

north along the western side of the Central Plateau in Jalisco. This distribution is remarkably parallel to that of teosinte (MNL 38, 1964). Ecologically, Tripsacum shares with teosinte a preference for limestone rock and elevations from 800 to 1850 meters. The mean month of flowering is October but some of the narrower leaved forms flower in September.

Our collections include an amazing range of variation, some of which has never been described in the literature. Besides the usually mentioned variation in plant habit, (leaf length and width, spike characteristics and pilosity) we have a wealth of variation in plant colors (anthers, glumes, sheaths, leaf bases etc.). We hope to make material available for general study from 15 localities in Mexico and 5 in Guatemala as soon as clones are well established.

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6. Classification of Corn Belt inbreds.

Since the maize of the Corn Belt originated from the hybridization of southern dents and northern flints, present day inbreds can be arranged with respect to their flint or dent characteristics (Anderson and Brown, 1952). Further distinctions can be made with each of these groups on the basis of leaf and plant morphology, chromosome knob number, internal cob morphology, and ear attributes. Depending upon the degree of modification, four classes can be recognized altogether.

Table 1
The Classification of Twelve Inbreds

Dents	Modified Dents	Modified Flints	Flints
WF9	111 A	Oh51A	Oh40B
OS420	W22	38-11	Oh07
HY		L317	
		Oh45	
		Cl03	

A combining ability analysis (method 2, Model I of Griffing, 1956) of the diallel crosses from the above inbreds was conducted.

Table 2
Estimated General and Specific Combining Ability
Effects for Yield Per Plant from Specific
Combinations of Inbreds

Parents	Gen. Comb. Ability	Dent	Modified Dent	Modified Flint	Flint
Dent	8.50	-7.21	17.17	2.65	5.69
Modified Dent	4.80		-23.22	-1.76	1.78
Modified Flint	-4.43			6.29	-5.19
Flint	2.21				-9.41

Standard Error GCA 4.37, SCA 15.84

The estimated effects for specific combining ability, with one exception, show that morphological similarity of inbreds produces low yield in hybrids.

G. S. Johnston

7. Tripsacum or teosinte introgression an obstacle to convergent improvement.

Mangelsdorf (MNL 37) has suggested that convergent improvement is not successful in developing more productive single crosses because of the deleterious effects of homozygous blocks of genes from teosinte or Tripsacum. He further surmised that this method is not a sound means of distinguishing between the different types of gene action if these blocks of genes are partially responsible for heterosis.

This situation was tested by comparing the mean performance in hybrid combination with the degree of "tripsacoidness" of the original and recovered lines of WF9 and 38-11 (obtained from J. H. Lonquist). A tripsacoid index (Sehgal, 1964), based on the angle of rachilla inclination and induration of the rachis, was used to estimate the tripsacoid nature of each line.