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POPULATION DYNAMICS OF JASSID, *AMRASCA BIGUTTULA BIGUTTULA* (ISHIDA) IN OKRA, *ABELMOSCHUS ESCULENTUS* (L.) AND ITS CORRELATION WITH METEOROLOGICAL PARAMETERS

Anil Kumar Saroj, A. K. Singh*, D.C. Singh and Pankaj Kumar

Department of Entomology, N.D.U.A.&T., Kumarganj, Faizabad-224 229 (India)

Abstract

Jassid population started since the vegetative stage and continued till harvesting stage of the crop and was noticed for the first time during 32nd SW and continued up to 41stSW till the harvest of the crop. The minimum (0.20 jassid/leaf) and maximum (12.70 jassids/leaf) jassid population were recorded during 32nd SW and 37th SW, respectively. Jassid population showed non-significant positive correlation with minimum temperature (0.291), maximum temperature (0.371), relative humidity (0.071) and non-significant negative correlation with rainfall (-0.282).

Key words: Weather parameters, jassid, okra.

Introduction

Okra, *Abelmoschus esculentus* (L.) Moench commonly known as Bhindior lady's finger, belongs to family Malvaceae, is a popular vegetable crop due to its high nutritional and medicinal values. In India, okra is cultivated throughout the country for its immature tender fruits, occupying an area about 5.32 lakh ha with the production of 63.46 lakh tonnes and productivity 11.9 MT/ha. In Uttar Pradesh, the area of okra is about 0.12 lakh ha and production of 1.48 lakh tonnes, with productivity of 12.2 MT/ha (Anonymous, 2014). The okra plants are used for controlling diseases like stone in the kidney, leucorrhoea, backache and goiter in human beings.

The crop is attacked by number of insect pests right from germination to harvesting. About 13 insect pests have been reported to cause damage to okra (Mandal *et al*., 2006). The jassid, *Amrasca biguttula biguttula* cause damage right from an early seedling stage to the fruit setting stage, resulting in a loss of 50% in yield (Bindra and Mahal, 1981).

In order to prevent the infestation of the jassid and to produce a quality crop, it is essential to manage the jassid population at appropriate time with suitable measures. As such the studies were undertaken to find out the population dynamics of jassid and correlation between jassid population and weather parameters to know the most favourable condition for buildup of jassid population which is helpful in developing pest management strategies.

***Author for correspondence :** E-mail : awanisingh15@gmail.com

Materials and Methos

The present investigations were conducted at three farmers' fields of village Pithla, Kumarganj, Faizabad (Uttar Pradesh) on okra crop under field conditions, during *Kharif*, 2015. Jassid population was recorded in early morning hours by visually counting on five randomly selected plants at each farmer's field at weekly interval starting with 20 days after sowing till harvesting, in terms of number of insects/leaf. Three leaves were observed from each plant (one each from the top, middle and bottom canopy of the plant).

Results and Discussion

Studies on population dynamics of jassid revealed that population of jassid started since the vegetative stage and continued till harvesting stage of the crop. The population of jassid was noticed for the first time during 32nd SW and continued up to 41st SW when the crop was

Table-1: Population dynamics of jassids at different farmer's field and weather parameters during *Kharif*, 2015

Date of Observations	SW	Mean jassid population/leaf at different farmer's field			Mean Jassid population	Abiotic factors		RH %	Rainfall (mm)
						Temp. °C			
		1	2	3		Min.	Max.		
06-08-2015	32	0	0.2	0.4	0.20	25.9	36.3	75.7	13.8
13-08-2015	33	2.2	3.4	2.8	2.80	26.5	35.5	79.7	29.2
20-08-2015	34	5.2	6.6	5.8	5.87	29.4	34.2	76.3	23.6
27-08-2015	35	7.2	8.6	8.2	8.00	26.2	34.9	77.8	0
03-09-2015	36	10	10.8	10.2	10.33	24.5	36.6	64.6	0
10-09-2015	37	12.2	13.2	12.8	12.70	25.7	36.0	73.1	0
17-09-2015	38	10.6	11.2	10.8	10.87	25.8	35.9	69.0	15.2
24-09-2015	39	6.6	7.8	6.8	7.06	22.3	35.7	60.9	0
01-10-2015	40	2.6	3.8	3.6	3.33	21.0	31.2	58.6	0
08-10-2015	41	1.2	2.0	1.60	1.60	20.3	34.3	56.9	0

Table 2: Correlation between jassid population and abiotic parameters during *Kharif*, 2015

Insect	Temperature (°C)		Relative humidity (%)	Rainfall (mm)
	Minimum	Maximum		
Jassid	0.291	0.371	0.071	-0.282

harvested. The minimum (0.20jassid/leaf) and maximum (12.70 jassids/leaf) jassid population were recorded during 32nd SW (1st week of August) and 37th SW (2ndweek of September), respectively. The result of present studies corroborates with that of Yadav *et al*. (2007)

Observations

Who had reported that the jassid activity started from the first week of August and maximum population of jassid was observed in the second week of September. The results are also inconformity with that of Meena *et al*. (2010) who had noticed that the seasonal incidence of jassids started in first week of August and was being active till harvesting and maximum jassid population was observed in third week of September. The correlation studies revealed that jassid population had non-significant positive correlation with minimum temperature (0.291), maximum temperature (0.371), relative humidity (0.071) and non-significant negative correlation with rainfall (-0.282). The results are inconformity with that of Meena *et al*. (2010) who had found non-significant correlation of jassid population with maximum and minimum temperature, relative humidity and rainfall. The results of present studies are in partial accordance with Verma *et al*. (2010) who found that jassid population was positively correlated with maximum and minimum temperature, and negatively correlated with relative humidity and rainfall.

References

Anonymous (2013-14). National Horticulture Production Database 2013-14, Ministry of Agriculture, Govt. of India. pp. 152-159.

Bindra, O.S. and M.S. Mahal (1981). Varietal resistance in egg plant (brinjal) (*Solanum melongena*) to the cotton jassid (*Amrasca biguttula biguttula*). *Phytoparasitica,* **9(2)** : 119-131.

Mandal, S.K., S.B. Sah and S.C. Gupta (2006). Screening of okra cultivars against *Earias vitella*. *Annals of Plant Protection Sciences,* **14(2)** : 471-472.

Meena, N. K., P. M. Kanwat, A. Meena and J.K. Sharma (2010). Seasonal incidence of jassids and white flies on okra, *Abelmoschus esculentus* (L.) Moench in semi-arid region of Rajasthan. *Annals of Agri. Bio. Research*, **15(1)** : 25-29.

Verma, S.C., M. Thakur and H.S. Kanwar (2010). Impact of weather factors on population buildup of the cotton jassid, *Amrasca biguttula biguttula* (Ishida) on okra under mid-hill conditions of Himachal Pradesh. *Pest Management and Economic Zoology,* **18(1/2)** : 295-299.

Yadav, J.B., R.S. Singh and R.A. Tripathi (2007). Effect of weather parameters on incidence of pest complex of okra. *Annals of Plant Protection Sciences*, **15(2)** : 477-478.