

ANTHOCYANIN PIGMENTATION IN CERTAIN INTER-VARIETAL HYBRIDS OF *ORYZA SATIVA* LINN.

Extensive studies on the inheritance of pigmentation in various parts of the rice plant have been made by workers like Parnel *et al* (1917), Hector (1922), Chao (1928), Ganguli (1942) and Ramiah (1953).

The present note embodies the observations made on pigmentation of 20 inter-varietal hybrids involving nine varieties of *Oryza sativa* at the Paddy Breeding Station, Coimbatore, during the year 1963-'64.

The results of these observations given in Table 1 show that in 15 cross combinations wherein only one of the parents was pigmented, the dominant nature of anthocyanin pigmentation of the various plant parts in general was evidenced. Similar observations were made previously by Hector (1922), Chao (1928), Mitra *et al* (1928), Ganguli (1942) and Ramiah (1953).

The three hybrids, Co. 13 x CH. 62, C.H. 62 x Co. 13 and Co. 13 x CH. 63 exhibited pigmentation on more parts than in the pigmented parent. This may be due to the presence of localisation genes and genes for intensifying or diluting the pigment and for producing various pigment patterns besides the basic genes as postulated by Ramiah (1953).

In all the hybrids with purple apiculus, the stigma, leaf sheath and leaf axil also appeared purple thus indicating an association between pigmentation in these different plant parts (Hector 1922, Yamaguti 1927).

Seven hybrids showed straw colour for the lemma and palea at ripening though one parent in each case possessed brown colour in furrows. So far the straw colour of these parts has however been reported as recessive (Ramiah, 1953).

Red riced nature in the parent Ptb. 10 appeared to be dominant in hybrids with CH. 62 but not expressed in its hybrids with CH. 63. Dominant nature of red rice colour has been reported earlier by Hector (1913), Parnel *et al* (1917), and Ramiah and Mudaliar (1935). Mendiola (1920) has recorded the presence of an inhibitory factor preventing expression of red riced nature in the F_1 of a cross.

The hybrid between two white riced parents (CH. 45 x Co. 13) had red rice indicating the action of complementary genes (Mitra *et al* 1928).

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Table 1

Pigmentation pattern in certain inter-varietal rice hybrids

Sl. No.	Variety/Hybrid	Pigmentation						
		Leaf sheath	Inter-node	Axil	Lemma Palea (ripe)	Apiculus	Stigma	Rice kernel
1.	Co. 13	L.G.	L.G.	P.	S.	p.	P.	W.
2.	Ptb. 10	L.G.	L.G.	L.G.	B.F.	L.G.	W.	R.
3.	Adt. 3	P.L.	P.L.	P.	B.F.	P.	P.	W.
4.	CH. 45	L.G.	L.G.	L.G.	S.	L.G.	W.	W.
5.	CH. 62	L.G.	L.G.	L.G.	S.	L.G.	W.	W.
6.	CH. 63	L.G.	L.G.	L.G.	S.	L.G.	W.	W.
7.	Aikoku	P.L.	P.L.	P.	S.	P.	W.	W.
8.	Norin 1	L.G.	L.G.	L.G.	S.	L.G.	W.	W.
9.	T. 2357	L.G.	L.G.	L.G.	S.	L.G.	W.	* W.
10.	Adt. 3 x Norin 1	P.L.	P.	P.	S.	P.	p.	W.
11.	Norin 1 x Adt. 3	P.L.	P.	P.	S.	P.	p.	W.
12.	Norin 1 x CH. 62	P.	P.	P.	S.	P.	p.	W.
13.	CH. 62 x Aikoku	P.	P.	P.	S.	P.	P.	W.
14.	Aikoku x CH. 62	P.	P.	P.	S.	P.	p.	W.
15.	Norin 1 x CH. 63	P.	P.	P.	S.	P.	P.	W.
16.	Aikoku x T. 2357	P.	P.	P.	S.	P.	P.	W.
17.	T. 2357 x Aikoku	P.	P.	P.	S.	P.	p.	W.
18.	Co. 13 x CH. 62	P.	P.	P.	S.	P.	p.	W.
19.	CH. 62 x Co. 13	P.	P.	P.	S.	P.	P.	W.
20.	Co. 13 x CH. 63	P.	P.	P.	S.	P.	p.	W.
21.	CH. 45 x Co. 13	P.L.	L.G.	P.	S.	P.	p.	R.
22.	Ptb. 10 x CH. 62	L.G.	L.G.	L.G.	S.	L.G.	W.	R.
23.	CH. 62 x Ptb. 10	L.G.	L.G.	L.G.	S.	L.G.	W.	R.
24.	Ptb. 10 x CH. 63	L.G.	L.G.	L.G.	S.	L.G.	W.	W.
25.	CH. 63 x Ptb. 10	L.G.	L.G.	L.G.	S.	L.G.	W.	W.
26.	Adt. 3 x CH. 62	P.	P.	P.	S.	P.	p.	W.
27.	Co. 13 x T. 2357	P.	L.G.	P.	S.	P.	p.	W.
28.	T. 2357 x CH. 62	L.G.	L.G.	L.G.	S.	L.G.	W.	W.
29.	CH. 63 x T. 2357	L.G.	L.G.	L.G.	S.	L.G.	W.	W.

P. Purple
W. White

P.L. Purple lines
L.G. Light green
B.F. Brown in furrows

S. Straw
R. Red

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