Table 2 (continued)

Line or variety	Pedigree or origin	Reaction[a] to Stem rot	Reaction[a] to Bacterial blight
HAU 6-163-2	(Jaya/Palman 246)	9	9
UPRM 202	(Basmati Mutant)	9	5
UPRM 500	Hansraj Mutant	9	5
PAU 1-608-A	(Basmati 370/IR8-36)	7	5
PAU 41-30-6-2-5	(Phulpattas 72/Mutant 65)	9	9
PAU 128-1191-PR 303	(IR305-3-17-1-3/IR661-1-140-3)	1	5
CRR 89-5-1-1 RPSC 14	(Ratna/Domsiah)	3	5
CRR 89-5-4-1 RPSC-51	(Ratna/Domsiah)	3	5
CRR 89-5-4-2 RPSC-52	(Ratna/Domsiah)	9	7
CR 167-10	(Ratna/Early Prolific)	5	3
CR 206-6176-260	(Vijaya/Domsiah)	1	3
CR 209-6253-262	(RatnalDomsiah)	5	3
FH 661		9	7
RP 967-4-1-2-4	(Improved Sabarmati/Sona)	9	3
ADT 32	(IR20/Pusa 33)	9	5
ADT 14166	(Pusa 140/Pusa 33)	3	9
ADT 14185	(Pusa 140/Ratna)	5	5
TRB 63	Basmati Mutant	9	5
SST_1 - 1898	Punjab	9	7
SST_1 - 1906	Punjab	3	7
SFC III	(IR8/NP 49)	9	1
R 575	Himachal Pradesh	1	7
O 12990-2/6-10-2	(IR8/Pankli 203)	1	7
IR4422-480-2	(IR2049-134-2/1R2061-125-31)	1	5
IR8073-231-3-3	(IR4-1l/IR2035-290-2-3)//1R2153-26-3	3	5
IR9752-303-3-1-3	(IR28/Kwang-Chang-Ai)//IR36	9	3
Nong Nghiep 75-5	(IRS/D 268)	9	5

[a]Based on the Standard Evaluation System for Rice Scales.

Pathogenic variability in *Xanthomonas oryzae*

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Thirty-six rice varieties were artificially infected in the field with 24 isolates of *Xanthomonas oryzae* (Uyeda et Ishiyama) Dowson in September 1973 and April 1974. The objective was to select suitable parents for determining genes for resistance and probable differentials for research on pathogenic specialization.

Twenty-six of the varieties were selected on the basis of their known reactions to 1 or 2 virulent isolates of *X. oryzae;* 16 were morphological markers of the 12 linkage groups in rice, included to identify characters associated with resistance.

The rices were artificially infected by the clipper method developed by Kauffman, using 2-day-old cultures suspended in sterile distilled water. The optical density was adjusted to 1.5 with Spectronic-20 at 620 nm. The spread of infection was measured (in centimeters) below the point of infection 15 days later.

The infection generally spread more in September than in April, with some notable exceptions. The response to seasonal factors in variety-isolate interactions was differential (see table).

Differential varieties should have short growth duration (120-130 days or less) and be insensitive to photoperiod. Short-duration varieties facilitate the multiplication and maintenance of pure seeds, the raising of seedlings to the flag-leaf stage for artificial infection, and other operations. Differential varieties should also show clear-cut resistant and susceptible reactions (the spread of infection in susceptible reaction should exceed 10 cm).

BJ1, Wase Aikoku 3, AC3550, and AC616 were completely resistant to 9 isolates, and, therefore, poor candidates as differentials, but good resistance donors. One or two of this group, however, could be included in the differential set to detect new virulent races in a region.

Differential reaction between isolate and rice varieties between September and April inoculations in Madras.

Variety	Isolates showing differential reaction
AC616	C
JBS376	C H201
AC806	C
AC5169	H J
Pirurutong	J H110 H146
Sigadis	H14 H1110 H66 H100
AC1063	D
ARC 142	H24
AC5607	H167 H200
T1242	H167 H100
MNP153	H167
SLO 16	H200
AC467	H200
Vijaya	H200 H201
JBS376	H34
M18	H201 H34
Early Prolific	H201
AC1224	H201
Lacrosse/Zenith-Nira	H110 H146 G
MNP153	H100
MNP152	G

PTB 10, Cauvery, IR8, and TN1, being susceptible to all isolates, are also poor differential candidates. TN1 might be included as a test variety in infection studies.

The following appear to be good candidates as differentials: AC616, AC5169, AC3551, AC1063, ARC11249, ARC142, AC5607, JBS376, Bluebelle, and Lacrosse/Zenith Nira. Only Sigadis had consistently low infection against all isolates in kharif and is, therefore, a good donor for resistance to Indian isolates.

The variability of the pathogen and its response to environmental fluctuation suggest the need for a rigid standardization of infection procedures. ■

Relation between leaf blast and neck blast disease on paddy in trials during 1980 kharif in India

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This study sought to understand the relationship between leaf blast and neck