



## RESEARCH ARTICLE

# Occurrence of rice false smut in Bundelkhand region

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## ABSTRACT

False smut of rice caused by *Ustilaginoidea virens* (Cke.) Tak., once considered as a minor disease, has now become a serious disease in rice growing area of M. P. For the past three years, the disease incidence has been reported at many places in an alarming proportion. It appeared for the first time in moderate to severe form at district Datia in 2009. A survey was carried out by KVK Scientists in October 2009 to assess the extent of false smut infection in the district. About 800 ha area of paddy fields were severely affected due to this disease. The highest disease incidence (61.20%) and yield loss (14.18%) was observed in late transplanted paddy fields when the relative humidity was around 90 per cent. Disease incidence and yield loss was higher in scented variety (Pusa 1121 and Pusa Sugandha-3) in comparison to coarse grain variety, Kranti. At severe infection, most of the grain in the panicle is affected by the disease. The disease not only reduces the yield but also affects the quality of grain or seed.

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## INTRODUCTION

False smut of rice caused by *Ustilaginoidea virens* (Cke.) Tak. (Rush *et al.* 2000) has been recorded in all rice-growing countries all over the world. It has been reported in Louisiana in 1906 and since that time the disease occurred sporadically. The disease is favoured by high relative humidity (around 90%) and increased by even higher humidity (Singh *et al.*, 1987; Bhagat and Prashad, 1996; Yashoda *et al.*, 2000) and rainfall, temperature between 25 to 30°C (Yashoda *et al.*, 2000), late sowing and high soil fertility (Ahonsi *et al.*, 2000). The disease affects the grain and induces serious losses. *U. virens* infects rice during the flowering stage, inhibits flower fertility and development of adjacent spikelets and decreases grain weight, and these were positively co-related with the yield loss.

The aim of this investigation was to survey the occurrence of false smut in the growing season in most of the rice cultivation area, to assess the yield losses as well as reaction of rice variety against the disease and role of planting

time in disease development in district Datia.

## MATERIALS AND METHODS

A survey was conducted in *Kharif* 2009 in rice cultivation block (Indergarh) of district Datia for the occurrence of rice false smut disease. The KVK scientists visited the fifteen villages of the rice growing areas in the month of October to find out the incidence and yield loss caused by the disease. Each rice cultivar represented five fields. At the time of harvesting, random sampling of 50-100 hills were selected and collected from every field as described by Dodan and Singh (1994). Disease assessments were carried out as mentioned by Singh and Dubey (1978). Number of infected tillers and infected grains in the panicles were recorded. During the survey studies, percentage of smutted tillers collected separately at random in different rice varieties. Fifty panicles from smutted and un-smutted tillers were collected separately for each variety to record the total grain weight, percentage of smutted balls and 1000-grain weight. The total number of grain