

### 3. Testing rice varieties for reaction to sheath blight pathogen

A total of 120 rice varieties were tested twice each with three replications for their reaction to sheath blight pathogen *Rhizoctonia solani* (Table 6). The susceptible TN1 was killed by sheath blight infection in all tests and replications. None of the variety showed a resistant reaction. Some showed a moderate resistance (score SI  $\geq 5$  to  $< 7$ ) to sheath blight pathogen. These included: 2 from irrigated early varieties - IR36 and KARJAT185; 2 from irrigated medium maturity varieties – Narmada and Vijetha; 3 from irrigated medium early maturity – Athira, PHB71 and PA 6201; 6 from rainfed shallow lowland varieties – Salivahana, Savithri, Manasarovar, Pratibha, Deepti and Swarnadhan; 3 from rainfed upland varieties - GR3, GR5 and Prasanna; and one of the scented rice – GR101.

Overall severity index (SI) of sheath blight reaction score for the 120 varieties released for commercial cultivation in various ecosystems tested remained between 6.08 and 7.60 (Table 7). The standard error estimates indicated the high level of precision in the estimates. The coefficients of variation indicated stability of the reaction of varieties released for different ecosystems to *R. solani* infection.

**Table 6. Reaction of rice varieties released for commercial cultivation in different ecosystem to sheath blight pathogen *Rhizoctonia solani*.**

VARIETY	First test			Second test			Mean (SI)	Ecosystem
	R1	R2	R3	R1	R2	R3		
1 ADITYA	8	7	7	9	5	9	7.50	RUP
2 ADT36	8	9	7	9	5	9	7.83	IRE
3 ADT44	8	7	7	9	7	7	7.50	RSL
4 AISHWARYA	8	7	7	7	7	3	6.50	IRE
5 AJAYA	7	9	7	9	7	5	7.33	IRM
6 AKUTPHOU	9	7	7	9	7	7	7.67	HRIR
7 AMULYA	7	9	5	7	7	5	6.67	SDW
8 ANJALI	6	8	7	9	9	8	7.83	RUP
9 ANNADA	9	7	6	8	7	9	7.67	RUP
10 ARVINDAR	8	8	7	8	9	9	8.17	IRME
11 ASD16	7	7	7	9	5	7	7.00	IRE
12 ASD18	9	7	8	9	7	9	8.17	IRE
13 ASD20	9	7	9	7	5	9	7.67	IRM
14 ATHIRA	4	5	7	9	5	5	5.83	IRME
15 BHARANI	9	7	7	9	9	7	8.00	IRME
16 BHARATIDASAN	7	5	5	9	7	7	6.67	RSL
17 CO47	9	7	7	9	7	9	8.00	IRE
18 CO48	9	7	5	8	9	5	7.17	IRM
19 COTTONDORASANNALU	5	6	7	6	7	8	6.50	IRE
20 DEEPTI	3	7	7	7	7	5	6.00	RSL
21 DHANARASI	8	9	7	9	7	9	8.17	RSL
22 DINESH	9	7	8	7	7	9	7.83	DW

