FUNGAL DISEASES OF RICE AND THEIR MANAGEMENT

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CHAPTER 14

Current Scenario of Progress and Prospects for the Management of Rice Kernel Smut Disease Resistance

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ABSTRACT

Rice kernel smut usually belongs to a minor category of plant disease but it can become epidemic in local areas especially in the rice-growing regions. It, also known as black smut or bunt of rice, was first illustrated by Takahashi from Japan and Anderson from the USA. This disease is caused by the fungus *Tilletia horrida* syn. *Neovossia horrida*. This disease exclusively affects grains. Although, only a few rice grains in the entire panicle are compromised by this disease. And, in most occasions, only a fraction of the grain is converted to black powder. Damage is caused in the rice grain endosperm being is generally substituted by masses of black fungal spores. This causes poor milling, grey-colored milled grain, and significant discoloration during the parboiling process. The pathogen is widespread and causes considerable qualitative and quantitative losses. Its damage can occur even at low levels of the disease in parboiling processes in which teliospores of the pathogen strain the grains, and thus making them not fit for human consumption. Yield losses caused by kernel smut ranges from <1 to 15% and can significantly reduce the grain quality. Quality issues with this disease focus on

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