Cultivars screened for rice blast resistance[a] in Guilan, Iran, 19784-84.

Origin	Cultivars (no.)		Total entries tested (no.)
	Resistant	Susceptible	
IRRI	139	255	391
Japan	43	33	76
USA	35	32	67
Taiwan	34	11	45
India	28	15	43
Pakistan	11	6	17
China	9	–	9
Iran	7	537	544
Philippines	6	13	19
Italy	3	–	3
Senegal	3	6	9
Korea	2	–	2
Hong Kong	2	2	4
Indonesia	2	–	2
USSR	2	24	26
Vietnam	1	–	1
Bangladesh	1	–	1
Egypt	1	–	1
South America	1	2	3
Thailand	1	1	2
Total	328	937	1265

[a]*Standard evaluation system for rice.*

were no effective resistance genes in Guilan cultivars, but many exotic sources had genes for resistance to *P. oryzae* races found in Guilan. In general, varieties that possess *Pi-a, Pi-i,* and *Pi-ta* resistance genes were resistant to rice Bl in Guilan Province. □

Insect resistance

Whitebacked planthopper (WBPH) *Sogatella furcifera* (Horvath) survival and nymph emergence on some rice varieties

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We studied survival and nymph emergence of WBPH on susceptible TN1 and IR50; moderately resistant Ptb 12, Ptb 19, CO 22, IR28, IR30 and IR60, and highly resistant ARC10550 and ARC6650 rice varieties. We used 40-d-old plants in three replications.

Ten freshly emerged nymphs/plant were enclosed in a polyethylene cage to the adult stage. Three 3-d-old gravid females/plant were confined to study nymph emergence. After 10 d, the adults were removed and emerging nymphs counted periodically.

The varieties differed significantly in WBPH survival and nymph emergence (see table). Survival was lowest on ARC10550, followed by ARC6650 and CO 22. Nymph emergence was low on highly resistant varieties. Among the moderately resistant varieties, CO 22, IR28, IR30, and IR60 permitted more nymph emergence than Ptb 12 and Ptb 19.

Effects of resistant accessions on nymph development were also observed. Average nymph duration on resistant accessions was longer than on the susceptible check. In the resistant and moderately resistant varieties, nymph development was delayed. □

Growth of WBPH nymphs on resistant and moderately resistant rice varieties.[a] Madurai, India.

Variety	Survival (no.)	Nymph emergence (no.)	Nymph duration (d)
ARC6650	3.00 b (1.70)	51.33 a (7.16)	13.0 a (3.61)
ARC10550	1.66 a (1.27)	55.00 a (7.39)	13.0 a (3.6 1)
CO 22	3.66 c (1.91)	82.66 cd (9.07)	12.6 b (3.56)
IR28	6.00 e (2.45)	94.33 de (9.71)	13.0 a (3.61)
IR30	7.33 ef (2.70)	104.00 ef (10.16)	13.0 a (3.61)
IR50	8.00 g (2.82)	127.33 g (11.28)	12.0 c (3.46)
IR60	6.30 ef (2.52)	108.66 f (10.41)	13.0 a (3.6 1)
Ptb 12	5.0 d (2.24)	67.33 b (8.20)	13.0 a (3.61)
Ptb 19	4.66 d (2.16)	71.66 bc (8.45)	12.6 b (3.56)
TN1 (susceptible check)	8.66 h (2.94)	164.00 h (12.80)	11.6 d (3.4 1)
LSD (P=0.05)	0.19	0.66	0.04

[a]Mean of 3 replications. Figures in parentheses are transformed values. In a column, means followed by the same letter are not significantly different at the 5% level.

Reaction to brown planthopper (BPH) of varieties originating from *Oryza officinalis*

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We screened 86 lines originating from wild rice *O. officinalis* against BPH using the modified seedling bulk test. Test lines were sown 20 seeds/row in 10-cm-long rows in iron seedboxes 105 × 60 × 5 cm filled 3 cm deep with fine soil, in a randomized complete block design with three replications.

Seedlings were infested 10 d after seeding with second- to third-instar BPH biotype 2 nymphs at 8-10 nymphs/plant. Plant damage was assessed when 95% of susceptible check TN1 had died.

Forty lines showed resistance to BPH 19 lines at grade 1 and 21 lines at grade 3 (see table). □

Reaction to BPH biotype 2 of wild rice lines originating from *Oryza officinalis.*[a] IRRI, 1989.

