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 \(sh_2\) (NML 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 \(22 \times 10^{-5}\) on the female side.

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2. **A lethal ovule factor linked to \(wx\).**

In 1965, a plant of the genotype \(wx/wx^{Bl}; Sh_2/sh_2\) 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 semi-sterile. The backcross results indicate a