

The location of f13 on chromosome 8

A new floury endosperm mutant originally obtained from Bear Seed Company in 1968 has been designated as floury-3 since two doses of the mutant gene in the endosperm condition a mutant phenotype, as with floury-1 and floury-2. The effect of the mutation on storage proteins and amino acid composition has been reported (Y. Ma and O. E. Nelson, Cereal Chem. 52:412, 1975).

Efforts to locate f13 by crosses with a set of waxy translocation stocks indicated that f13 is located on chromosome 8. Subsequently a f13 stock was used to pollinate plants of the constitution v16 ms8 j/v16 ms8 j. The phenotypically floury seeds in the F₂ progeny, which would be those receiving the f13 gene from the maternal parent, were selected for planting. The results confirm the location of f13 on chromosome 8 and indicate the gene order to be f13 v16 ms8 j:

<u>+++</u>	<u>v++</u>	<u>vms+</u>	<u>+msj</u>	<u>++j</u>	<u>+ms+</u>	<u>v+j</u>	<u>vmsj</u>	Total
196	4	1	20	15	3	0	12	251

$$\underline{v} = 6.7\% \quad \underline{ms} = 14.3\% \quad \underline{j} = 18.7\%$$

The percentages of v/v, ms/ms and j/j plants indicate recombination values between f13 and v16 of approximately 14 percent, between f13 and ms8 of 28 percent and between f13 and j of 38 percent, disregarding double crossovers.

The numbers of plants in the phenotypic classes agree reasonably well with the numbers expected if f13 is located 14 crossover units proximal to v16 except for an excess of plants that are male sterile but non-japonica; possibly this arises from difficulties in the classification of japonica. There were also difficulties in the classification of virescent, and the estimate of 14 percent recombination between f13 and v16 should be regarded as a minimal estimate.

Backcross progenies to be grown in the summer of 1976 should permit more accurate estimates of the map distances separating f13 from the other markers on chromosome 8.

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- b) The growth regulator and gibberellin physiology of sensitive lines should be explored in order to clarify the timing, concentration and methods of application necessary to bring about maximum reversion;
- c) A study of the effect of the so-called "anti-gibberellins" upon sterility in normal cultivars should be initiated.

We invite correspondence with researchers who have material they feel would be suitable for inclusion in such a program.

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