

Family 660 was also segregating for Ts₅. The segregation for this character among the three classes for kernel shape was as follows: pointed, 63:59; intermediate, 129:104; round, 57:45. There is no indication in these data of linkage between Ts₅ and kernel shape. Therefore if kernel shape is indeed linked with the Su-su and Ga-ga loci as the other data indicate the sequence of genes must be Pt Ga Su Ts₅. Additional tests involving backcrosses are being made to determine whether this conclusion is correct.

There is some indication of linkage between kernel shape and development of a staminate tip on the ear. Segregation for presence and absence of a staminate tip among the three classes for kernel shape was in one population as follows: pointed, 8:13; intermediate, 26:20; round, 13:2. If this indication is confirmed by further tests one more primitive character will be added to the list of those, Tu, Ga, Pt, and possibly Ts₅, which have their loci on chromosome 4.

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5. Low penetrance of mutant dwarfs arising in teosinte derivatives.

We have repeated the experiments reported earlier (MNL 35) in which mutant dwarfs occurring in teosinte derivatives failed to segregate normally in F₂ populations of crosses with various inbred strains. The data on segregation of dwarfs obtained in 1962 are similar to those previously reported but are now explicable. The ears in F₂ populations in which the parental mutant dwarfs failed to reappear could be classified with respect to their ears into normal, intermediate, and tripsacoid. In 14 F₂ populations in which the dwarfs failed to appear or occurred in low frequencies, the ears were classified as follows: normal, 152; intermediate, 330; tripsacoid, 165.

These data show that the segregation for the tripsacoid condition is approximately normal. In some populations the tripsacoid condition of the ear is accompanied by conspicuous dwarfing of the plants, in other populations it is not.

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6. The tripsacoid nature of variable mutants.

Because the mutants arising in maize-teosinte derivatives are often variable and difficult to classify, it occurred to us that some of the variable mutants arising spontaneously in maize or appearing after inbreeding might have arisen in the same manner and may be tripsacoid