Linkage Tests of *waxy1* Marked Reciprocal Translocations obtained from the collection of Don Robertson

Janet Day Jackson and Philip Stinard
Maize Genetics Cooperation • Stock Center
Urbana, IL

In the collection of A-A translocation stocks maintained at MGCSC is a series of *waxy1*-linked translocations that are used for mapping unplaced mutants. Over the last decade, new *wx1*-linked translocations have been introduced into this series and are in a conversion program to convert each translocation to the inbred backgrounds M14 and W23. These inbred conversions are then crossed together to produce vigorous F1's to fill seed requests. Below is a summary of the linkage results for some of these stocks. Additional translocation stocks will be tested as time allows.

We report here the positive results of two-point linkage tests with *f1* and *P-ww* for 6 of these new accessions: for *f1-wx1* T1-9's (Tables 1& 2) and for *P1-ww-wx1* T1-9's (Tables 3-6). The linkage tests were set up as modified backcrosses as indicated. These new *wx1* marked translocations have been converted and F1's are now available for distribution. A sixth translocation was found to show no linkage with its appropriate marker stock.

Table 1. *wx1* T1-9(8886) (1L.33; 9L.23)
wx29E
A) The Robertson source showed linkage of *wx1* with *f1*.

Two-point linkage data for *f1-wx1* T1-9(8886)
Testcross: [F1 *wx1* T1-9(8886) x *f1 Wx1* N] x *f1 wx1* N

source: Robertson 86-2247-3

Region	Phenotype	No.	Totals
0	Wx f	98	
	wx +	91	189
1	Wx+	10	
	wx f	10	20 / 209

% recombination *f1-wx1*= 9.6± 2.0

Table 2. *wx1* T1-9(4398) (1L.51; 9S.19)
wx29F

A) The Robertson source showed linkage of *wx1* with *f1*.

Two-point linkage data for *f1-wx1* T1-9(4398)
Testcross: [*F1 wx1* T1-9(4398) x *f1 Wx1* N] x *f1 wx1* N

source: Robertson 67-5242-10

Region	Phenotype	No.	Totals
0	Wx f	535	
	wx +	582	1117
1	Wx+	29	
	wx f	26	55 / 1172

% recombination *f1-wx1*= 4.7$\pm$ 0.6

Table 3. *wx1* **T1-9(8460)** (1S.13; 9L.24)
wx29A

Two-point linkage data for *P1-ww-wx1* T1-9(8460)
Testcross: [*P1-ww Wx1* N x *P1-wr wx1* T1-9(8460)] x *P1-ww wx1* N

source: Robertson 68-7246-4

Region	Phenotype	No.	Totals
0	P1-wr wx	122	
	P1-ww Wx	115	237
1	P1-ww wx	39	
	P1-wr Wx	47	86 / 323

% recombination *P1-ww-wx1*=26.6$\pm$2.5

Table 4. *wx1* **T1-9(8919)** (1S.21; 9L.20)
wx29B

Two-point linkage data for *P1-ww-wx1* T1-9(8919)
Testcross: [*P1-ww Wx1* N x *P1-wr wx1* T1-9(8919)] x *P1-ww wx1* N

source: Robertson 89-3002-6

Region	Phenotype	No.	Totals
0	P1-wr wx	83	
	P1-ww Wx	75	158
1	P1-ww wx	16	
	P1-wr Wx	20	36 / 194

% recombination *P1-ww-wx1*=18.6$\pm$2.8

Table 5. *wx1* **T1-9(8129)** (1S.53; 9L.27)
wx29C

Two-point linkage data for *P1-ww-wx1* T1-9(8129)
Testcross: [*P1-ww Wx1* N x *P1-wr wx1* T1-9(8129)] x *P1-ww wx1* N

source: Robertson 67-5354-4

Region	Phenotype	No.	Totals
0	P1-wr wx	315	
	P1-ww Wx	288	603
1	P1-ww wx	13	
	P1-wr Wx	66	79 / 682

% recombination *P1-ww-wx1*=11.6±1.2

Table 6. *wx1* **T1-9(024-7)** (1S.71; 9L.13)
wx29D

Two-point linkage data for *P1-ww-wx1* T1-9(024-7)
Testcross: [*P1-ww Wx1* N x *P1-wr wx1* T1-9(024-7)] x *P1-ww wx1* N

source: Robertson 68-7256-1

Region	Phenotype	No.	Totals
0	P1-wr wx	276	
	P1-ww Wx	265	541
1	P1-ww wx	35	
	P1-wr Wx	42	77 / 618

% recombination *P1-ww-wx1*=12.5±1.3

wx1 T8-9(4643) (8S.37; 9L.11)

A) The Robertson sources showed no linkage of *wx1* with *v16*.