INTERNATIONAL JOURNAL OF PLANT PROTECTION / VOLUME 6 | ISSUE 1 | APRIL, 2013 | 159-162

RESEARCH ARTICLE

Influence of physical traits of certain green gram varieties on the life parameters of leaf folder (*Nacoleia vulgalis* Guen.)

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ARITCLE INFO

Received : 11.01.2013
Revised : 03.04.2013
Accepted : 15.04.2013

Key Words :
Fecundity,
Green gram,
Growth index,
Larval period,
Nacoleia vulgalis,
Pilosity

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ABSTRACT

Physical traits of crop varieties influence the level of susceptibility of the varieties to the pest species. Investigations were carried out to find the possible influence of physical traits of certain green gram varieties on the life parameters of *Nacoleia vulgalis*. It was evident from the data that the varieties had significant affects on larval period and fecundity of *Nacoleia vulgalis* while other life parameters of *Nacoleia vulgalis viz*., pupal period, reproductive rate, larval survival, adult emergence and growth index were not significantly affected. Correlation studies revealed that the pilosity of lower surface of young leaves, leaf area of older leaves, leaf thickness, veinlet density and days to 1st flowering had exhibited significant correlations with the larval period of *N. vulgalis*. while the intensity of green colour of leaves, leaf area of medium aged leaves and number of trifoliate leaves showed significant correlations with fecundity. Pilosities of older leaves and medium aged leaves, red and blue colour intensities and leaf area of young leaves did not have any significant effect on larval period and fecundity of *N. vulgalis*.

How to view point the article : Das, Purnima, Dutta, S.K. and Handique, G. (2013). Influence of physical traits of certain green gram varieties on the life parameters of leaf folder (*Nacoleia vulgalis* Guen.) . *Internat. J. Plant Protec.*, **6**(1) : 159-162.

INTRODUCTION

Green gram [*Vigna radiata* (L.)Wilczek] is an important pulse crop of Assam. It is grown both in summer (February / March sown) as well as in *Kharif* (August /September sown) of the state. Insect pest attack is a prime factor for low productivity of this crop. Among various insects attacking green gram, the leaf folder (*Nacoleia vulgalis* Guen.) is considered to be an important one. The grain yield loss due to this pest in green gram is 365.65kg to 374.40 kg /ha (Dutta, 1994). Available information regarding the association of physical traits of green gram varieties with life parameters of this pest is rather limited. Physical traits of crop varieties influence the biological parameters of phytophagus insects. Such information is indicative of the level of susceptibility of the varieties to the pest species. Persual of literature reveals that there is a paucity of information available on this aspect of *N. vulgalis* in Assam. In the present investigation, an attempt has been made to determine the possible association of physical factors of certain green gram varieties and life parameters *of N. vulgalis.*

MATERIALS AND METHODS

A field collected egg mass of *N. vulgalis* was kept for hatching along with leaf substrate in a Petridish (15 cm diameter) under laboratory conditions. On hatching, the first instar larvae were transferred to separate Petridishes (10 cm diameter), each of which contained fresh leaves of different green gram varieties *viz*., ML-131, ML-729, K-851, AAU-34, PMB-5, ML-5, PM-2, IIPRM-4, SG-1, PMB14 and Kopergaon. 11 numbers of larvae were reared separately by providing leaves of respective varieties till they became full grown. The larval period was then recorded. Three replications were kept for each variety. The full fed last instar larvae were transfered along with leaves into glass chimneys (22 cm x 10 cm) for pupation. The glass chimneys were covered with muslin cloth around their mouth so that the emerged adults could not