plant mt DNA's have a buoyant density of 1.706 ± 0.001 g/cm^3 and a molar GC of 46.8% (e.g., 3). Furthermore, our results confirm the finding in higher plants that mt DNA forms a single band in CsCl with no satellites. From this and a previous study (2), we are now able to summarize the buoyant density and molar % GC data for the three types of maize DNA, nuclear, chloroplast and mitochondrion.

Table 2

Buoyant densities and molar % GC of nuclear, chloroplast and mitochondrial DNA of maize

	Buoyant density, g/cm^3	Molar % GC
nuclear DNA	1.702	42.9
chloroplast DNA	1.700	40.8
mitochondrial DNA	1.706	46.8

References:

1. Miller, R. J. and D. E. Koeppe. 1971. Science 173:67-69.
2. Shah, D. M. and C. S. Levings, III. 1973. Crop Sci. 13:709-713.
3. Wells, R. and J. Ingle. 1970. Plant Physiol. 46:178-179.

C. S. Levings, III
D. M. Shah

OSMANIA UNIVERSITY
Hyderabad, India
Department of Genetics

1. Confirmational studies of the accumulated flavonol in a_1 mutant aleurone tissue.

Extensive chemical analysis of a_1 mutant aleurone tissue showed the accumulation of quercetin in the hydrolysates. Average Rf values, Abs. Max. in UV, and data from infrared and mass spectral analyses confirmed its structure. Trace amounts of kaempferol (tetrahydroxy) and

quercetogetin (myrcetin?) were also present as revealed by mass spectral information. In addition, a fluorescent spot, probably phenolic in nature, was observed on chromatograms, with an Rf value of 0.18 in BAW (4:1:5). Its exact chemical nature is not yet known.

A. R. Reddy
G. M. Reddy

2. Differential action of intensifier gene.

Quantitative estimations of pigments from various double mutant combinations of the homozygous recessive intensifier gene, such as in bz_1; in bz_2; in a_1; in a_2; in Pr, from single mutants such as a_1; a_2; bz_1; bz_2, and from dominant A C R tissue have been made to determine whether the action of the homozygous recessive intensifier gene in enhancing pigment levels is uniform in all combinations. It was consistently found, through O.D. values, that recessive in increases the pigment levels in the descending order Pr, bz_1, bz_2 and a_2, whereas there is no statistically significant increase in in a_1 tissue. It seems that in increases the anthocyanins, d-deoxyanthocyanin and leucoanthocyanidin, which are known to be either the end products of the pathway or synthesized very late (leucoanthocyanidin) in the pathway. However, homozygous recessive intensifier does not boost the levels of the flavonol pigment.

A. R. Reddy
G. M. Reddy

3. Analysis of developing kernels.

A C R Pr plants were self fertilized and ears were harvested periodically 15-20 days after pollination. Colorless seeds from surface sterilized cobs were analyzed for suspected intermediates in anthocyanin synthesis. It was observed that 15 day old aleurone tissue extracts revealed the presence of quercetin and leucoanthocyanidin. No flavonoid pigment was detected in aleurone tissue of 10-14 day old kernels. Quantitative studies on the levels of various flavonoid pigments and their suspected precursors in the developing aleurone tissue are in progress.

A. R. Reddy
G. M. Reddy