

II. REPORTS FROM COOPERATORS

AGRICULTURAL ALUMNI SEED IMPROVEMENT ASSOCIATION, INC.
West Lafayette, Indiana

1. Preliminary indications of an Rf suppressor.

Observations from two sources during the past season indicate an unusual reaction of CI.44 when used as the pollen parent on lines carrying Texas sterile cytoplasm and restorer genes. The single cross Oh45 T Rf Rf x CI.44 was completely sterile until its silks started to dry and then it shed a little pollen.

In a program of backcrossing CI.44 on T Rf, difficulty has been experienced in "loosing" the Rf gene. This summer two of four backcross progenies of CI.44 on plants known to be of the composition T Rf rf yielded all sterile plants.

This peculiar reaction of CI.44 seems to indicate it carries a gene, or genes, which suppress the Rf gene. To our knowledge no such gene has been reported but it is entirely within the realm of possibility that such a gene does exist. Numerous additional crosses have been made to further investigate these unusual reactions. These crosses will be observed in Florida this winter and in Indiana next summer.

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1. Numerical non-disjunction of chromosome 6 in an autotetraploid maize.

Numerical non-disjunction of chromosome 6 in a colchicine induced autotetraploid maize was studied by observing the number of nucleoli contained in the nuclei of the four spores in the pollen quartets in which the spores have not yet become free from each other. In maize, they remain together for a time after the completion of meiosis and it is also possible to distinguish the two division planes, since a cell division follows the first meiotic division. Usually each of the four microspore cells of the pollen quartet contains two nucleoli in the early stages organized by the two chromosomes 6 contained in their nuclei. These become fused together in the later stages. In each of five out of 207 pollen quartets examined at the early stages with