

**BR-IRGA plantings in Rio Grande do Sul, Brazil**

*E. P. Silveira, researcher, Federal Agricultural Research System (EMBRAPA)–UEPAE/Pelotas, P.O. Box 553, 96100 Pelotas, Rio Grande do Sul, Brazil*

BR-IRGA 409 and 410 are the new names for P790-B4-4-1T (IR930-2/IR665-31-1-4) and P798-B4-4-1T (IR930-53/IR665-31-2), two semidwarf lines developed at the International Tropical Agricultural Center (CIAT) in Colombia. They were introduced, selected, and released in 1978 and 1980 through the Rio Grande do Sul Rice Research Station, USAID, and the UEPAE-Pelotas/EMBRAPA rice research team.

Both varieties are between 100 and

**Area, rice production, and yield of BR-IRGA 409 and BR-IRGA 410, 1979-84, Rio Grande do Sul, Brazil.**

Year	Area planted					Statewide	
	Total (thousand ha)	BR-IRGA 409 (thousand ha)	Proportion of total rice area (%)	BR-IRGA 410 (thousand ha)	Proportion of total rice area (%)	Production (million t)	Yield (t/ha)
1979-80	590	.45	.76	.028	.0047	2.183	3.7
1980-81	589	9.77	1.66	8.34	.142	2.356	4.0
1981-82	607	212.44	35.0	18.21	3.0	2.489	4.1
1982-83	670	435.22	65.0	33.48	5.0	2.479	3.7 <sup>a</sup>
1983-84	704	457.58	65.0	35.2	5.0	3.168	4.5

<sup>a</sup> Flooding and low temperature damage.

110 cm tall, have long slender grains, mature in 110 to 130 d, and tolerate blast and Helminthosporium leaf spot. In 1983-84, BR-IRGA 409 was planted on 457,580 ha or 65% of the rice area in Rio Grande do Sul (see table).

In 5 yr, rice production in Rio Grande do Sul has increased about 50% partly as the result of increased area planted to rice, and also because of introduced varieties. □

## Genetic Evaluation and Utilization

### AGRONOMIC CHARACTERISTICS

**Lodging of rice cultivars grown in pure and mixed stands at different fertility levels**

*D. C. Ghosh, associate professor of agronomy, Birsa Agricultural University, Kanke, Ranchi, Bihar; and M. Maji, College of Agriculture, Visva-Bharati, West Bengal, India*

We studied the lodging behavior of tall and semidwarf rices grown in pure and mixed field stands at different fertility levels in 1979 and 1980 kharif. Soil was a

lateritic acid with pH 6.0, 0.22% organic carbon, 0.02% total N, 9 kg P/ha, and 132 kg K/ha. The experiment was in a split-plot design with 3 replications and 4 fertility levels: no fertilizer control (F<sub>0</sub>), 50-13-25 (F<sub>1</sub>), 100-26-50 (F<sub>2</sub>), and 150-40-75 (F<sub>3</sub>) kg NPK/ha. Fertility levels were in main plots and rice cultivars and mixed stands in subplots. Semidwarf Pankaj and tall Mahsuri were grown. The mixed stand was obtained by planting two center rows of Mahsuri bounded by single rows of Pankaj, which gave a prismatic shape to the crop canopy. The crop

received adequate weed, insect, and disease protection and was irrigated when necessary. Light transmission rate (LTR) at different growth stages and plant height at flowering were measured. Percentage of lodged area in each plot was recorded after flowering.

The pure stand of Mahsuri was more susceptible to lodging (see table) than Pankaj. Lodging increased with fertilizer application. Pure and mixed stands of Pankaj lodged only at the highest fertility level. Height of both tall and semidwarf cultivars was significantly less in the mixed

**Lodging incidence and plant height of rice cultivars grown in pure and mixed stands.**

Fertility level (kg NPK)	Incidence of lodging (%)						Plant height (cm) at flowering <sup>a</sup>			
	1979			1980			Pure stand		Mixed stand	
	Pankaj	Mahsuri	Mixed stand	Pankaj	Mahsuri	Mixed stand	Pankaj	Mahsuri	Pankaj	Mahsuri
0-0-0 (control)	0	0	0	0	0	0	80	100	76	97
50-13-25	0	9	0	0	5	0	95	120	89	112
120-26-50	0	70	0	0	65	0	104	126	96	118
150-40-75	16	94	9	10	91	6	109	130	99	118
Mean							97	119	90	111
CD at 5%	Cultivars and stand = 4.0, Fertility = 6.6									

<sup>a</sup> Av of 2 yr.