

Disease resistance

Varietal resistance to kernel smut disease of rice under natural conditions

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Seventeen promising rice cultivars were tested in the field against kernel smut disease caused by *Tilletia barclayana* (Bref.) Sacc. & Syd.


Disease incidence varied from variety to variety and from year to year. Maturity period had no marked effect on the incidence. No variety was highly resistant. All the early-, medium-, and

Reactions of certain rice cultivars to kernel smut. Rice Research Institute, Dokri-Sind, Pakistan, 1974-77 kharif seasons.

Reaction	Growth duration	Cultivar
Moderately resistant (1-5% incidence)	Early maturing	Kangni-27; IR661; IR8 (Mut.); IR841
	Medium	IR8; **IR6;**Jajai-77; IR506-61
	Late maturing	Bas. 197; Bas. 198; IR424; IR579-48-2; Bas. 370; J-77/D. Bas; IR579
Moderately susceptible (6-25%)	Early maturing	IR1561
	Late maturing	IR8/C-621

late-maturing varieties tested were moderately resistant, with disease incidence averaging 1 to 5% (see table). Only IR8/C-621 and IR1561 were moderately susceptible; their disease

incidence averaged 11.4 and 8.4%, respectively.

"IR-6," which is widely grown throughout both Sind and Punjab, showed an average infection of 1.72%. 


Reaction of six rice varieties to *Xanthomonas oryzae* in the field and in the greenhouse in West Java

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Nine isolates of *Xanthomonas oryzae* were tested for pathogenicity to six rice varieties in the field and in the greenhouse. The plants were inoculated by clipping 55 days after transplanting; data were collected 14 days later.

Five isolates induced a susceptible (S) reaction in the greenhouse on at least one variety that showed a resistant (R) reaction in the field (see table), and greenhouse scores tended generally to be higher than field scores. It may be that


the greenhouse offered conditions more favorable than those in the field for development of the fungus isolates. Temperatures in the greenhouse, for instance, ranged from 27 to 35°C (average 29°C) while those in the field ranged from 23 to 28°C (average 25°C).

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Donors of resistance to rice tungro

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In greenhouse studies in India, the cultivars Kataribhog, Latisail, Pankhari 203, Kamod 253, Ambemohar 159, and Ambemohar 102 were identified as

donors of resistance to rice tungro and have been extensively used in the breeding program. When subjected to infestation pressures in the field at Cuttack, the cultivars except Kataribhog were found to be less resistant than 16 other highly resistant cultivars, viz., ARC 7125, ARC 7140, ARC 10342, ARC 13560, ARC 13804, ARC 13820, ARC 13901, ARC 13959, Ac 58, Ac 982, Ac 3541, Ac 4108, Ac 4163, Ptb 18, T 371, and T 397. The 16 cultivars were identified at Cuttack after rigorous screening of about 4,000 cultivars under high disease pressure artificially induced under field conditions. The new resistance donors can be useful in a breeding program and can also be used as differential varieties for identification of rice tungro virus strains. 

Reactions of nine isolates of *X. oryzae* on six varieties tested in the greenhouse and in the field, Sukamandi, West Java, 1977.

Variety	Reaction score ^a of isolate ^b																	
	1		2		3		4		5		6		7		8		9	
	G ^c	F	G	F	G	F	G	F	G	F	G	F	G	F	G	F	G	F
TN1	x	x	9	9	9	7	7	9	9	5	9	9	9	9	9	9	9	9
C4-63	5	x	9	9	9	9	7	5	9	5	7	9	9	9	9	9	9	9
Pelita I/1	3	x	5	5	7	3	x	x	3	x	3	3	9	3	9	3	3	3
IR26	x	x	3	3	1	3	x	1	x	1	5	3	7	3	3	3	3	3
IR29	x	x	3	3	5	3	1	1	1	1	3	3	3	3	3	3	3	3
IR30	x	x	9	3	5	3	1	x	1	x	5	3	5	3	5	3	3	3

^aScore: 1 = R (resistant); 9 = S (susceptible); x = no infection. ^bIsolates: 1 = Parakan; 2 = Purwokerto; 3 = Jalaksana; 4 = Mandiraja; 5 = Indramayu; 6 = Pringsurat; 7 = Tambak; 8 = Sukamandi; 9 = Pacet. ^cG = in the greenhouse; F = in the field.