

The stock segregating  $de^{t1}$ , which is known to be linked with  $su$ , presents also germless kernels with almost normal endosperm. It is of interest that  $de^{t1}$  kernels were defective for endosperm as well as germless. The percentage of the new germless is varying: some ears have about 25% of this condition together with an equivalent percent of the original  $de^{t1}$  kernels. Other ears show either only  $de^{t1}$  kernels or the new germless. It is not certain whether the new germless is an allelic special condition of  $de^{t1}$  or is controlled by another locus. In the first case the situation is similar to that described for  $de^{t22}$ , in which its intermediate allele, in heterozygous condition, produces "monohybrid segregation" of about 40% of defectives.

A large scale series of self-pollinations has been completed from ears segregating  $de^{t1}$  and  $de^{t2}$  in background in which both factors are relatively stable and clearly distinguishable from the normal class. The following results definitively prove that  $de^{t1}$  and  $de^{t2}$  are located on chromosome 4 and form an example of balanced lethal system:

	No. of ears segregating:	
	one defective	no defective
both defectives	103	5
356		

From such figures, clearly deviating from a 4:4:1 ratio indicating independence, it is also possible to calculate the recombination frequency between  $de^{t1}$  and  $de^{t2}$ . This turns out to be about 23 percent.

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## 2. Mendelian factors in Italian open pollinated varieties.

In the study of the genetical structure of Italian varieties more extensive data have been obtained, by artificially self-pollinating individual plants of some Italian open-pollinated varieties of commercial field corn. Table I shows the number of plants heterozygous for the recessive characters encountered in scoring the products of such self-pollinations.

Table I. Individuals heterozygous for various recessive mutants in some Italian varieties of maize.

Variety	Ratio	Defective endosperm	Virescent seedling	Yellow seedling	Glossy seedling	Pale green seedling	Dwarf seedling	Striped seedling	Liguleless	Other seed characters	Other seedling characters	Total examined
Locale Valle d'Arena, Potenza	3:1	9	3	2	1	1	1	1		3	2	37
	15:1							1				
Pergola, Pesaro	3:1	7		2		2				2	2	40
	15:1									2	1	
Marano, Vercelli	3:1	5	1	2		1	2		1			23
	15:1	1								1	1	
Sacra Famiglia, Vercelli	3:1	3	3			1	2	3			6	33
	15:1											
Nostrano dell Isola, Vercelli	3:1	3	4			3		1			2	46
	15:1											

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### 3. Mutagenic activity of ethyl methan sulfonate.

In barley, Heslot *et al.* (C.R. Séances Acad. Sci., Paris, 1959) have shown that the ethyl methan sulfonate applied to seed is a very powerful mutagen. Some preliminary experiments conducted by means of pollen treatment in maize gave inconclusive results. However, treatments carried out on maize seeds, heterozygous