

Study of morphological characters of rice germplasm accessions used for wild rice eradication in Chhattisgarh

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SUMMARY

An experiment was conducted during *kharif* 2000 comprised of 100 genotypes to study morphological characters of rice germplasm accessions used for wild rice eradication. Out of 100 genotypes anthocyanin pigmentation was recorded in 63 and 72 genotypes at seedling and flowering stage, respectively while, remaining were non-pigmented. For kernel colour 65 genotypes reported to have white kernel and 35 genotypes have red kernel. Regarding lemma and palea colour 44 genotypes have straw lemma and palea colour, golden lemma and palea for 14 genotype and only one genotype has black lemma and palea colour and best twenty genotypes were selected on the basis of pigmentation, lemma and palea colour, kernel colour and with better grain yield per plant.

Key words : Anthocyanin, Pigmentation, Rice, Rice morphology

Wild rice is a problem for rice growing farmers in Chhattisgarh, where, *biasi* (Beaushening) method of cultivation is prevalent thereby a great yield loss has been observed. It is estimated to be Rs. 7 crores in Madhya Pradesh (Shrivastava *et al.*, 1986). Actually at initial stage of crop. growth there has been no difference between wild rice and cultivated rice. Wild rice can be differentiated only among purple plant or plants part having some pigmented parts *viz.*, purple sheath, purple auricle and purple ligule and later stage pigmented apiculus. The use of pigmented rice cultivars can be used to rouge out wild rice, as was reported by Fujisaka *et al.* (1993). Thus, breeders need to develop varieties with pigmentatism to overcome the problem of wild rice in this region.

MATERIALS AND METHODS

The present research work was conducted at Research Farm, Department of Plant Breeding and Genetics, Indira Gandhi Agricultural University, Raipur (Chhattisgarh) during *kharif* 2000. The experimental material for this study was comprised of 100 genotypes either bearing whole plant purple or some plant parts purple. Each genotype was grown in single row in each replication. Normal agronomic practices were followed throughout the crop period. Five plants from each row

were randomly selected and were tagged for recording characters. The pigmentation was recorded on various major plant parts *viz.*, leaf sheath, leaf blade, auricle, ligule and apiculus as they were either purple or green.

RESULTS AND DISCUSSION

In seedling stage out of 100 genotypes 37 genotypes were green and 63 genotypes had purple leaf colour thus number of green leaves genotypes were less than those of purple leaves genotype. On the contrary at flowering stage leaf blade pigmentation increased as compared to seedling stage and the number noted being 72. The same pattern of observation was recorded by Nadaf *et al.* (1992 a). Pigmentation pattern observed was pigmentation in leaf blade, leaf sheath, auricle, ligule, 56 genotypes and apiculus, pigmentation in leaf blade, leaf sheath, ligule and apiculus, 17 genotypes, pigmentation in leaf sheath, auricle, ligule and apiculus, 9 genotypes, pigmentation in leaf sheath, ligule and apiculus, 9 genotypes, pigmentation in auricle, ligule and apiculus one genotype, pigmentation in leaf sheath, auricle and apiculus, 2 genotypes, pigmentation in leaf blade, leaf sheath and apiculus one genotype and pigmentation in apiculus 3 genotypes.

Out of 100 genotypes, 65 genotypes possessed white kernel where as 35 genotypes possessed red kernel are presented in Table 1. Out of 100 genotypes only one genotype has been found to possess black husk while majority of the genotypes (44 genotypes) were recorded to have straw lemma and palea colour, 13 genotypes had purple furrow on straw and next 13 genotypes reddish to light purple, 14 genotypes golden colour of lemma and palea, one genotype with purple lemma palea, one

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