

Further studies on other white endosperm-albino mutants are planned as well as studies on other pigment deficient mutants (e.g., luteus, pale greens, virescents, etc.).

Marilyn Bachmann

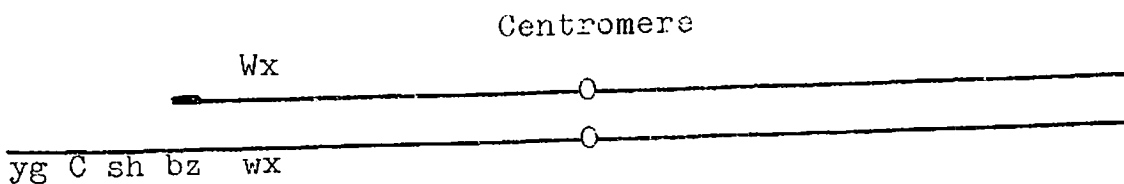
ISTITUTO DI ALLEVAMENTO VEGETALE
Via di Corticella 133
Bologna, Italy

1. Very low cross-over rate between wx and the breakage point of TB-9b.

The position of the waxy locus has been indicated at about 2/5 of the length of the short arm of chromosome 9 taken from the centromere (McClintock). The breakage point of TB-9b has also been given as .4 of the arm from the centromere (Roman).

Since the wx locus is not uncovered by the TB-9b it should be inferred that the cytological distance between wx and the breakage point of such a translocation is quite negligible. Genetical data suggest that the cross-over distance is also very tiny indeed.

Crossing of TB-9b on a multiple tester of chromosome 9 (yg C sh bz wx) permits the easy identification of the hypoploid individuals of the following constitution:



When these plants are backcrossed to the multiple tester, the kernels obtained turned out to be of the following type:

<u>Wx</u>	<u>wx</u>	Total	% of <u>Wx</u>
13	6053	6066	0.21

Obviously the rate of crossing-over between Wx and the break point could be evaluated also on the basis of pollen grains produced by such hypoploid plants. Provided that the Wx bearing chromosome, because of the terminal deficiency, leads to pollen abortion, normally filled pollen grains possessing the dominant factor should originate only from crossing-over between Wx and the break point.

Staining of the pollen produced by the hypoploid type plant with iodine-potassium iodide solution permitted the following classification:

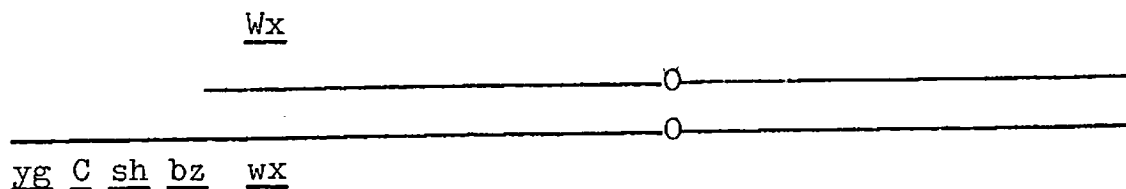
Normally filled grains	Deficient grains
<u>Wx</u> - type (blue staining)	<u>wx</u> -type (brown staining)
371 (0.23%)	163,236
	47.7 (11,350 empty grains in a total of 23,813)

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: