

not as great as that of plants with R^1 . As seen from the data below the main tassel tends to be slightly but consistently lighter than the tillers. It has long been known that in testcrosses of R the resulting endosperm will give a "mottle" expression. The data below shows that the degree of mottling can be determined by the position of origin of the gamete in the tassel.

R-locus Expressions From Rr Heterozygotes

	Scores from four separate plants and their tillers			
	#1	#2	#3	#4
Main Tassel	15.32	18.68	20.68	18.18
Tiller #1	20.44	19.56	19.76	18.08
Tiller #2	19.90	20.16	21.40	20.14
Tiller #3	20.84	19.76	21.12	19.88

Bernard C. Mikula
Scott Warren
William Meyer
Steven Green

DEKALB AGRICULTURAL ASSOCIATION, INC.
DeKalb, Illinois

1. Screening for monoploids of maize by use of a purple embryo marker.

A new system for differentiating putative monoploids from diploids in the embryonic stage may eliminate need for germination of large numbers of kernels. This system utilizes a male parent which we have called the "Purple Embryo Marker". This marker carries a set of genes, b pl A C R^{nj} :Cudu pr P^{wr} which produce a deep purple pigment in the embryo. This color is visible in the dormant kernel itself. The purple embryo marker stock also produces a purple aleurone color by which contaminant kernels, produced by accidental pollination with

male parents other than the Purple Embryo Marker, can be recognized. The kernels which do not show any purple color in the embryo but do have the purple aleurone pigment are selected as putative monoploids. These include monoploids, diploids with mutated color genes, maternal diploids and possibly other non-colored individuals. By this technique, 90% or more of the marked kernels can be discarded before germination. The few kernels saved are then germinated, the developing embryos rechecked for the marker color and root-tips taken from the putative monoploids to make chromosome counts. Those seedlings that have only one set of chromosomes per cell, the monoploids, are then saved for development of homozygous diploids. The possible value of the PEM marker was suggested to us by Dr. Irwin Greenblatt.

Sherret S. Chase
Devender K. Nanda

2. Photo-induced transformation of inflorescences in maize-teosinte hybrids.

Maize (Zea mays L.) - teosinte (Zea perennis (Hitchc.) Reeves and Mangelsdorf) crosses were made to study genotype-cytoplasm relations between the two species. The maize plants involved in this study were normal diploids, $2n=20$. The perennial teosinte plants were tetraploids, $4n=40$. The seeds of the first generation hybrid of the above species were planted directly in the field, near DeKalb, Illinois, during the summer of 1964. These plants grew well in the field but failed to show any signs of floral development under the influence of long day lengths. During October, 1964, a few tillers, with roots, of several of these plants were transferred to the greenhouse and subjected to the shorter day lengths of the fall season. After floral induction had been initiated, the plants were accidentally subjected to an artificially lengthened photo-period. At flowering time, partial transformation of the male inflorescences to a vegetative condition was observed.

The transformed inflorescences resembled the malformed tassels produced by the disease of maize known as "crazy top", caused by the fungus Sclerospora macrospora (Sacc.) Thirum. In some cases the vegetatively transformed