These data indicate that the gene for rust resistance in Mex 185-1 assorts independently of genes at the Rp locus (Syn A and B.Y. Dent) and that the genes in Mex 189 and Mex 212 are either at or closely linked to the Rp locus.

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4. A gene in P.I. 163558 (Guatemala Flint) for resistance to P. sorghi.

Inheritance studies involving F_1, F_3, and backcross progenies derived from a cross of a rust-resistant inbred selected from P.I. 163558 with the susceptible inbred B14 indicate that P.I. 163558 contains a single dominant gene for resistance to P. sorghi. This is indicated by the following number of resistant, segregating, or susceptible progenies obtained following the selfing of F_2 and backcross populations:

Cross	No. progenies observed Res.	Seg.	Susc.	Expected ratio	P Value
(B14 x PI163558) F_3	24	44	18	1:2:1	.50-.80
(B14 x PI163558) x B14 selfed	0	16	13	0:1:1	.50-.80

P.I.163558 was crossed with K148 containing Rp^3, advanced to the F_3 generation and tested with cultures 904d, 908R, and 928b of P. sorghi. P.I.163558 and the F_1 were resistant to all 3 cultures while K148 was resistant to culture 928b but susceptible to cultures 904d and 908R. The following data indicate that the gene in P.I.163558 is either at the Rp locus or closely linked to it.

Cross	Rust Culture	No. progenies observed Res.	Seg.	Susc.	Expected ratio	P Value
(K148 x PI163558) F_3	904d	15	22	10	1:2:1	.50-.80
"	908R	15	22	10	1:2:1	.50-.80
"	928b	47	0	0	1:0:0	

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