REVIEW ON CURRENT AVAILABLE CONTROL MANAGEMENTS OF RICE BLAST DISEASE IN MALAYSIA AND SEVERAL COUNTRIES

NOR FARAH HANA BINTI MUSLIM

BACHELOR OF SCIENCE (Hons.)
PLANTATION TECHNOLOGY AND MANAGEMENT
FACULTY OF PLANTATION AND AGROTECHNOLOGY
UNIVERSITI TEKNOLOGI MARA

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DECLARATION

This Final Year Project is a partial fulfilment of the requirements for a degree of Bachelor of Science (Hons.) Plantation Technology and Management, Faculty of Plantation and Agrotechnology, Universiti Teknologi MARA.

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Name: NOR FARAH HANA MUSLIM

I hereby declare that I have checked this project and in my opinion, this project is adequate in terms of scope and quality for the award of the degree of Bachelor of Science (Hons.) Plantation Technology and Management, Faculty of Plantation and Agrotechnology, Universiti Teknologi MARA.

Signature: .....

Name of Supervisor: DR. ZAITON SAPAK
Penyarah
Fakulti Perladangan dan Agroteknologi
Universiti Teknologi MARA (UiTM)

Position: .....

Date: 18/7/2016

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NOR FARAH HANA BINTI MUSLIM

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ABSTRACT

REVIEW ON CURRENT CONTROL MANAGEMENTS OF RICE BLAST DISEASE IN MALAYSIA AND SEVERAL COUNTRIES

Rice blast disease caused by *Magnapothe oryzae* is the most devastating disease attacked in rice (*Oryza sativa* L.) cultivation. Blast disease can cause approximately 60% - 100% of yield losses which can feed around 60 million of people. According to various projections, world need to produce 30% more rice by 2030. To meet this challenge, various management strategies should be enhanced and implemented. This review paper aims to discuss on current control managements of rice blast disease in Malaysia and other countries such as China, India, Japan and other countries. The scopes of this review are to identify the current management that was being applied in other countries and to review the potential control method that can be implemented in Malaysia. There are several cultural practices that have been implemented by various countries such as resistant variety, mixtures of variety or multi lines, water management, and nutrient management. Most of the countries are focusing on using resistant variety to control rice blast disease. Among the countries, China used most of resistant variety to control rice blast and one of them is Xiangzi 3150 and has been used as donor gene for 20 years. Malaysia also used the resistant variety such as MR 219 to manage rice blast. Control method of using mechanical approach is most unpopular method, perhaps in the future, our country should concern more about this approach which is has been proved in Japan by using fan-forced wind. The method is claimed to be effective in combating rice blast disease. For chemical control, most of the countries used Carbendazim and followed by Isoprothiolane and Tricylazole through a seed treatment and foliar sprays. Among these controls, chemical is the most commonly used by farmers due to its effectiveness and fast control rice blast disease. However, due to drawback of using the chemical which is high contain of toxicity cause environmental issue. Therefore, utilization of antagonistic bacteria as biological agents becomes researcher's interest to study the efficacy of biological agents to control rice blast disease. In addition, an advanced method for early detection of the disease such as serological method, molecular method, biomarker-based disease detection and plant properties also can be used in preventing the blast infection.