

6. Consistent transmission rate for Tripsacum homeolog to maize chromosome 2.

The transmission rate for the Tripsacum chromosome marked by Lg₁, which was lowest (23.9%) among the seven dominantly marked Tripsacum chromosomes (av. 32.2%) segregating from the backcross hybrid (WMT maize X T. dactyloides) X WMT maize as we reported in the last News Letter, has remained constant in two subsequent backcross generations. This rate of transmission is scored as percent of liguled plants grown from ears of addition monosomics for this extra chromosome which had been backcrossed to chromosome 2 tester maize. The data are as follows:

Year	Backcross Generation	No. Tripsacum Chromosomes	Lg %	N
1962	1	18	23.9	92
1963	2	3	18.0	54
F1963-4*	3	1	22.2	54

*Pooled data from 4 ear-row lines grown in the winter crop near Homestead, Fla.

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7. Equal male and female transmission rates for Tripsacum homeolog to maize chromosome 4.

In this case the Tripsacum chromosome was derived from the Florida tetraploid of T. dactyloides following crossing with Alexander's tetraploid sugary golden maize. After a second backcross to diploid su gl₃, some of the ears were self-pollinated while the remainder were backcrossed a third time to the chromosome 4 tester of maize. A comparison of the frequency of starchy kernels in ears from these two types of pollinations shows that the Tripsacum homeolog to maize chromosome 4 has approximately equal transmissability through male and female gametes. The data:

Year	Backcross Generation	No. Tripsacum Chromosomes	Backcross			Self		
			Su %	N	No.Ears	Su %	N	No.Ears
1962	1	18	11.0	285	1	--	--	--
1963	2	2	8.1	1182	4	19.4	1060	4
1963	2	1	6.0	1188	3	10.2	1623	5

The percentages of nonsugary seeds on the selfed ears, 19.4 and 10.2, agree closely with the percentages expected, 15.5 and 11.6, if the male transmission is the same as the female, 8.1 and 6.0, respectively.

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