Amylose content.

After having stabilized a successful waxy hybrid breeding program, our attentions were shifted to the possibilities of altering the amylopectin-amylose ratio of corn in the opposite direction by increasing the amylose content.

An endosperm mutation was found in the Bear Hybrids nursery in 1945 which we believe to be unreported. This gene, which we have tentatively designated as *ae*, behaves as a simple recessive. In 1950 this gene was crossed with standard corn belt lines. The amylose content, in most cases, was doubled in the F_2 segregates. Slight variations were noted, depending upon the line which was used as recurrent parent in backcrosses. Also of interest are the facts that water soluble polysaccharides remain about the same as in dent hybrids; and when crossed with waxy lines, an appreciable amount of amylose is noted.

Our amylose program at present is concerned with determining the influence of this mutant in various combinations with *du, su_1, su_2, wx, sh, br,* and *fl*. In 1951 *ae* was also crossed with su^{am} and *du* which J. W. Cameron furnished (California Agricultural Experiment Station). These crosses have all resulted in dent endosperm indicating the separate identity of *ae*. It should also be noted that these testers from Cameron are similar to the material with which H. H. Kramer (Purdue Agricultural Experiment Station) has been working.

This coming summer we hope to obtain a complete set of double recessives of the various endosperm genes with *ae* as well as advance some to triple recessive combinations. Work planned for the summer also includes a program to determine the location of this mutant.

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