

Phenotype of parental seed	Self-colored	With large spots	With fine spots	Pale colored (no spots)
Traits in progeny				
Anthers	Self-colored	Speckled red on white background; some are self-colored.	Finely speckled: some are self-colored.	No progeny
Ears	Monohybrid segregation (or no segregation) for: -spotted seeds - pale seeds	With spotted seeds: -large spotting -fine spotting -With some seeds self-colored -Segregating (or not) for pale colored seeds*	With finely spotted seeds Segregating (or not) for pale colored seeds.	

*Ears segregating for wx and pale colored seeds suggest linkage of the latter phenotype with wx (20-25 c.o.).

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3. Weight of opaque (o_2) and normal kernels on the same ear.

The factor o_2 (opaque-2 on chromosome 7) is being used in maize breeding for the improvement of the protein quality. However, this gene affects negatively the weight of the kernel. An attempt is being carried out to find modifying complexes which minimize the difference between the normal and the opaque phenotype. An inbred line homozygous for o_2 , derived from an Italian variety, has been crossed with 74 lines (S_2), homozygous for the normal dominant allele obtained from the variety Lierna. Self-pollination of such hybrids has yielded ears segregating opaque kernels. The weight of the two classes of kernels has been measured; the results are as follows:

1. The opaque weight is about 14.5% less than the normal,
2. However, statistically significant differences are detectable among the decreases of different ears. Some of them show a decrease of only 6.9%, whereas others reach the value of 26.3%.
3. The opaque kernels in selfed ears of the opaque Italian line crossed with the inbreds A 158 and WF9 weighed about 10% less than the normal ones.

These results suggest the possibility of selecting modifiers which reduce the gap between the mutant and the normal phenotype.

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4. Knobs in inbred lines from Italian varieties.

Cytological examination is being made of the pachytene chromosomes in the pollen mother cells of inbred lines derived from 14 Italian open pollinated varieties.

The results of this analysis are presented in Table 1.