Though both opaque and normal tissues are from S_5 kernels, they showed a significant difference in the protein pattern. The pyrophosphate extract of S_5 (+) shows the maximum number of bands. Also S_5 (+) showed a greater number of bands than S_5 (o_2) in all the extracts except the water fraction. The differences between these tissues were observed to be maximum in the ethanol extract where S_5 (o_2) is devoid of any protein bands. But in both tissues the intensity of the bands decreased with consecutive extractions.

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3. Induction of seedling and endosperm mutations with DES.

A homozygous dominant multiple stock, Bm_2 Lg_1 A_1 Su_1 Pr Y_1 Gl_1 J_1 Wx G_1, was treated with three different concentrations of DES (MNL 44:178). Seedling and endosperm mutations were observed in 0.006M treatment in M_2 and M_3, respectively (Table 1). The mutation frequency was calculated on the basis of the total number of independent mutations divided by the total number of M_1 ears.

Table 1. Mutation frequency observed for various seedling and endosperm characters.

No. of loci mutated	Type of mutation			Mutation frequency
	Seedling	Endosperm	New mutations	
1	-	a_1	-	0.01
2	-	$a_1 y_1$	-	0.02
6	bm_2, lg_1	a_1, y, wx	Salmon silk	0.06
8	lg_1, g_1	a_1, su, y, wx	White leaf sheath	0.08
14	bm_2, lg_1 gl, g_1	a_1, su, pr, y_1, wx	White leaf sheath, unbranched tassel, salmon silk, dwarf, albino.	0.14

The recessive mutations for the ten known markers were found to be allelic, with the exception of g_1 and gl_1 which need to be tested. The recovered new mutants were found to breed true and allelic studies are in progress.

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4. High protein opaque-shrunken endosperm.

Induced opaque-shrunken endosperm (MNL 44:178) was found to have high protein (18.0%). Preliminary studies suggest that the shrunken-opaque is not allelic to either sh_1, sh_2, sh_4 or bt_2.

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5. Biochemical nature of bz_1 and bz_2 mutants.

The chemical nature of the accumulated substance in a_2 mutant aleurone was reported earlier (MNL 45:169-171). Similar studies were conducted with bz_1 and bz_2 along with certain other double mutant combinations.

The characterization of the isolated substances was made by the following: 1) Rf values; 2) absorption maxima; 3) visible color; 4) color reactions; 5) response to various diagnostic spraying reagents; 6) thin layer chromatography (Silicagel); 7) paper chromatography. Absorption maxima of chromatographically pure compounds were recorded in 5% methanol-hydrochloric-acid solution on UV specord VIS. The relative quantities of the pigments were determined on a Klett-Summerson photoelectric colorimeter.