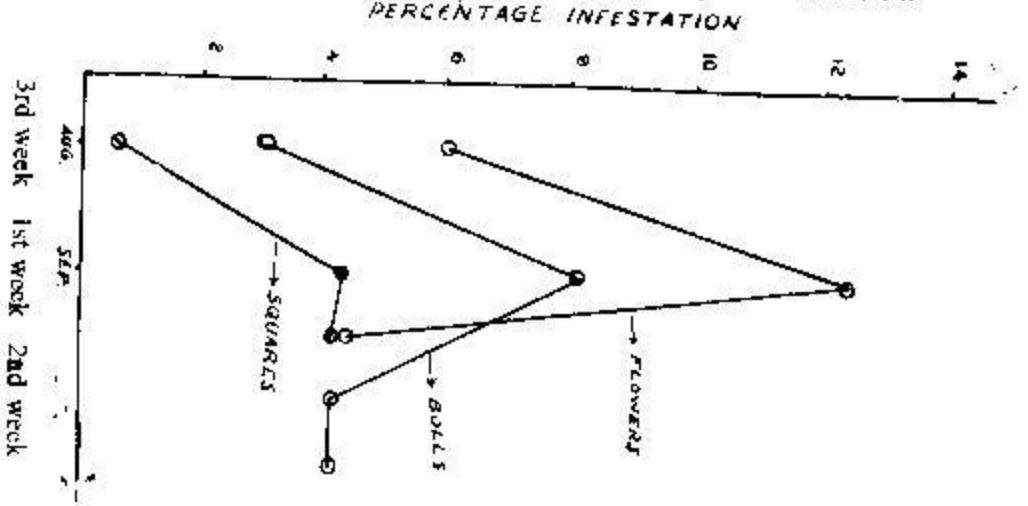

Fig. 2. Spotted bollworm infestations on cotton squares, flower and bolls.

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