

- 4) The F_3 progenies obtained from group 1 reproduce the mutant phenotype, with some exceptions possibly due to incorrect F_2 classification.
- 5) The F_3 ears derived from F_2 intermediate groups segregate for normal, intermediate and mutant phenotypes. The progenies from F_2 group 4 contain phenotypically normal and intermediate ears. From the data at hand, it is possible to hypothesize that two factors control the character.
- 6) In the F_3 progenies studied, mutant ears bear more seeds than the normal ones (404 versus 289), with a slightly higher total kernel weight (69 versus 64 g per ear); the average kernel weight is lower (17 versus 21 g).

C. Lorenzoni
F. Salamini

2. Gametophyte factors in chromosome 9 of inbred lines.

The genetic stock marked with \underline{yE}_2 \underline{sh}_1 \underline{wx} \underline{Ga}_3 has been crossed with 60 inbred lines and the ensuing hybrids have been self-pollinated. The ears obtained have been analyzed (in number, about six) as to the segregation ratios for the markers mentioned. The following table reports the cases in which the data suggest the presence in the inbred lines of \underline{ga} factors, with the exception of the line H 21 in which there is indication of a super- \underline{Ga}_3 factor. Obviously, in general, all the

Line tested	Marker rate significantly deviating from .25			Ears deviating/ Total ears
	<u>sh</u>	<u>wx</u>	<u>yE</u>	
H 21	.29	.29		4/8
MIBO 4	.17			3/15
R 157	.16	.17		1/4
R 158	.04	.00		1/4
W 32H	.20	.17		3/3
W 64A		.18		3/6
L 1047	.20	.17		3/3
L 1057	.14	.01		1/5
L 1058	.15		.00	1/6

cases reported in the table may also be interpreted as indicative of other Ga/ga differences besides Ga₉, but all giving rise to significant deviations in the Mendelian ratios of markers in chromosome 9. In the F₂ involving the line L 1047, a 4% frequency of colored kernels was observed in one ear which, however, showed normal ratios for the other markers. The inbred lines in which no significantly deviating values have been obtained are the following: A 90, A 158, A 239, A 251, A 364, A 374, B 2, B 6, B 14, C 103, Lo 5, Lo 11, Lo 12, Lo 22, Lo 32, Lo 38, Lo 58, Lo 289, MIBO 6, MIBO 7, MIBO 9, OH 7, R 87, R 117, RNY, Sel 224, W 9, W 15, W 22, W 23, W 37A, W 75, W 79A, W 85, W 153R, W 187d, W 324, W 374, WF 9, WM 13, WM 13R, WR 3, W 374R, M 14, Minn C₁, Minn C₆, SG 14, C 123, OH 41, L 1038, L 1111.

A. Bianchi

3. Inbred mutations on prolific type of maize.

E.M.S. (ethyl-methane-sulphonate) induced mutations were studied in a pop line. Dry kernels were treated, just before sowing, with a 1.4% water solution of E.M.S. for 12 hours. The plants obtained were pollinated by a stock homozygous for several recessive markers. The female parent possesses the corresponding dominant alleles.

The results obtained are reported in the table:

Treatment	Examined plants	Plants with mutations					
		on 1 ear (1)			on more ears (2)		
0	1077	0			0		
E.M.S. 1.4%	2290	53			29		
(1) Position of the mutated ear							
	Position	1	2	3	4	5	6
	Frequency	18	16	9	3	4	3
(2) Position of the mutated ears							
	Position	1-3, 2-4, 1-3-5 ..		1-2, 2-3, 1-3-4 ...		all	
	Frequency	15		6		8	