GERMPLASM IMPROVEMENT

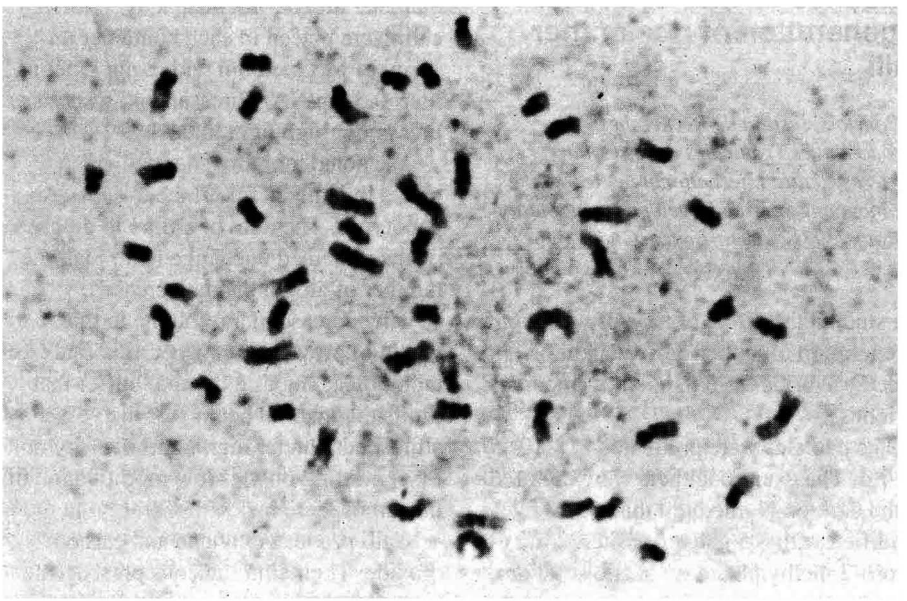
Genetic resources

The chromosome number of *Oryza schlechteri* Pilger

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The rare species *O. schlechteri* was recently collected as living plants below the Jamu Gorge in the Finisterre Mountains of Papua New Guinea (PNG). This small, stoloniferous wild relative of rice is currently known to exist only in three other locations: on the island of New Guinea above the Jamu Gorge, Madang Province, PNG; Baimuru, Kikori, Gulf Province, PNG; and along the Beaufort River, Irian Jaya, Indonesia.

The somatic chromosome number of *O. schlechteri* is 2n = 4× = 48 (see figure). Of the five other known species from Papua New Guinea, *O. longiglumis, O. minuta,* and *0. ridleyi* are tetraploid, and *O. rufipogon* and *O. officinalis* are diploid. The systematic position of *O. schlechteri,* which is morphologically distinct from all other species in the genus *Oryza,* requires furrher detailed study. □



Root tip cell chromosomes of *Oryza schlechteri.*

Genetics

Combining ability of some rice genotypes for ratooning in diallel mating system

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Six rice genotypes (Bhavani, MDU3, IET6262, IET6709, IET7552, and IET9239) and their 30 hybrids obtained through complete diallel set were evaluated for combining ability for the ratooning trait. Entries were raised in two 3-m rows with 20- × 10-cm spacing in a randomized block design replicated three times during Oct 1988 at ACRI.

The crop was harvested at maturity, cut at 20 cm aboveground. We evaluated 10 randomly selected parents and 5 hybrids from each replication. Ratooning ability was assessed as the number of ratoon tillers generated from the stubble.

Analysis of variance revealed that the variances due to general combining ability (GCA). specific combining ability (SCA), and reciprocal effects (RE) were significant, which indicated the difference in ratooning ability among genotypes (Table 1).

The GCA effects for ratooning ability were highly significant for all parents: from -1.64 (IET9239) to 1.45 (IET6709). The parents IET6709. 1ET6262, and IET7552 have positive and significant GCA effects and are good general combiners for ratooning ability (Table 2).

The nature of gene action in determining the inheritance of characters is important in breeding programs. The higher GCA than SCA variance for ratooning ability indicates the predominance of additive gene action in the trait's inheritance. Hence improving ratooning ability with parents IET6709, IET6262, and IET7552 through the pedigree method of breeding will be effective.□

Table 1. Analysis of variance for combining ability.

Source of variance	DF	Sum of squares	Mean square[a]	*F* table (P = 0.01)
General combining ability (GCA)	5	78.60	15.72**	3.29
Specific combining ability (SCA)	15	46.21	3.08**	2.32
Reciprocal effect	15	33.33	2.22**	2.32
Error	70	5.62	0.08	
GCA/SCA			5.1:1	

[a] ** = significant at 1% level.

Table 2. Estimate of general combining ability effects for ratooning ability.

Parent	GCA effects[a]
Bhavani	–0.24**
MDU3	–0.90**
IET6262	0.76**
IET6709	1.45**
IET7552	0.58**
IET9239	–1.64**
Var(gi)	0.01
SE (gi)	0.08
LSD (P = 0.05)	0.15

[a] ** = significant at 1% level.