VARIETY	First test			Second test			Mean (SI)	Ecosystem
	R1	R2	R3	R1	R2	R3		
23 DRRH1	6	7	5	9	7	5	6.50	IRM
24 DRRH2	8	9	8	9	8	8	8.33	IRE
25 EREMAPHOU	9	5	5	9	7	9	7.33	DW
26 ERRAMALLELU	8	7	6	7	6	6	6.67	IRE
27 GEB24	7	7	7	7	7	7	7.00	IRM
28 GOVIND	9	7	7	9	7	7	7.67	RUP
29 GR101	4	7	7	9	5	3	5.83	SCR
30 GR11	7	7	7	9	9	7	7.67	IRME
31 GR3	5	5	5	9	5	5	5.67	RUP
32 GR4	8	7	9	9	7	7	7.83	IRE
33 GR5	3	5	5	9	7	5	5.67	RUP
34 GURJARI	7	7	7	9	7	5	7.00	IRME
35 HKR120	3	9	7	9	7	7	7.00	IRM
36 HKR126	5	9	7	7	9	9	7.67	IRM
37 HKR46	9	7	7	9	7	7	7.67	IRM
38 HPR2143	7	7	5	7	7	9	7.00	HRIR
39 IR36	3	7	7	7	7	5	6.00	IRE
40 IR50	9	9	7	9	7	9	8.33	IRE
41 IR64	3	7	7	9	5	9	6.67	IRME
42 IR72	7	7	7	9	7	7	7.33	IRME
43 JAYA	8	9	7	9	5	5	7.17	IRM
44 JEERAGASAMBA	8	5	5	9	9	5	6.83	SCR
45 JYOTHI	7	7	7	9	7	7	7.33	IRE
46 KANCHANA	8	7	7	9	5	7	7.17	RSL
47 KARJAT185	5	8	7	6	7	4	6.17	IRE

VARIETY	First test			Second test			Mean (SI)	Ecosystem
	R1	R2	R3	R1	R2	R3		
48 KARJAT3	7	9	7	9	9	9	8.33	SCR
49 KARJAT4	8	7	7	9	7	7	7.50	IRE
50 KARJAT5	7	7	7	9	9	7	7.67	IRE
51 KASTURI	5	6	9	7	8	7	7.00	SCR
52 KHARVELI	5	7	7	9	7	9	7.33	IRM
53 KHITISH	4	7	7	9	7	7	6.83	IRE
54 KOTHAMOLOGOLUKULU	6	7	7	7	7	5	6.50	RSL
55 KRH2	6	9	7	9	7	7	7.50	IRM
56 KRISHNAHAMSA	4	9	7	9	5	5	6.50	IRE
57 LALAT	4	7	7	7	9	9	7.17	IRME
58 LEIMAPHHOU	6	5	8	7	9	9	7.33	HRIR
59 MAHSURI	9	7	5	9	9	7	7.67	RSL
60 MANASAROVAR	5	6	5	6	5	6	5.50	RSL
61 MANDYAVIJAYA	7	7	9	7	7	7	7.33	RSL
62 NAGARJUNA	5	7	9	7	7	5	6.67	RSL
63 NARENDRADHAN118	8	7	6	7	9	9	7.67	RUP
64 NARENDRADHAN359	6	8	9	7	9	7	7.67	IRM
65 NARENDRADHAN97	9	8	7	5	6	8	7.17	RUP
66 NARMADA	4	5	3	9	9	3	5.50	IRM
67 NARENDRADHAN80	8	9	9	9	7	7	8.17	RUP
68 NIDHI	9	7	7	9	9	9	8.33	IRE
69 NORIN	7	6	8	6	4	8	6.50	IRME
70 PA 6201	3	7	7	9	7	5	6.33	IRME
71 PALGHAR1	9	8	9	7	8	9	8.33	IRM
72 PHALGUNA	7	7	7	9	7	7	7.33	RSL

VARIETY	First test			Second test			Mean (SI)	Ecosystem
	R1	R2	R3	R1	R2	R3		
73 PHB71	4	5	5	9	7	5	5.83	IRME
74 PHOUOIBI	8	7	7	9	7	9	7.83	IRME
75 POOJA	6	7	8	5	9	9	7.33	RSL
76 PR106	8	7	7	9	7	9	7.83	IRM
77 PR111	7	7	7	9	7	9	7.67	IRM
78 PR113	6	9	7	9	7	5	7.17	IRME
79 PR114	7	9	7	9	7	7	7.67	IRM
80 PR115	6	7	7	9	7	7	7.17	IRME
81 PR116	4	7	7	9	7	9	7.17	IRM
82 PRABHAT	5	6	8	9	7	9	7.33	IRM
83 PRASANNA	3	9	7	7	7	5	6.33	RUP
84 PRATIBHA	4	7	7	7	5	5	5.83	RSL
85 PUDUVAIPONNI	5	7	7	9	7	5	6.67	IRM
86 PUNIDAVATHI	6	7	7	9	7	7	7.17	IRE
87 PUNSHI	9	9	9	9	9	7	8.67	IRM
88 PUSA BASMATI1	7	7	7	9	7	9	7.67	SCR
89 RASI	9	9	7	9	7	9	8.33	IRE
90 RATNA	8	9	9	9	7	7	8.17	IRE
91 SABITA	9	7	7	9	7	5	7.33	SDW
92 SALIVAHANA	5	4	5	5	6	5	5.00	RSL
93 SARJOO52	7	9	7	9	7	9	8.00	IRM
94 SAVITHRI	5	4	6	5	5	7	5.33	RSL
95 SIMHAPURI	5	7	7	7	9	9	7.33	RSL
96 SONASALI	6	7	7	9	9	7	7.50	IRM
97 SRIRANGA	9	7	7	7	7	9	7.67	RSL

