

### 3. Effect of $su_2$ on $sh_2$ .

When  $Sh_2 sh_2$  is segregating in ears homozygous for  $su_2 su_2$ , the highly collapsed phenotype typical of  $sh_2 sh_2$  is not obtained. The doubly recessive  $su_2 su_2 sh_2 sh_2$  kernels are similar to  $su^{am} su^{am} du du$  kernels in phenotype. This reaction is similar to the effect of  $ae$  on  $su_1$ .

-- Herbert H. Kramer

### 4. A new "salmon silk."

A salmon silk character which shows good expression in the absence of red pericarp has appeared in progeny from U. V. treated pollen. If allelic to  $sm$ , linkage studies on chromosome 6 should be facilitated.

-- Herbert H. Kramer

PURDUE UNIVERSITY  
Lafayette, Indiana  
Department of Botany and Plant Pathology

### 1. The $Wx/wx$ locus.

#### A. Segregation in backcross progenies

The frequency of  $\pm^{Wx}$  pollen grains in plants of a backcross progeny  $(90 \times C) \times C$  has been investigated with greater numbers than previously. At the same time the  $F_1$  was grown as a standard. The mean frequency of  $\pm^{Wx}$  pollen grains in the  $F_1$  plants sampled was  $74 \times 10^{-5}$  with the individual plant estimates being 73; 68; 80; 89; 66; 69; 80; 82; 89; 77; 74; 58; 67; 86; 59. These represent single estimates from each of 15 plants. In 1958 the mean frequency of  $\pm^{Wx}$  pollen grains from the same cross was  $88 \times 10^{-5}$ .

Sixty plants from the BC progeny were sampled. Of these 34 plants had a  $\pm^{Wx}$  frequency of less than  $2 \times 10^{-5}$  (or 0 after correction for parental  $\pm^{Wx}$  frequency). For the remaining 26 plants the mean frequency of  $\pm^{Wx}$  was  $89 \times 10^{-5}$  with the individual plant estimates being 98; 103; 75; 65; 107; 138 (125, 151); 57; 93; 87; 65 (51, 78); 89, 63; 74; 108; 87; 75; 63; 103; 115; 92; 68; 99; 114; 138 (143, 132); 70; 78. These figures represent single estimates for each plant with the exception of three which are an average of the estimates enclosed in parentheses. Some of the frequencies estimated for BC plants appear obviously to be outside the range of estimates for the  $F_1$  plants and may represent an effect of genetic background on this recombinational process.

Another backcross progeny  $(C \times H21) \times C$  has also been sampled. Here there were 37 plants of which 18 had a  $\pm^{Wx}$  frequency of less than  $2 \times 10^{-5}$  while 19 plants had high frequencies.

The relative proportions of zero frequency (after correction for parental frequency) plants to high frequency plants in the two backcross progenies are not in disagreement with the ratio of 1 zero frequency plant:1 high frequency plant expected if heterozygosity at the waxy locus were a prerequisite for the production of a high frequency of  $\pm^{Wx}$  pollen grains.