

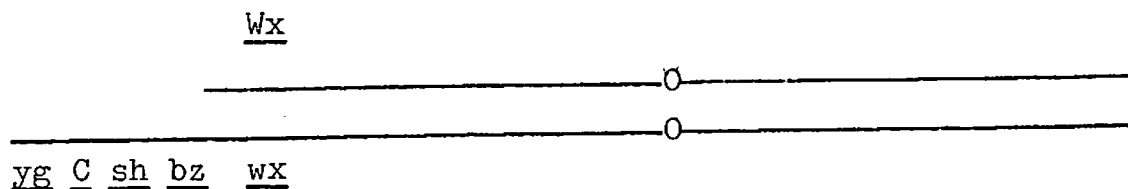
Normally filled grains	Deficient grains
<u>Wx</u> - type (blue staining)	<u>wx</u> -type (brown staining)
371 (0.23%)	163,236
	47.7 (11,350 empty grains in a total of 23,813)

The rate of the cross-over type is of the same order of magnitude not only in the two tests, as expected, but also is of the order of size of the rate of the intracistron recombination within the locus Wx and of the (intergenic) crossing-over between A₁ and Sh₂. This situation may be of use in the study of some phenomena.

A. Bianchi
B. Borghi

2. Reversion of chromosome 9 markers in normal and hypoploid maize.

The multiple recessive tester for chromosome 9 markers yg₂ C sh bz wx has been fertilized with pollen produced by plants of the following hypoploid constitution (produced in the progeny of the TB-9b stock on the same multiple recessive tester):



Other plants of the multiple tester have been self- and/or sib-pollinated. The kernels obtained in the two types of crosses have been analyzed as to endosperm and seedling traits in order to detect possible reversion events. The results of the scoring have been as follows:

Total no. of kernels	Reversion for						Total no. of seed- lings	Rever- sion for <u>yg</u>	
	<u>C</u>		<u>sh</u>		<u>bz</u>			no.	x10 ⁻⁵
	no.	x10 ⁻⁵	no.	x10 ⁻⁵	no.	x10 ⁻⁵			
6,066	from normal x hypoploid						5,156	0	0.0
70,190	from normally diploid plants						48,000	0	0.0

The reversion rate of the genes considered, on the basis of these preliminary data, indicates that the hypoploid condition, where no opportunity for normal pairing and crossing-over is given, is accompanied, as in other species (Saccharomyces, e.g.) for certain mutants (supposed to be due to base losses and insertions in DNA), by lower reversion rates than in the normally diploid condition which has been postulated to favour such reversion by means of recombination phenomena. This finding is at variance with what has been obtained by Bianchi and Tomassini (Mutation Research, 2 : 352, 1965) for the waxy character on pollen grains with a much larger statistical basis, where no difference has been detected between the two chromosome conditions. However, obviously, more data are needed to confirm or to disprove the differential behavior of the markers yg, C, sh, and bz as compared with that of the wx locus.

Moreover, the figures of the normal x hypoploid combination are not directly comparable to those from the normally diploid plants, because in the former case the paternal chromosome has not undergone regular pairing and crossing-over, as contrasted, obviously, to the seed parent chromosome which, in this respect, has undergone the same meiotic processes as the chromosomes of the diploids.

A. Bianchi
B. Borghi

3. A three point test for an endosperm trait in chromosome 7.

Data reported in the last MNL issue indicated that a "collapsed endosperm" (cl) mutant uncovered by TB-7 showed 8-9% crossover with gl₁.

An F₂ of the mutant with a tester marked with c and gl₁ produced the following data: