Supplementary Figures

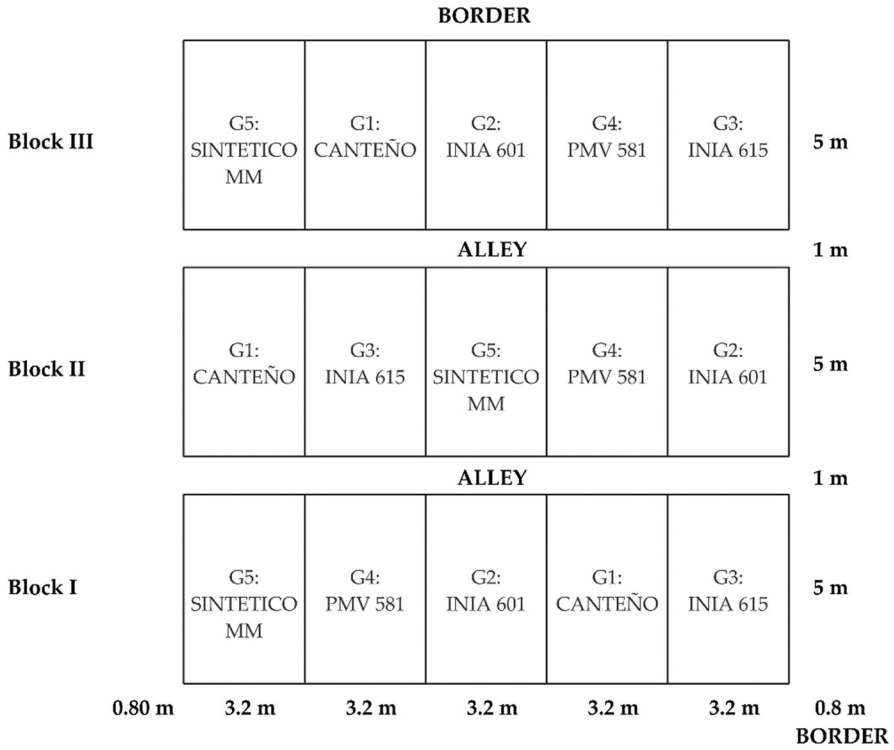

Figure S1. Schematic layout of the field experiment organized as a randomized complete block design with three replicates (Blocks I–III). Each plot (5 m long) was sown with one of five treatments: G1 = Canteño, G2 = INIA 601, G3 = INIA 615, G4 = PMV 581 and G5 = Synthetic MM. Plots within blocks were spaced 3.2 m apart, with 1 m alleys separating blocks and 0.80 m border strips surrounding the entire experimental area, experimental unit (16 m^2).

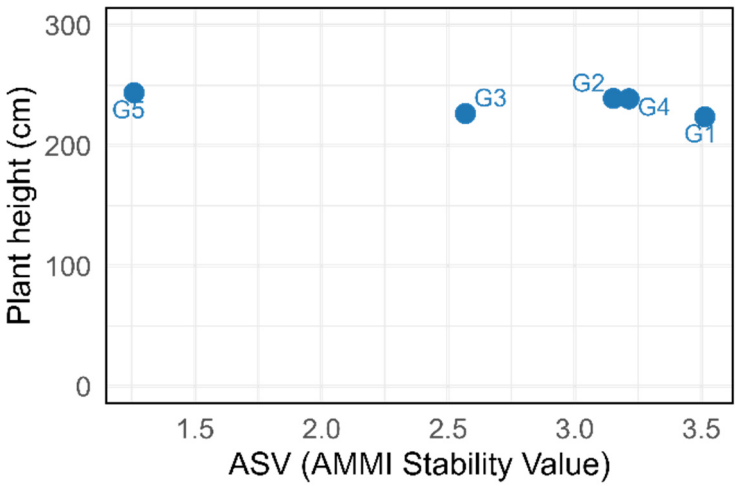

Figure S2. AMMI stability value (ASV) plotted against plant height (cm) for each genotype.

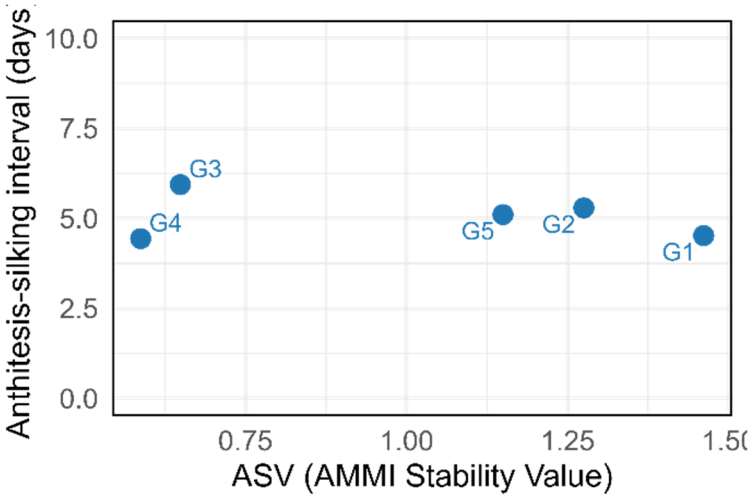

Figure S3. AMMI stability value (ASV) plotted against anthesis–silking interval (ASI, in days) for each genotype.

