

Short communication

INHERITANCE OF GRAIN COLOUR IN PEARLMILLET
(*Pennisetum glaucum*. (L) R.Br.)

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Pearlmillet (*Pennisetum glaucum*) is an important grain crop of tropical region. The inheritance pattern has been studied by previous workers for yellow and grey colour of the grain [1-3]. However, the author could not come across any reference where inheritance pattern of white colour was reported. Hence, the present study was undertaken to investigate the inheritance pattern of white grain colour.

The material consisted of two genotypes with pearly white grains (W-637-2 and W-123), and one genotype with grey colour of grain (D-763). Three crosses between these genotypes viz. D-763 × W-637-2; W-637-2 × D-763 and D-763 × W-123 were made during 1990 and their F₁ and F₂ progenies were raised subsequently at I.A.R.I., New Delhi. Observations on dominance behaviour of seed colour in F₁ and pattern of segregation in F₂ were recorded. Chi-square test was applied to test the goodness of fit for the assumed segregation ratio. Anatomical investigation of grey and white grain was also made.

In all the three crosses, the colour of grain in F₁ was white indicating the dominance of white colour over the grey. In F₂ generation, a segregation ratio of 3 white and 1 grey was observed in all the three crosses (Table 1). Thus, present investigation reveals that white colour of grain in pearl millet is controlled by one allelic gene pair.

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Table 1. Segregation of grain colour in F₂

Cross	Segregation classes and observed frequency of grain colour		χ^2 (3 :1)	P value
	Pearly white	Grey		
D-763 × W637-2	3740	1296	2.25	0.10-0.20
D-763 × W-123	3809	1191	3.70	0.05-0.10
W-637-2 × D 763	3738	1262	0.15	0.20-0.30
	11287	3749	0.12	0.75-0.90

Anatomical studies reveal that the pigment in the grey grain is present in the aleurone layer [4, 5] which indicates that pigmentation is not controlled by the maternal tissue i.e. pericarp. Based on the above studies, the gene symbol 'CC' is given for white and 'cc' for grey colour of grain.

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