Indian J. Genet., **48**(3): 397 (1988)

INHERITANCE OF MIDRIB COLOUR OF LEAF IN SORGHUM

R. P. S. GREWAL, K. S. BANGARWA AND G. P. LODHI

Department of Plant Breeding, Haryana Agricultural University, Hisar 125004

(Received: October 21, 1987; accepted: January 15, 1988)

Sorghum is a major source of both feed and fodder in many countries of the world. Green colour of leaf midrib indicates sweetness of a variety. It is a desirable attribute particularly when the objective is to develop varieties for green fodder purpose. It is, therefore, imperative to develop varieties with green colour of leaf midrib. Therefore, the inheritance of midrib colour of leaf in sorghum was studied.

Table 1. Segregation pattern for leaf midrib colour in sorghum

Cross	Generation	Number of plants			Ratio	χ^2 vaules
		green	white	total		
PC 6 × JS 263	F_2	117	364	481	3 : 1	0.776
	BC_1	—	59	59	No segregation	
	BC_2	38	41	79	1 : 1	0.112
S 171 × S 260	F_2	82	257	339	3 : 1	0.118
	BC_1	48	44	92	1 : 1	0.160
	BC_2	—	66	66	No segregation	

Two hybrids, namely, PC 6 (white midrib), × JS 263 (green midrib) and S 171 (green midrib) × S 260 (white midrib), their parents, backcrosses (BC_1 and BC_2) and F_2 were grown in randomized block design with three replications during kharif (rainy season) 1985 with row-to-row spacing of 30 cm. The plants were classified on the basis of midrib colour of the leaves. The χ^2 analysis was done according to Panse and Sukhatme [1].

The F_1 plants in both crosses had white midrib of leaves which indicated that the former is dominant over green midrib and there is no maternal effect on the expression of midrib colour.

The F_2, BC_1 and BC_2 plants wre classified into white and green midrib (Table 1). The segregation pattern in the F_2 generation of both crosses showed a good fit of χ^2 values for 3 (white midrib): 1 (green midrib) ratio, indicating that white midrib is governed by a single dominant gene, for which gene symbol W is proposed. Backcrossing to recessive parents segregated into a 1 : 1 ratio. This further confirmed the monogenic nature of inheritance of midrib colour.

REFERENCE

1. V. G. Panse and P. V. Sukhatme. 1978. Statistical Methods of Agricultural Workers. ICAR, New Delhi: 70.