

Kritkittisak Phaitreejit 2011: Screening Thai Landrace Rice for Blast Resistance Gene *Pid3*, *Pigm(t)* and *Pi54* Using DNA Markers. Master of Science (Genetics), Major Field: Genetics, Department of Genetics. Thesis Advisor: Mr. Chatchawan Jantasuriyarat, Ph.D. 185 pages.

Rice blast caused by the fungal pathogen *Magnaporthe grisea*, is one of the most devastating diseases in rice production worldwide. Information on rice with disease resistant gene is important for rice cultivar development. The objective of this study was to identify rice blast disease resistant genes in 226 rice cultivars including 203 Thai landrace rice cultivars (19 cultivars from the North, 99 cultivars from the Northeast, 45 cultivars of floating rice from the Northeast and 40 cultivars from the South), 21 recommended rice and 2 susceptible checking (KDML105 and Nipponbarley) by using gene specific markers for blast resistant gene *Pid3*, *Pigm(t)* and *Pi54*. The results showed that 159 cultivars have at least one resistant gene and 4 cultivars have all three resistant genes. The outcome of this research will be very useful for development of new blast resistant elite rice cultivars in the future.

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Thesis Advisor's signature