S D Mohapatra et al., Agrotechnol 2014, 2:4
http://dx.doi.org/10.4172/2168-9881.S1.011

OMICS Group Conferences
Accelerating Scientific Discovery

3rd International Conference on
Agriculture & Horticulture
October 27-29, 2014 Hyderabad International Convention Centre, India

Effect of different levels of nitrogenous fertilization on the extent of leaf damage by leaf folder, *Cnaphalocrocis medinalis* in rice genotypes

S D Mohapatra[1], J Meher[1] and Rakesh Kumar[2]
[1]Central Rice Research Institute, India
[2]National Centre for Integrated Pest Management, India

Nitrogen is one of the most important factors in development of herbivore populations. The long-term excessive application of nitrogen fertilizers in rice plants can normally increases the feeding preference, food consumption, survival, growth, reproduction, and population density of major insect pests. The optimal regime of nitrogen fertilizer in irrigated paddy fields improves the fertilizer-nitrogen use efficiency and reduces the environmental pollution. The present study was undertaken to understand the effect of nitrogen fertilizer on the incidence of leaf folder in different rice genotypes at different levels of nitrogen. Twenty-five lines of rice were evaluated against leaf folder in four nitrogen levels and compared with six popular varieties such as Daya, Birupa, Surendra, Indira, Pusa 44 and Vijetha. The field experiment was laid out in a randomized block design with four levels of nitrogen viz., 0, 60, 120 and 180 kg N ha-1 replicated twice during rabi 2013 at CRRI, Cuttack. Observations on damaged leaves and total number of leaves from 20 randomly selected hills in each line were recorded and the per cent leaf folder damage was calculated. The leaves which are damaged by 2/3 portion and more were considered as damaged one. The effect of nitrogen on the incidence of leaf folder was clearly addressed in the present study. Among the genotypes screened, no leaf folder damaged leaf was observed in CR3568-1-2-1-1-1 at all the levels of nitrogen, whereas < 1% leaf folder damaged leaf was recorded in CR3516-11-1-1-3-1, CR3510-2-1-1-1-1, CR 3580-11-1-1-1-1, CR3500-21-1-2-1-1 and CR3564-1-2-4-2-1 at 180 kg N ha-1. Except popular varieties, all other genotypes showed no leaf folder damage at 0 kg N ha-1. Hence, higher level of nitrogenous fertilizer application results significantly higher leaf folder damage. There is the need to develop optimized management practices for increasing nitrogen fertilizer use efficiency in rice production, which could reduce the input of fertilizer, and decrease the application of pesticides as lower occurrence of pests, finally reduce loss of yield and increase farmers' income. The genotypes those showed zero and/or low level of leaf folder damage may be the used as the potential donors in the breeding programme.

Keywords: Leaf folder, nitrogen fertilizer, rice, extent of damage, donor.

Biography

S D Mohapatra has obtained his Master degree in Agricultural Entomology from G B Pant University of Agriculture & Technology, Pantnagar, India in 1998 and PhD in Entomology from Banaras Hindu University, Varanasi in 2001. He is the presently working as Senior Scientist in Agricultural Entomology at Central Rice Research Institute, Cuttack, India, a premier ICAR organization. He has over 10 years of teaching, research experience including working at Indian Agricultural Research Institute, New Delhi, India, G B Pant University of Agriculture & Technology, Pantnagar, India, Indian Institute of Pulses Research, Kanpur, India. He is the recipient of both CSIR & ICAR-Senior Research Fellowship for Doctoral Research. He has published more than 20 papers in reputed journals.

sdmento73@gmail.com