

Marker	Chromosome	Number of examined F ₂ progenies	Number of Italian populations	Segregations	
				>3:1	<3:1
<u>lg</u> ₁	2	80	74	4	1
<u>sh</u> ₂	3	8	8	0	0
<u>su</u> ₁	4	91	85	4	1
<u>bt</u> ₁	5	9	8	9	0
<u>y</u>	6	75	71	4	0
<u>su</u> ₂	6	2	2	0	0
<u>gl</u> ₁	7	67	63	2	0
<u>wx</u>	9	88	82	2	4

The mean number of ears examined per F₂ is about 7 for kernel markers and 4 for seedling characters.

Abnormal segregations can be, at least partially, interpreted as a consequence of the presence of gametophyte factors. The deviations for the markers of chromosomes 4, 5 and 9 could be attributed to the ga factors known for such chromosomes.

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3. Somatic segregation in plants from X-ray and Ethyl-methane-sulphonate (EMS) seed treatments.

In plants derived from seed of a multi-ear popcorn variety treated with X-rays and EMS, the number and relative position of ears segregating mutants have been reported:

Treatment	Number of plants examined	Ears per plant (mean)	Plants with segregating ears				
			A	B	C	D	E
0	209	4.0	-	-	-	-	-
XR 5000 r	154	3.6	-	1	1	2	-
EMS 0.8%, 12h	70	3.6	3	1	-	1	2
1.0%	69	3.0	-	-	-	-	1
1.2%	21	3.0	-	-	1	-	-
1.4%	157	3.1	5	-	2	1	6

- A. One ear per plant
 B. Two ears at successive nodes
 C. Two ears at alternate nodes
 D. All ears
 E. Not classified, being plants with 2 ears, one of which is segregating, or with 3 ears and segregation at the second of them.

The presence of mutations was detected through pollination by the TB-9b translocation line. Consequently, the reported data refer only to mutants located on the distal part of chromosome 9.

The mutants have been observed at the seedling stage (chlorophyll deficiencies, abnormal growth, dwarfism).

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4. Further data on location of a ga factor in chromosome 9.

Self-pollination of plants heterozygous for gametophyte factors and genetic markers on chromosome 9 yielded the following data in 1967:

Linkage phase	Genetic factors							
	<u>W</u>		<u>Wx</u>		<u>Sh</u>		<u>C</u>	
	Total No. of kernels	% of <u>w</u>	Total No. of kernels	% of <u>wx</u>	Total No. of kernels	% of <u>sh</u>	Total No. of kernels	% of <u>c</u>
C	4637	2.2	8736	4.0	533	9.9	533	37.0
R	-	-	10168	40.2	4709	38.8	4709	14.5