Variety	Damage rating[b]
IR54742-1-11-17-12-3	1
IR54742-1-11-17-26-2	1
IR54742-1-11-17-26-3	1
IR54742-1-17-12-26-2	1
IR54742-1-17-20-8-1	3
IR54742-1-17-20-8-3	1
IR54742-1-18-12-11-1	1
IR54742-1-18-12-11-2	1
IR54742-1-18-12-11-3	1
IR54742-5-36-4-17-1	3
IR54742-5-36-4-17-3	3
IR54742-6-20-3-9-2	1
IR54742-6-20-3-9-3	1
IR54742-6-20-3-22-2	1
IR54742-6-20-3-22-3	3
IR54742-11-1-9-15-2	1
IR54742-11-2-8-2-1	3
IR54742-11-2-8-2-3	3
IR54742-11-17-10-5-2	3
IR54742-18-17-20-15-3	3
lR54742-22-14-24-22-2	3
IR54742-22-19-3-7-3	3
IR54742-22-19-3-15-1	3
IR54742-23-11-19-6-1	1
IR54742-23-11-19-6-3	1
IR54742-23-19-16-12-1	3
IR54742-23-19-16-12-2	1
IR54742-23-19-16-12-3	1
IR54742-31-9-26-15-2	3
IR54742-31-21-20-10-2	3
IR54742-33-18-20-3-2	3
IR54742-33-18-20-3-3	1
IR54742-38-13-15-2-2	3
IR54742-38-26-10-17-1	1
IR54742-41-15-30-23-1	1
IR54742-41-15-30-23-2	1
IR54742-41-15-30-23-3	1
IR54742-41-40-20-19-1	3
IR54742-4140-20-19-2	3
IR54745-2-2-25-26-1	1
IR54745-2-2-25-26-3	1
IR.54745-2-10-17-8-2	1
IR54745-2-21-12-17-1	1
IR54745-2-21-12-17-2	3
IR54745-2-21-12-17-4	1
IR54745-2-21-12-17-5	1
IR54745-2-21-12-17-6	1
IR54745-2-23-19-8-1	1
IR54745-2-23-19-8-2	3
IR54745-2-23-19-8-3	1
IR.54745-2-28-22-7-2	1
IR54745-2-37-5-26-1	1
IR54745-2-37-5-26-2	1
IR54745-2-37-5-26-3	1
IR54745-2-45-3-24-2	1
IR54748-1-17-12-1	1
IR54748-1-17-12-3	1
IR54748-1-17-25-3	1
IR54742-9-44	3
IR54742-9-4-5	1
IR54742-19-2-3	1
IR74 (resistant check)	1
TN1 (susceptible check)	9

[a] Av of 3 replications. All entries, except TN1 showed resistance. [b] By the *Standard evaluation system for rice.*

Leaffolder (LF) damage and yield loss on some selected rice varieties

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We studied the effect of LF *Cnaphalocrocis medinalis* Gueneé infestation on panicle length and weight during 1987 wet season.

Kranti, Madhuri, Mahsuri, Asha, Gurmatia, Safri 17, Makdo, and CR1014 were transplanted in 5- × 4.60-m plots at 20- × 15-cm spacing. The crop was fertilized at 40-30-20 kg NPK/ha.

After flag leaf emergence, 15 hills of each variety were selected at random. Infested and healthy leaves were counted. Panicle length and panicle weight were measured at harvest.

The data suggested that all the varieties were susceptible to LF (see table). The degree of susceptibility was in order Kranti > Mahsuri > Madhuri > Asha > Gurmatia > Safri 17 > Makdo > CR1014.

Correlations indicated that the higher the infestation, the shorter the panicle length and the lighter the panicle weight. But correlation coefficients were significant only between leaf damage and panicle weight in Gurmatia and Safri 17 and only between leaf damage and panicle length in CR1014, Kranti, and Madhuri. □

LF damage and yield of selected rice varieties. Madhya Pradesh, India, 1987 wet season.

Variety	Leaf damage (%)	Panicle wt (g)		Panicle length (cm)		Correlation[a]	
		Range	Mean	Range	Mean	Damage-panicle wt	Damage-panicle length
CR1014	12.21	2.00-2.56	2.17	16.01-19.01	17.07	–0.30	–0.78*
Kranti	24.63	1.52-2.30	1.87	17.01-20.09	18.08	–0.18	–0.63*
Mahsuri	24.32	2.59-2.79	2.26	15.08-17.04	16.05	–0.45	–0.47
Gurmatia	15.96	1.43-1.83	1.64	17.06-21.01	17.09	–0.98*	–0.19
Safri 17	15.13	0.86-1.01	0.94	16.03-17.03	16.08	–0.68*	–0.27
Madhuri	23.46	1.73-1.96	1.81	17.06-22.05	20.09	–0.23	–0.52*
Asha	16.52	1.68-2.14	1.87	16.01-20.05	19.07	–0.41	–0.48
Makdo	13.39	1.96-2.30	2.22	15.03-18.03	16.04	–0.39	–0.14

[a] * = significant at the 0.05 level.

Adverse soils tolerance

Performance of selected rice genotypes in alkaline, saline, and normal soils and their interaction with climate factors

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Soil salinity and alkalinity associated with low temperature are the major problems of the coastal area of the Salado River basin, Buenos Aires Province.

We evaluated 81 cultivars and 9 local lines and varieties for alkalinity and salinity tolerance, under temperate climate conditions (35° south latitude).

The severely deteriorated alkali soil (Typic Natraqualf) of the Salado River basin is characterized by high pH (9.6), sodicity (exchangeab1e sodium percentage exceeding 60), calcium carbonate precipitation, clay texture. Soil salinity was created artificially by adding NaCl to 8 dS/m at seeding. Normal soil was a Typic Argiudoll with excellent agronomic characteristics.

Entries were dry seeded in problem soils 1 and 2 Oct 1987 and in