concentration of 10^9 cells/ mi.

Lesion length was measured 14 d after inoculation. Rices with lesion lengths up to 25% of that observed on highly susceptible TN1 were classified resistant (R); those with lesion lengths 26-50% of that on TN1 were classified moderately resistant (MR); the remaining lines were classified susceptible. The experiment was repeated at 90 DAS with lines classified R or MR in the first test.

Of 800 lines or cultivars screened, 29 were R at 70 and 90 DAS; 22 were R at 70 DAS and MR at 90 DAS; 28 were MR at 70 DAS and R at 90 DAS (see table). Some sources of resistance detected here are being used in a crossing program for detailed genetic analysis of resistance to *X. campestris* pv. *oryzae*. □

Genetic Evaluation and Utilization
INSECT RESISTANCE

Sources of resistance to rice thrips

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Severe thrips *Stenchaetothrips biformis* (Bagnall) damage kills rice varieties IR20, IR50, Vaigai, and Bhavani in the seedling stage. We observed differences in levels of resistance to thrips in the rice germplasm collections maintained at Paddy Breeding Station, TNAU. Hence, we field-evaluated 1,840 traditional rice cultivars for thrips resistance during Oct 1986.

Seeds were sown in three 1-m-long rows at 1 seed/cm. Resistant Ptb 33 and susceptible TN1 checks were sown at random. TN1 seedlings were completely killed at 20 d after seeding. Damage rating was based on *Standard evaluation system for rice* 0-9 scale.

This mass screening identified 95 resistance sources, more than 75% originating in India (Table l), most of them from Kerala and Tamil Nadu (Table 2). □

Table 1. Sources of resistance to thrips *S. biformis* (Bagnall). TNAU, Coimbatore, India, 1986.

Country	Source	
	no.	Percentage
India	74	77.9
USA	5	5.3
France	6	6.3
Japan	4	4.2
China	2	2.1
Nigeria	1	1.0
Netherlands	1	1.0
Taiwan	1	1.0
USSR	1	1.0
Total	95	100

Table 2. Sources of resistance to thrips from India, 1986.

State	Source	
	no.	Percentage
Tamil Nadu	33	44.6
Kerala	12	16.2
Orissa	10	13.5
Assam	7	9.5
Karnataka	5	6.8
Bengal	3	4.0
Maharashtra	3	4.0
Andhra Pradesh	1	1.4
Total	74	100

Varietal resistance to rice hispa

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Rice hispa *Dicladispa armigera* Oliv. is becoming increasingly important in many Asian countries. Pest attack was severe in Madhubani, Darbhanga, and Samastipur districts of Bihar, India, during the 1983 and 1984 wet seasons (WS).

Ten elite lines were screened in iron trays covered with cages in Pusa in 1984 WS. The lines were randomized and replicated three times. One hundred hispa adults, collected from the field, were released when the plants were 15 d old (4-leaf stage). Percentage of damaged leaves, number of eggs laid, number of grubs, and grub survival percentage were recorded on 10 plants taken randomly in each replication (see table).

Type 3, a scented rice variety from Uttar Pradesh, was least preferred by the insect. The resistance mechanism seems to be both nonpreference and antibiosis. Other lines including TCA4, IET6263, and Rajendra Shan 201 were highly susceptible. □

Screening of rice varieties against rice hispa in cages. Bihar, India, 1984 wet season.

Variety	Damaged leaves (%)	Eggs (no./plant)	Grubs (no./plant)	Grub survival (%)
Radha (BR4)	90.0	1.53	1.5	71.7
Saket 4	74.4	2.17	2.2	67.5
Type 3	59.7	0.70	0.7	62.1
Pankaj	70.1	1.50	2.4	70.9
Rajshree (TCA80-4)	84.6	2.06	2.1	73.9
IET6263	87.9	3.13	3.3	69.5
BR34	88.5	2.50	2.5	77.5
Rajendra Shan 201	93.9	2.80	2.8	69.7
TCA4	95.6	2.13	2.1	67.6
Sugandha	82.9	2.36	1.5	82.6
CD (0.05%)	4.2	0.50	0.6	4.0
CV (%)	3.7	14.19	16.2	4.1