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Research Article

Prevalence of diseases in rice in the Jabalpur region

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ABSTRACT

Incidence of sheath blight, false smut and kernel smut disease was recorded on 25 rice varieties and 7 rice hybrids grown in Kharif 2008 at Jabalpur. The incidence of sheath blight ranged from 3.0 to 29.0 per cent. The incidence of false smut disease ranged from 3.0 to 12.0 per cen. Under field conditions the kernel smut infection was recorded in 9 varieties and 16 varieties were free from the rice bunt disease. With harvested seeds, kernel smut disease was recorded in the seeds of 7 varieties and rest of the varieties had no association of the fungus. In hybrids, two varieties were free from the infection of sheath blight and for false smut, 5 rice hybrids were free from the infection. Under field conditions, rice bunt was noticed in JRH 5 and JRH 4 (0.5%) infection. In rice hybrids with harvested seeds for rice bunt, a similar trend was noticed and the pathogen was observed in JRH 4 and JRH 5 (0.01%).

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INTRODUCTION

Globally, rice (*Oryza sativa* L.) is the foremost cereal food that forms an integral part of the diet. It is one of the most important grain crops in the world. Rice being a stable food crop of India, plasy significant role in the food security system. Rice an integral part of daily Indian dietary, is a staple food of more than 60 per cent population. (Anonymous, 2006).

Rice crop is subjected to many diseases in its growth period (Anonymous, 1976; Ou, 1985). Many diseases are important on account of their prevalence all over the country as well as the losses associated with their occurrence. Every year 10 to15 per cent loss in yield is caused by the important diseases. Majority of the serious diseases of rice in India are caused by fungi. Potential disease problem include blast, sheath blight, false smut, kernel smut, bacterial diseases and grain discolorations (Chahal and Pannu, 2008).

In sheath blight disease typical brown lesions are observed on the sheath of the base of culums near ground level. The lesions on the sheath initially are greenish grey, forming oval or ellipsoidal discoloration. The symptom of false smut is confined to the ears. As a result of infection, the individual seed is transformed and developed into the greenish velvety spore ball and later on the yellow greenish spore mass turn into black mass. In kernel smut, the symptoms initiated

by pathogen were recorded on kernel. The infected grains contain the black powdery mass of spores. At maturity, the spores from the infected grains are scattered on the leaves and the spore mass adhere on the other grains (Biswas, 2004; Singh, 2004; Agrios, 2004; Mew and Gonzales, 2002; Ou, 1985).

MATERIALS AND METHODS

The present study was under taken to investigate the extent of diseases associated with rice varieties and hybrids and their distribution. The prevalence of diseases was determined at Jabalpur and other districts in different varieties and hybrids during *Kharif* 2008.

The prevalence of these diseases was determined through random survey method. In a field, 100 plants were randomly selected and out of these, diseased plants were counted, recorded and identified at periodical basis.

The following places were visited during survey of diseases of rice and hybrids grown in farmer's field and research fields :

Random field survey:

In random survey, farmers fields were visited at 8 districts/ locations including Jabalpur, Katni, Rewa, Seoni, Balaghat, Badgoan, Chhindwara, Damoh and Shahdol. Incidences of