Khammone Thiravong 2006: Genetic Diversity of Blast Isolates (*Pyricularia grisea*) from Laos and Quantitative Traits Loci Mapping of Selected Isolates in Rice (*Oryza sativa*). Master of Science (Tropical Agriculture), Major Field: Tropical Agriculture, Interdisciplinary Graduate Program. Thesis Advisor: Associate Professor Apichart Vanavichit, Ph.D. 67 pages.
ISBN 974-16-2525-1

Rice blast (*Magnaporthe grisea; Pyricularia grisea*) is one of the most important disease of rice worldwide and in Laos. Jao Hawm Nin (JHN) is cultivar grown extensively in Northern Thailand. This cultivar shown a high level of leaf blast resistance against 50 diverse blast isolates collected from rice growing areas at Savanakhet, Laos. To identify resistant genes, 587 F6 recombinant inbred lines (RILs) derived from a cross between KDML105 and JHN were used for QTL analysis to identify genomic regions containing the resistant genes. They were also used for disease screening using 3 representative isolates. Three genomic segments located on chromosomes 1, 11 and 12 were identified containing 7 resistant QTL for leaf blast. The QTL on chromosome 1 were located between RM246-RM104 markers with the resistant alleles contributed by JHN. On chromosome 11, QTL were localized between the intervals of RM21-RM224 marker contributed by JHN resistant alleles. The QTL on chromosome 12 were identified between OSR32-RM309 markers with resistant allele contributed by KDML105. Two genomic segments located on chromosomes 1 and 11 were detected to be associated with blast resistance against all isolates with LOD score ranging from 24.24 to 86.02. This finding indicates that the blast resistant QTL on chromosomes 1 and 11 in JHN might be of interest to Lao breeders.

Student's signature

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07/09/2006