higher with 30 kg N/ ha than in the no-N check, 60 kg N gave significantly better yields than 30 kg, and 90 kg N produced better IR42 yields than 60 kg N. IR36 yield at 90 kg N was not significantly higher than at 60 kg. Applying 150 kg N did not significantly increase yield of either variety (see table).

Ratoon crop performance of three rices

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Rice in Bangalore, Kolar, and Tumkur Districts of Karnataka, India, often is planted late because irrigation tanks have not filled, and can suffer cold damage. Land often remains fallow until wet season begins in Jun-Jul. We sought to determine the potential of a ratoon crop of rice planted in late wet season.

Mangala, CT1351, and Halubbalu were planted in 3.0- × 1.8-m plots in 4 replications on 15 Aug, 15 Sep, and 15 Oct in late kharif 1983-84. Recommended practices were followed for the main crop, which was somewhat damaged by blast (Bl) and low temperatures. The Bl-damaged plots grew new tillers and produced some grain. The plots were ratooned after main season harvest. The ratoon crop was irrigated 2-3 times a month and was not cultivated or fertilized.

Halubbalu produced no grain in tha main crop because of Bl. Mangala and CT1351 yielded 1.5 to 2.5 t/ha and had moderate B1 resistance. Ratoon yields are in the table. Mangala planted on 15 Aug and ratooned in November yielded highest followed by Haiubbalu planted 15 Oct, and Mangala and Halubbalu planted 15 Sep. Yield data for the ratoon crop are unreliable because there was considerable bird damage; however, they encourage further study of rice ratooning for the area.

Ratoon yield of three rice varieties as influenced by three planting dates, Bangalore, India.[a]

Variety		Planting date		
		15 Aug	15 Sep	15 Oct
Mangala	GY (t/ha)	1.81	1.41	1.21
	MCD (d)	118	126	130
	RCD (d)	85	90	80
CT1351	GY (t/ha)	0.94	1.07	1.25
	MCD (d)	127	134	140
	RCD (d)	100	110	100
Halubbalu (S317)	GY (t/ha)	0.93	1.49	1.55
	MCD (d)	136	138	148
	RCD (d)	105	116	110

[a]Gy = grain yield, MCD = main crop duration, RCD = ratoon crop duration.

Regulating K^+ and Na^+ in two rice varieties grown in sodic soils

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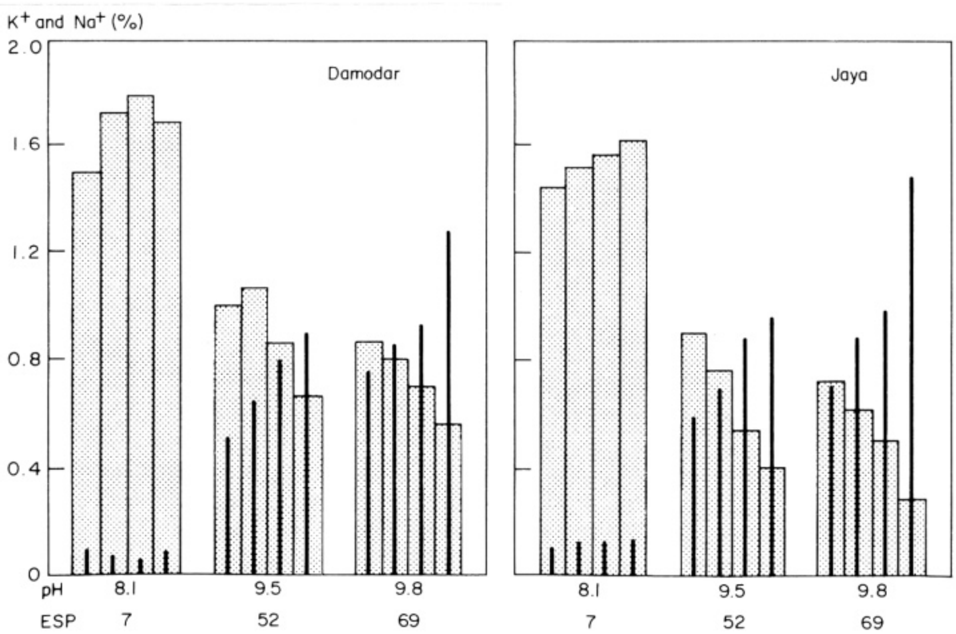
Rice varieties differ in salt tolerance. Tolerant varieties generally have comparatively low Na^+ content per unit dry weight with less imbalance in shoot K^+. The ability to regulate those ions in leaves may help prevent Na^+ excess in young plant parts. Damodar and Jaya. which have different salt tolerance, were grown under sodic conditions to study their ability to control K^+ and Na^+ contents in different laminae and their sheaths.

Forty-day-old seedlings were transplanted in pots with 8.5 kg sodic soil of pH 9.5 and 9.8. Exchangeable sodium percentage (ESP) was 52 and 69. Pots with normal soil (pH 8.1 and ESP 7) were the control. Soil was 41.4% sand, 35.0% silt, and 23.2% clay. Cation exchange capacity was 10.6 meq/100g. Soil had 24, 11, and 85 mg/kg available NPK. One gram urea and 0.09 g $ZnSO_4$/pot were applied basally. An additional dose of 0.5 g urea/pot was applied at tillering and flowering.

After 45 d of growth, 3 sets of the top 4 fully expanded laminae were sampled and analyzed for K^+ and Na^+. Differences in Na^+ content were statistically significant and were in order $1 < 2 < 3 < 4$. K^+ was lowest in the first lamina of control plants. Each lamina of Damodar had significantly higher K^+ than the corresponding one in Jaya; the reverse was true for Na^+ (see figure).



Effect of sodicity on K^+ and Na^+ contents of different laminae of two rices, Haryana, India. Bars = 1st to 4th laminae K^+, vertical lines = Na^+.