VARIETY	First test			Second test			Mean (SI)	Ecosystem
	R1	R2	R3	R1	R2	R3		
98 SUBRAMANYABHARATI	6	8	9	9	7	8	7.83	RSL
99 SUKARADHAN	7	8	6	8	9	9	7.83	HRUR
100 SURAKSHA	7	7	7	9	7	7	7.33	IRM
101 SUREDRA	6	7	7	9	9	5	7.17	IRM
102 SWARNA	7	7	7	9	7	7	7.33	RSL
103 SWARNAPRABHA	6	9	7	9	5	5	6.83	IRE
104 SWARNADHAN	5	5	7	9	7	3	6.00	RSL
105 SWARNAMUKI	7	7	7	9	7	7	7.33	IRM
106 SYE 14-9-8	5	9	7	9	7	7	7.33	IRM
107 TAPASWINI	8	7	7	9	9	7	7.83	IRM
108 TARAORI BASMATI	6	7	7	9	9	9	7.83	SCR
109 TELLAHAMSA	9	8	9	8	9	9	8.67	IRE
110 TKM10	8	7	6	7	8	7	7.17	IRM
111 TKM9	8	7	6	7	6	7	6.83	IRE
112 TRIGUNA	3	7	7	9	7	7	6.67	IRME
113 TULASI	9	7	9	9	7	7	8.00	RUP
114 VAJRAM	5	7	9	7	7	5	6.67	RSL
115 VIBHAVA	5	7	9	9	9	7	7.67	IRM
116 VIJETHA	3	7	7	7	7	5	6.00	IRM
117 VIKRAMARYA	9	5	9	9	7	7	7.67	IRM
118 VL154	9	8	9	7	9	7	8.17	RUP
119 VL82	9	9	9	7	8	7	8.17	HRIR
120 CHECK (TN1)	9	9	9	9	9	9	9.00	

R = Replication; SI = mean score across replications and repeated tests

**Table 7. Summary analysis of reaction of rice varieties released for commercial cultivation in different ecosystem to sheath blight pathogen *Rhizoctonia solani*.**

Ecosystem	Hills	IRE	IRM	IRME	RSL	RUP	SCR	SDW	DW	Over ecosystems
Varieties (No.)	5	24	32	15	21	12	6	2	2	120
Mean	7.60	7.40	7.36	7.02	6.80	7.29	7.25	7.00	7.58	7.24
Standard Error	0.20	0.16	0.11	0.19	0.19	0.26	0.36	0.33	0.25	0.07
Standard Deviation	0.45	0.80	0.60	0.72	0.89	0.90	0.89	0.47	0.35	0.78
CV(%)	5.93	10.81	8.20	10.30	13.12	12.41	12.23	6.73	4.66	10.84

Hills = hill rice irrigated/upland; IRE = irrigated early maturity; IRME = irrigated mid-early maturity; IRM = irrigated medium maturity; RUP = rainfed upland; RSL = rainfed shallow lowland; SCR = scented rice; SDW = semideep water (30-50 cm water depth); DW = deep water (>50-100 cm water depth).