

Table 1
The peroxidase isozyme pattern in normal (N) and opaque-2
(o_2) endosperm

Bands	10 day		15 day		20 day		25 day		30 day	
	o_2	N	o_2	N	o_2	N	o_2	N	o_2	N
A. Cathodal zone										
C ₁	-	-	-	-	-	-	+	+	+	+
C ₂	+	+	+	+	+	+	+	+	+	+
C ₃	+	-	+	+	+	+	+	+	+	+
C ₄	+	+	+	+	+	+	+	+	+	+
C ₅	-	-	+	+	+	+	+	+	-	-
B. Central zone										
I ₁	+	+	+	+	+	+	+	+	+	+
I ₂	+	+	+	+	+	+	+	+	-	+
C. Anodal zone										
A ₁	+	-	+	+	+	+	+	+	+	+
A ₂	+	-	+	+	+	+	+	+	-	+
A ₃	-	-	+	-	+	-	+	-	-	-
A ₄	-	-	+	+	+	+	+	+	-	-
A ₅	-	-	+	+	+	+	+	+	-	-

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3. Induction of mutations with hydrazine.

Homozygous multiple dominant seed with Bm_2 , Lg_1 , A_1 , Su_1 , Pr , Y_1 , $G1_1$, Wx and G_1 markers was treated with 0.04 M and 0.08 M of hydrazine ($NH_2NH_2 \cdot H_2O$) at pH 8.5. One thousand seeds for each treatment were taken. The seeds were presoaked for 24 hours in water. The treatment duration was 24 hours.

In the case of 0.04 M hydrazine treatment, the following eleven seedling mutations were observed out of 512 plants in the M_1 generation (M_1 = the seedlings raised from treated seeds).

Table 1
Types and numbers of M_1 mutant seedlings

	Seedling mutants						Total
	Dwarf	Adhe- rent	Old gold stripe	Golden	Pig- my leaf	Brown mid- rib	
Hydrazine (0.04 M)	1	5	1	1	2	1	11

The present information suggests that hydrazine may induce mutations even in the M_1 generation, most probably by altering both alleles simultaneously. Hydroxylamine, diethylsulphate or γ -rays in different doses, however, did not induce mutations in the M_1 generation. Further studies are in progress.

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4. Chlorophyll studies in a DES-induced yellow-green mutant.

Quantitative estimations of the chlorophyll content in induced yellow-green and other known mutants were carried out and compared with the control (Table 1).

The procedure for chlorophyll determination was based on the absorption of light by aqueous acetone (80%) extracts of chlorophyll. The concentrations of chlorophyll a and b were determined by measuring the density of 80% acetone chlorophyll extracts in a Beckman DB spectrophotometer at 663 and 645 m μ .

The total chlorophyll content of the induced yellow-green, although more than that of the yellow-green-2 (yg_2) and pale-green ($pg_{11}pg_{12}$), is about one fourth of the control.