

INHERITANCE OF RESISTANCE TO BACTERIAL BLIGHT
IN SOME RICE VARIETIES

By

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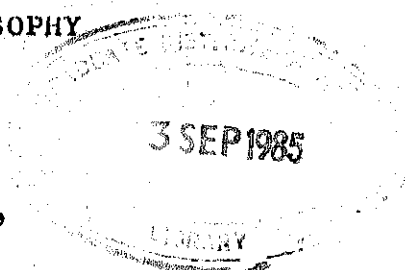
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ABSTRACT

RAJAPAKSE MUDIYANSELAGE TISSA RAJAPAKSE, Post Graduate
Institute of Agriculture, University of Sri Lanka,
Peradeniya Campus, December 1983. INHERITANCE OF
RESISTANCE TO BACTERIAL BLIGHT IN SOME RICE VARIETIES.

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Inheritance and allelism of genes for resistance to bacterial blight in eighteen resistant rice varieties were studied. The bacterial strain of PXO 61, which is representative of virulence group I (Pathotype I) of the bacterium in the Philippines was used to inoculate parental and hybrid populations. The hybrid progenies from the crosses of varieties resistant at all growth stages were inoculated at the maximum tillering stage. The hybrid progenies from the crosses of varieties resistant at booting and post booting stages were inoculated at the booting stage. Disease scores were taken two weeks after inoculation following the standard system of Kauffman et al. (1973).

Study of the mode of inheritance from the F_1 and F_2 populations of the crosses of test cultivars with TN1 revealed that single dominant genes confer resistance at all stages of plant growth in Baren, Khaokiknoe, Demala Bala Wee and UPR-171-2, and single dominant genes confer

resistance at booting and flowering stages in Rata 742, Nang Ngam, Y. Mouane and Liberian Coll B-20. Similarly it also revealed that single recessive genes confer resistance in test varieties Dhalashaita, Kumri, Narikel Peri, Barmulka, Korchamuri, Kaika Dhan, Mayawityi, Jeruk, Dudhraj and Madhumalati.

Test varieties were crossed with IR22 and IR1545-339, rice varieties homozygous for Xa-4 and xa-5 respectively, to determine allelic relationships.

Genetic analysis of F₂ populations from the crosses with IR22 revealed that single dominant genes in Baren, Khaokiknoe, Demala Bala Wee, UPR-171-2, Rata 742, Nang Ngam and Y. Mouane are allelic to Xa-4, and the single dominant gene in Liberian Coll B-20 is non allelic and segregates independently of Xa-4. Genetic analysis of F₁ and F₂ populations from the crosses with IR1545-339 revealed that single recessive genes in Dhalashaita, Kumri, Narikel Peri, Barmulka, Korchamuri, Kaika Dhan, Mayawityi, Jeruk, Dudhraj and Madhumalati are allelic to xa-5.

Allelic tests with Xa-4 suggest that the single dominant genes in Baren, Kaokiknoe, Demala Bala Wee and UPR-171-2 are allelic to Xa-4^a and the single dominant genes in Rata 742, Nang Ngam and Y. Mouane are allelic to Xa-4^b.