

tion in Tamil Nadu in 1983. It performed well at PES in kar season (Jun-Sep) when planted at 20- x 10-cm spacing with 2 seedlings/hill in observational plots in

1981 and in a randomized block design with 3 replications in 1982. NPK was applied at 100-22-42 kg NPK/ha.

IR50 performance equaled that of

standard local varieties. Average grain yield was 5.96 t/ha in 110 days, 2.2% more than IET4786, also a fine-grained variety (see table). □

Intensity of dormancy in Maruteru rices

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The length of time required to break seed dormancy by artificial means differs markedly among rice varieties. Intensity of dormancy is usually tested by heating freshly harvested seeds to 50°C for 4 d. We studied the intensity of dormancy of

Maruteru rices.

Seeds of 26 rice varieties grown in a field trial in 1982 kharif were dried to 12% moisture content, then heated to 50°C for 4 d in a thermostatically controlled electric hot air oven. The varieties were classified by seed germination percentage.

Strongly dormant varieties (less than 50% germination) were MTU8, MTU11,

MTU13, MTU16, MTU23, MTU6182, and MTU8089.

Weakly dormant varieties (80% or higher germination) were MTU3, MTU10, MTU19, MTU2716, MTU3626, MTU4392, MTU4569, MTU4870, MTU5182, MTU5194, MTU5195, MTU5196, MTU5249, MTU5293, MTU6024, MTU7029, MTU7030, MTU7633, and MTU8002. □

GENETIC EVALUATION AND UTILIZATION

Hybrid rice

A new source of cytoplasmic-genetic male sterility in rice

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Commercial exploitation of heterosis in rice *Oryza sativa* L., as recently demonstrated in China, has widened the scope of hybrid rice in the tropical rice world. The present study was prompted by a report from IARI, New Delhi, that IARI 10061, IARI 10560, Tadukan, Culture 340, IR8, Jaya, and Chitrikar might be sources of cytoplasmic-genetic male sterility and that improved Sabarmati and IARI 657 might be sources of nuclear genes for male sterility. Studies of reciprocal cross combinations indicate that pollen sterility was higher in the F₁ of IARI 10560/Improved Sabarmati. IARI 10560 had higher pollen sterility when it

was used as female parent with Improved Sabarmati as male parent. Pollen sterility increased in backcross generations, but was higher when IARI 10560 was the female parent (see table).

IARI 10560 is a spontaneous dwarf identified in the Northeastern Indian collection of rice. Improved Sabarmati has a cytoplasmic background of TN1 and nuclear genes, most of them derived by backcrossing, of Basmati 370, a variety with strong genetic male sterility.

High levels of pollen sterility in improved Sabarmati and high reciprocal differences in crosses with IARI 10560 cytoplasm indicate the presence of cytoplasmic factors for sterility in the latter.

Furthermore, the increasing trend of sterility in the subsequent backcross generations (59.1% in BC₂) suggests that IARI 10560 may be a potential source of sterile cytoplasm. □

Pollen sterility of IARI 10560/Improved Sabarmati.

Generation	Cross	Plants (no.)	Pollen sterility (%)	
			Range	Mean
F ₁	IARI 10560/Improved Sabarmati	3	17 - 100	41
BC ₁	IARI 10560/Improved Sabarmati/1	2	36 - 59	48
BC ₂	IARI 10560/Improved Sabarmati/2	4	47 - 74	59
F ₁	Improved Sabarmati/IARI 10560	3	8 - 19	15
BC ₁	Improved Sabarmati/IARI 10560/1	3	13 - 23	17
BC ₂	Improved Sabarmati/IARI 10560/2	2	20 - 30	25

GENETIC EVALUATION AND UTILIZATION

* Germplasm

Rice germplasm conservation and evaluation activities at J. N. Agricultural University campus, Raipur, MP, India

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The Jeypore tract of Orissa State has a large ecogenetic diversity of rice germplasm. An adjacent area, Bastar district of MP, has equally diverse germplasm. Germplasm from Bastar district was first studied in 1971, when R. H. Richharia, agricultural adviser to the Government of MP, started a systematic survey of the state's rice varieties. Material he collected formed the nucleus for the breeding activities of the MP Rice Research Institute. The Institute was founded in 1976 and merged with J. N. Agricultural University in 1979.

Genetic material is divided by maturity and grown in six groups (Table 1). The germplasm collection, which includes many duplicates, now numbers 20,008. Sorting for duplicate samples and characterizing accessions by 15 morphological traits started last season and has been completed for 4,500 varieties.

Although lack of greenhouses has made it difficult to screen for insect resistance, several accessions have been tenta-

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