5. A high Amylose starch.

Numerous defective endosperm types that might give higher than normal amylose starch (25-30%) have been selected and sent to the Northern Regional Utilization Branch, Peoria, Illinois for amylose determinations by Dr. M. M. MacMasters and associates. To date only one such defective has been found that offers much promise (Amylose content 37–40%). This defective was among a group obtained from L A. Tatum at the Kansas Agricultural Experiment Station. Its parentage was Cassell O. P. It seems to be a form of "dull" with a sort of a "soft velvety sheen" appearance. Two extractions of this strain have been given the temporary designation of ha_m122 and ha_m123. So far this strain has not been identified as possessing an allele of any known defective endosperm gene. When crossed and backcrossed to Argentine waxy the waxy selected seeds give an amylose content ranging from 7.0 to 10.0 percent compared with 3.0 to 5.0 percent for Argentine waxy. Reciprocal crosses were attempted in 1955 between ha_m and Kramer's high amylose strain (Maize Genetics Newsletter #29). Only F_1 seed for the cross made on ham was obtained, and its amylose content was 27.0 percent indicating that the factor responsible for the increased amylose content is not allelic to the factor causing high amylose in Kramer's strain.