

International Journal of Agricultural Sciences Volume **8** |Issue 2| June, 2012 | 436-440

Assessment of brown spot, neck /panicle blast and stem borer in scented rice under organic field conditions

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Abstract : Rice (*Oryza sativa* L.), a semi-aquatic annual grass native to tropical Asia, is the world's single most important food crop and a primary food source for more than one third of world's population. India possesses an immense wealth of basmati and non basmati aromatic rice varieties and land races exhibiting a wide variability in their grain quality and cooking characteristics. Scented rices grow best and produce finest quality grains under cool, humid conditions, which are common in Himalayan Tarai of U.P. and Uttarakhand and foot hills of Vindhya Hills. Among all scented rices aroma is considered as most important quality parameter of high quality rice. The major aromatic compound responsible for aroma is considered is 2-acetyl-1- pyrroline, which is degraded by excessive nitrogenous fertilizers. To avoid degradation of 2-acetyl-1- pyrroline and ultimately aroma organic field conditions are preferred. In present study forty five varieties/lines of Basmati and non Basmati aromatic rices were assessed for brown spot, neck/panicle blast and stem borer. In present study for neck/panicle blast 25 varieties/ lines were resistant, 13 were moderately resistant while 05 were moderately susceptible and only 02 were susceptible. In case of brown spot these numbers were 20, 17, 05 and 03, respectively. In assessment of stem borer maximum (18) varieties/lines were moderately resistant, 12 were moderately susceptible, 10 were resistant and only 05 were found susceptible. Some non Basmati scented rice varieties/lines like Tilak Chandan 3048, Kalanamak 3121, Pokkali U etc, shown resistance against more than one disease/pest. Based on this study it was revealed that besides Basmati rice other non Basmati aromatic rice varieties should also be promoted by scientists and adopted by more and more farmers so the loss by major diseases and pests can be minimized and consumers can get better aromatic rice at lower cost and simultaneously we can maintain our traditional non basmati aromatic rice germ plasm.

Key Words : Scented rice, Brown spot, Neck/Panicle blast, Stem borer, Aroma

View Point Article : Singh, Yogendra (2012). Assessment of brown spot, neck /panicle blast and stem borer in scented rice under organic field conditions. *Internat. J. agric. Sci.*, 8(2): 436-440.

Article History : Received : 06.03.2012; Revised : 29.04.2012; Accepted : 15.05.2012

INTRODUCTION

More than 90 per cent of the world's rice is grown and consumed in Asia, where 60 per cent of the calories are consumed by 3 billion Asians (Khush, 1997). India is one of the world's largest producers of white rice, accounting for 20 per cent of all world rice production. India stands first in area, second in production, followed and preceded by China on these two aspects. The other major rice growing countries are Indonesia, Vietnam, Bangladesh, Thailand, Myanmar and Philippines among Asian countries. Now these days rice is excessively produced in whole of the world. Rice grain quality is a major factor from consumer as well as marketing point of view which may be affected by infection of various disease and pests at different growth stages of plant. Scented rice, which has stronger aroma and kernel elongation than ordinary rice, has more in demand in different countries of the world. Scented rices grow best and produce finest quality grains under cool, humid conditions, which are common in Himalayan Tarai of U.P and Uttarakhand and foot hills of Vindhya hills. Hence, Himalayan Tarai of Uttar Pradesh (U.P) and Uttarakhand is probably the place of origin of aromatic rices (Khush, 2000). All types of traditional scented rices *viz.*, small and medium grained non Basmati and long grained Basmati