

## 2. Normal vs. male-sterile cytoplasm in maize.

In interregional and regional experiments with inbreds and hybrids at Athens in 1971, differential reactions of cytoplasm and genotypes, in addition to that for H. maydis, Race T, were observed. Inbreds Va 35 N and 33-16 N showed more red anthocyanin in leaves than their T cms counterparts. NY X65 N had what appeared to be a physiological yellowing of leaves in comparison to green leaves for NY X65 T cms. M14 S had yellow striping of leaves while M14 N had green leaves. Pa 33 N, Pa 70 N, and M14 S had a greater intensity of apparent corn stunt than their counter sources of cytoplasm.

Under the prevalence of H. maydis, Race T, a comparison of N and T cytoplasm showed, in many of the hybrids, reduced plant height, yield, number of ears per plant, number of erect plants, and grain quality. In general, T cytoplasm decreased ear height. However, one hybrid with T cms averaged 43 inches in ear height; its N counterpart averaged only 38 inches (13 cm difference). The T cytoplasm decreased number of days to mid silk in Dixie 18 while it increased the days to mid silk in NC 222.

Helminthosporium lesions on F44 N were especially small. Lesions on GA 156 (Ga cms) looked as if they might be H. turcicum instead of H. maydis lesions.

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## 3. Mineral-deficient maize inbreds.

In 1972, extreme purpling occurred in the leaves of young plants of the yellow-kerneled inbred, Cl 21, on Appling soil in the nurseries at the Plant Science Farm, Athens. Under prevailing cool weather the purple color remained until the plants were 18 or more inches high before disappearing.

Plant analyses at the University of Georgia Soil Testing Laboratory pinpointed a suspected P deficiency. Phosphorus content in the lower leaves was 0.23% instead of the normal level of 0.30%, although adequate fertilizer had been applied by broadcast and in the drill.

Another inbred, GA 153, could be spotted easily in the nursery both in 1971 and 1972 due to the yellowing of its leaves. Plant analyses showed that this white-kerneled inbred is deficient in Mg (magnesium) and also N