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1. Recombination between alleles at the sh_2 locus.

In addition to the wx locus, there is also evidence for recombination between mutations at the su_1 and gl_1 loci (Salamini). It seems apparent that this is general. We have been interested in the sh_2 locus because it is implicated in the production of the enzyme adenosine diphosphate glucose pyrophosphorylase.

It has been found both at the Coop and here that the defective seed stock bt^{60-156} is allelic to sh_2 (MNL 41:207). We have used the F_1 stock from the allelism test to test for recombination. The F_1 seed was planted in 1967, and the plants pollinated by a stock that was wx^c/wx^c ; sh_2/sh_2 . A total of 44491 kernels were produced, and 17 kernels were normal in phenotype.

The plants from these kernels were grown in the 1968 greenhouse, and the pollen checked to ascertain if the plants were wx/wx as would be expected if the seeds arose from fertilization by the wx^c/wx^c ; sh_2/sh_2 stock. Of the 17 plants, 10 were wx/wx ; 3 were Wx/Wx indicating contamination; and 4 plants did not produce tassel samples that could be checked. This would indicate a recombination rate between sh_2 and bt^{60-156} of 22×10^{-5} on the female side.

Oliver Nelson

2. A lethal ovule factor linked to wx .

In 1965, a plant of the genotype wx/wx^{B1} ; Sh_2/sh_2 when self-pollinated produced 228 kernels of which 172 (75.4 percent) were wx/wx . The ear was semi-sterile.

In 1966, when the non-waxy kernels were planted and the plants selfed, 9 plants gave high percentages of waxy kernels (ranging from 53.0 to 75.5 percent); 7 plants had percentages varying about 25 percent; one plant was wx/wx . Six plants were crossed as females times a wx/wx stock; 4 gave high percentages of waxy kernels (91.1-95.3 percent); 2 had approximately 50 percent waxy kernels. All plants with aberrant percentages of waxy kernels were semisterile. The backcross results indicate a