

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  $\gamma$ -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 $\mu$ .

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.

Table 1  
Quantitative estimations of chlorophyll a and b (mg/g)

Sl.No.	Phenotype	Chlorophyll a	Chlorophyll b	Total chlorophyll
1.	Yellow-green-2 ( $Y\bar{G}_2$ )	0.1270	0.1263	0.3032
2.	Pale green ( $pg_{11}pg_{12}$ )	0.2657	0.1968	0.5027
3.	New mutant yellow-green	0.3089	0.3193	0.7394
4.	Control	1.1000	1.1270	2.9000

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5. Sectoring pattern in yellow opaque-2 maize.

In a yellow opaque-2 synthetic, certain seeds were observed with normal sectors. These were classified into five types,  $S_2$ ,  $S_3$ ,  $S_4$ ,  $S_5$  and  $S_6$ ,  $S_1$  being completely opaque.  $S_5$  is similar to the half opaque-half normal kernels reported earlier by Paez *et al.* (Crop Sci. 9:1969). The sectoring pattern in these S-types extends from a few normal cells to half a kernel.

Diallele crosses were performed among these five S-types and also with the  $S_1$  control. The preliminary studies with reciprocal crosses between  $S_1$  and  $S_3$  and the diallele crosses between  $S_6$  and the other S-types suggest that the female parent may influence the pattern of sectoring. The selfed S-types segregate into one or more original S-types including some new S-types with the exception of  $S_2$  which gives only the  $S_2$  type. Further studies regarding their behaviour and genetic basis are in progress.

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