

RESEARCH ARTICLE

Population dynamics of insect pests of green gram [*Vigna radiata* (Linn.) Wilczek] in semi-arid region of Rajasthan

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ABSTRACT

Three insect pest species, viz., jassid, *Empoasca motti* Pruthi; whitefly, *Bemisia tabaci* (Genn.) and thrips, *Caliothrips indicus* Bagnall appeared as major insect pests of green gram, *Vigna radiata* (Linn.) Wilczek in the semi-arid region of Rajasthan. The population commenced from first week of August and remained throughout the crop season in both the years (*Kharif*, 2006 and 2007). The infestation gradually reached at peak (12.40 jassids, 10.80 whiteflies and 9.40 thrips/ three leaves during *Kharif* 2006 and 13.2 jassids, 11.20 whiteflies and 9.87 thrips/ three leaves during *Kharif*, 2007) in the first week of September during both the years. Among natural enemies, the populations of *Chrysoperla carnea* (Steph.) and *Coccinella septempunctata* L. were high, whereas, *Monomorium indicum* (Linn.), *Menochilus sexmaculatus* (Fab.) and *Brumus suturalis* Fab. were low. The correlation co-efficient (r) of jassid, whitefly and thrips populations was worked out with weather parameters, viz., maximum and minimum temperature and relative humidity. The data indicated a significant negative correlation of jassid, whitefly and thrips with maximum temperature ($r=-0.61$, -0.56 and -0.54 in 2006 and -0.65 , -0.78 and -0.52 in 2007, respectively) and positive significant correlation of thrips with minimum temperature ($r=0.67$ in 2006 and 0.56 in 2007, respectively). The data indicated a positive significant correlation of jassid, whitefly and thrips with relative humidity ($r=0.62$, 0.63 and 0.68 in 2006 and 0.70 , 0.56 and 0.72 in 2007, respectively).

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INTRODUCTION

Green gram (Synonyms: golden bean or mung bean), *Vigna radiata* (Linn.) Wilczek (Family: Leguminosae, Sub-family: Papilionaceae) is the pulse crop being grown from antiquity and important Asiatic *Vigna*. India is the largest producer, importer and consumer of pulses in the world, accounting 25 per cent of the global production, 15 per cent trade and 27 per cent consumption as sizeable population in the country still depends on vegetarian diet to meet its protein requirement. Rajasthan is a major grower of the pulses in general and green gram in particular. In Rajasthan, the total area under pulses was 20, 28,329 hectares with the annual production of 5, 02,521 tonnes, whereas, the total area under green gram was 7, 50,847 hectares with the total production of

2, 71,112 tonnes (Anonymous, 2007). A meagre amount of work has been done on seasonal incidence of the insect pests and their predatory fauna associated with this crop. The effect of abiotic factors on the incidence of insect pests provide suitable know how about the congenial weather conditions for development of insect pests, thus immensely helpful in formulating the management strategy against them.

MATERIALS AND METHODS

The present investigation was carried out at the Agronomy farm of S.K.N. College of Agriculture, Jobner, during *Kharif*, 2006 and 2007 to monitor the insect pests on green gram, [*Vigna radiata* (Linn.) Wilczek]. The variety RMG-62 was sown on normal date of sowing, i.e., 8th July during