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1. Recombination studies of alleles at the Rp_1 locus for resistance to *P. sorghi*.

Thirteen dominant alleles, Rp_1^a , Rp_1^b , , Rp_1^m , at the locus Rp_1 in corn that condition resistance to specific biotypes of the corn rust, *Puccinia sorghi* Schw., are known. In the 1964 Maize Genetics News Letter, data were reported suggesting crossing over between alleles Rp_1^a and Rp_1^k identified, respectively, in corn inbreds GG208R and Mex212. In that study, however, the screening scheme was such that only one recombinant, the susceptible type, was identified.

By using an appropriate mixture of *P. sorghi* biotypes both recombinant phenotypes have now been identified. Data from the testcross (B14⁵ - BYD x Mex212) x R168 are reported here.

<u>Parents:</u>		<u>Biotypes of <i>P. sorghi</i></u>			<u>Number of seedlings observed</u>
		<u>901aba</u>	<u>936c</u>	<u>941bR</u>	
B14 ⁵ -BYD	Rp_1^c / Rp_1^c	R*	R	S**	
Mex212	Rp_1^k / Rp_1^k	R	S	R	
R168	rp_1 / rp_1	S	S	S	
<u>Test Cross Progeny:</u>					
Parentals	Rp_1^c / rp_1	R	R	S	19607
	Rp_1^k / rp_1	R	S	R	
Recombinants	$Rp_1^c - Rp_1^k / rp_1$	R	R	R	19
	$rp_1^c - rp_1^k / rp_1$	S	S	S	15

*R - resistant **S - susceptible

The crossing over value between Rp_1^c and Rp_1^k is 0.17%. However, resistant plants can also arise from accidental selfing and susceptibles can also arise from mutation or deletion of Rp_1 . Recombinants have been saved for a progeny test.

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