

of the entire harvest was made and tripsacoid cobs selected. Also collected were 8 ears said by the cultivator to be the type he would use as seed ears. Four of these ears were studied. The cobs were shelled and 100 seeds from each ear grown. Three cobs yielded all maize plants but the fourth produced 3 maize x teosinte hybrids. Morphologically maize x teosinte seed could not be distinguished from the pure maize seed on these selected ears. Yet several ears from the field, which had been selected because they possessed smaller than usual seeds, all yielded uniformly teosinte x maize hybrids. There appears to be a chemical feedback mechanism (growth hormone) between the developing seed and the cob because if the ear is pollinated only by teosinte the hybrid seeds are smaller than the few maize x teosinte hybrid seed found on a predominately maize-pollinated ear. This hormone must act to stimulate the conduction of food through the cob to the developing seed.

In the seed corn at Nobogame, Mexico, the frequency of 3 maize x teosinte hybrids/400 plants compares well with the abundance of highly tripsacoid cobs found in the total harvest. These very productive seed ears are not highly tripsacoid, but they too show evidence of teosinte introgression (rigid cob, straight rows and indurated glumes).

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1. Tripsacum studies.

Tripsacum studies have begun to delineate the species lines and evolution of the genus *Tripsacum* from central Mexico north through the United States. Field collections have been made from the Mississippi Valley and from the Gulf Coast, and established in a genetic garden at the Riverside Research Laboratories of Tulane University. The discovery of a more widespread distribution of a narrow-leaved *Tripsacum* along the Gulf Coast has raised some question about the endemism of *T. floridanum* in southern Florida. These plants occur in both open and shade habitats, but always in very moist soils. Diploid *T. dactyloides* is not limited to wet environments, while tetraploid *T. dactyloides* often is found growing in wet soils. Field studies to date have tended to bear out the hypothesis put forward by Tantravahi (*Tripsacum Newsletter* 1968) for the hybrid origin of tetraploid *T. dactyloides*. Prior to the present study diploid *T. floridanum* and *T. dactyloides* were thought to be allopatric, but field studies of the Gulf Coast Region from Texas (Orange-Jefferson, Liberty, Harris, Fort Bend and Brazoria counties) to Florida (Highland, Polk and Hillsborough counties) shows that there are pockets of narrow-leaved *T. floridanum* plants which are probably remnants of a once more extensive Pleistocene distribution.

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