Survey of bakanae disease incidence of rice plants in Taitung area and the improvement of its control measures

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Abstract

The bakanae disease of rice plants caused by *Gibberella fujikuroi* has commonly occurred in Taiwan in recent years, particularly in the districts of Taitung and Hualien. The average disease severity in rice paddy of Kaohsiung NO.139 and Taikeng No.2, the most widely planted cultivars in these areas, was higher than 10%. Infested seed has been proved to be the major primary inoculum source. The infestation of rice seeds by the pathogen was common and serious according to the investigation conducted in Taitung area in 2009. Different measures of seed treatment were conducted to compare their efficacy for controllingbakanae and phytotoxocity on rice seedlings. The results of various trials showed that soakingthe intact rice seeds with 62.5% cyprodinil + fludioxonil WG 1,000×, 25.9% tebuconazoleEW 2,000×, 25% prochloraz EC 1000× or 80% thiram WP 1,000× for 24 hrs significantlyreduced the occurrence of the disease without phytotoxicity. Tha results of this study showedthat hot water soaking of rice seeds with 60℃ for 10 minutes or 62℃ for 6 minutes alsoresultedin satisfactory efficacy on the control of bakanae disese of rice seedlings. They can beadopted in both organic and traditional farming of paddy rice for the production of healthyseedlings. For the prevention of worsening adverse effect of bakanae disease on riceproduction in Taiwan, the following aspects are recommended to be implemented: strengthening the research of the ecology of the pathogen and disease, developing detection technique for seeds-borne and soil-borne pathogens, establishing an effective seed certification system to ensure the production of healthy rice seeds, and breeding of high quality rice cultivars resistant to bakanae disease.

Key words: Rice bakanae disease, Seed treatment, Cyprodinil + fludioxonil, Tebuconazole, Prochloraz, thiram, Hot water treatment.

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