

### 3. Opaque-2 shrunken endosperm mutant.

In the  $M_2$  generation of homozygous opaque-2, seed treated with a 0.0025M concentration of DES, upon selfing, showed segregation for shrunken endosperm. Out of 254 kernels, 197 were normal and 57 were shrunken suggesting a single gene mutation of normal Sh to sh (shrunken).

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### 4. Induction of mutations in a multiple stock with DES.

When about 100 seeds of a homozygous dominant multiple stock, Bm<sub>2</sub> Lg<sub>1</sub> A<sub>1</sub> Su<sub>1</sub> Pr Y<sub>1</sub> G<sub>1</sub> J<sub>1</sub> Wx G<sub>1</sub>, were treated with 0.006 M DES, two liguleless plants were observed in the  $M_2$ , which may be due to a mutation at the Lg<sub>1</sub> locus. One of the two liguleless plants had a brown midrib, which suggests that simultaneous mutations occurred at two loci, Bm<sub>2</sub> and Lg<sub>1</sub>.

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### 5. Induction of specific locus mutations by DES and hydrazine.

Seed of a multiple stock homozygous for gl<sub>6</sub> lg<sub>2</sub> a<sub>1</sub> et, A<sub>2</sub>, Dt C, and R was pre-soaked for 24 hours prior to treatment with ten different concentrations of DES ranging from 0.003M to 0.01M for 8 hours. Out of total 739 treated seed, 541 germinated. Among the resulting population were plants with three types of chlorophyll sectors (yellow green, yellow, and albino) as well as 9 bifurcated and 14 trifurcated leaves. Pollen sterility was about 13% in the 0.003M treatment whereas in the 0.005M, it was about 24%. There seems to be an increase in percentage of pollen sterility with increase in concentration of DES treatment.

Out of 269 seedlings, five reversions from liguleless to normal were observed, two in the 0.003M, two in the 0.0035M, and one in the 0.004M treatment.

Seed of the homozygous multiple dominant stock, Bm<sub>2</sub> Lg<sub>1</sub> A<sub>1</sub> Su<sub>1</sub> Pr Y<sub>1</sub> G<sub>1</sub> J<sub>1</sub> Wx and G<sub>1</sub>, was treated with 0.009M hydrazine hydrate (80%) for 23 hours after one hour of pre-soaking. Two golden and two yellow