

The F_2 results do not show a significant deviation from a 1:2:1 ratio while the testcross fits a 1:1 ratio consisting of parental classes only. Both populations suggest that the two inbreds differ at only one locus with regard to pericarp and cob color. It is suggested that the original inbred Q703 carried \underline{P}^{CW} and the derived inbred Pa W703 has \underline{P}^{WR} . This would have involved a mutation of both the pericarp and cob color component of \underline{P}^{CW} , the pericarp component from dominant to recessive and the cob color component from recessive to dominant, to produce \underline{P}^{WR} .

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3. T1-2c - P linkage.

Testcross data of a plant heterozygous for T1-2c and $\underline{P}^{WR}-\underline{P}^{WW}$ indicates about 20 per cent crossing over between them:

<u>T1-2c \underline{P}^{WR}</u>	<u>T1-2c \underline{P}^{WW}</u>	<u>+ \underline{P}^{WR}</u>	<u>+ \underline{P}^{WW}</u>	<u>Σ</u>
11	48	41	10	110

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4. Brown pericarp and salmon silks with \underline{P}^{VV} .

The gene combinations \underline{P}^{VV} bp (brown pericarp) and \underline{P}^{VV} sm (salmon silks) have been synthesized. The first has brown stripes on a clear background as expected. The silks with sm, however, are not pigmented, even when a sizeable area of red pericarp occurs on an ear. This is understandable since the red pigment of the pericarp on newly arisen red spots, and the stripes of medium variegated, do not seem to extend to the silk attachment region.

On the other hand the pericarp phenotype "dark crown", which has thus far defied genetic analysis, might be expected to interact with sm to produce pigmented silks. It is planned accordingly to examine the dark crown situation in the background of sm.

The principle reason for synthesizing these combinations is to study the residue at the P locus after the controlling element Mp has transposed away from the locus. It appears that the self-colored (red) pericarp mutants arising from \underline{P}^{VV} following transposition of Mp are not all alike in color. In the background of sm and bp it may be possible to make more definitive observations.

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Maize is an important summer season crop in West Pakistan where it is grown over an area of over one million acres every year for the production of grain. About as much area is grown for fodder. Maize being a