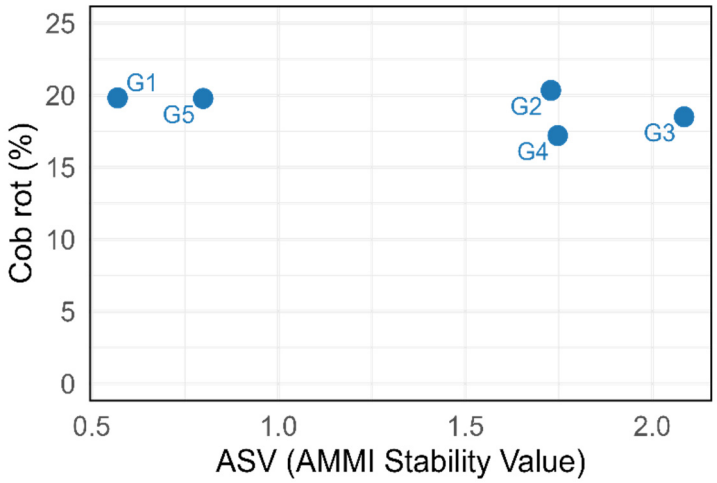

Figure S4. AMMI stability value (ASV) plotted against Cob rot incidence (%) for each genotype.

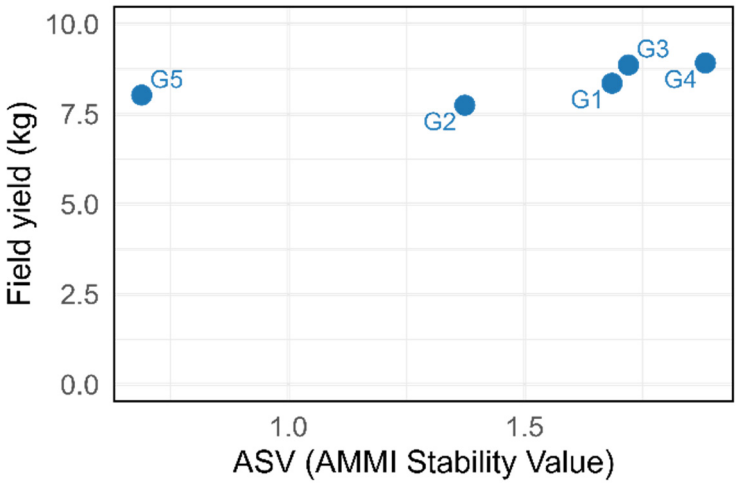

Figure S5. AMMI stability value (ASV) plotted against Field weight (kg) for each genotype.

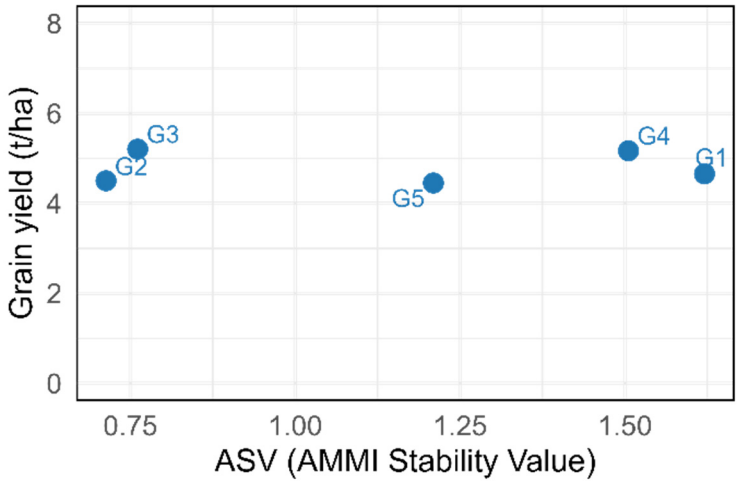

Figure S6. AMMI stability value (ASV) plotted against Grain yield (t/ha**)** for each genotype.

Supplementary Tables

Table S1. The AMMI analysis of variance for Plant height (cm) over four environments.

Source of Variation	Df	SS	MS	*F* value	*p*-value	% of Total Variance Explained
ENV	3	116175	38725	310.74	0.0001 ***	90.8
REP(ENV)	8	997	125	0.76	0.636049	0.78
GEN	4	3646	911	5.58	0.001577 **	2.85
GEN × ENV	12	1881	157	0.96	0.503197	1.47
Residuals	32	5218	163	-	-	4.08
PC1	6	1257.06	209.51	1.28	0.2942	66.8
PC2	4	566.00	141.50	0.87	0.4926	30.1
PC3	2	57.87	28.93	0.18	0.8361	3

Table S2. The AMMI analysis of variance Anthesis–Silking Interval (ASI) over four environments.

Source of Variation	Df	SS	MS	*F* value	*p*-value	% of Total Variance Explained
ENV	3	164.27	54.76	36.38	0.0001	53.68
REP(ENV)	8	12.04	1.50	0.56	0.7998	3.93
GEN	4	18.04	4.51	1.68	0.1771	5.90

GEN × ENV	12	26.13	2.17	0.81	0.6341	8.54
Residuals	32	85.54	2.67	-	-	27.95
PC1	6	19.88	3.31	1.24	0.3124	76.11
PC2	4	5.46	1.36	0.51	0.7287	20.90
PC3	2	0.78	0.39	0.15	0.8613	2.99

Table S3. The AMMI analysis of variance Cob rot % over four environments.

Source of Variation	Df	SS	MS	*F* value	*p*-value	% of Total Variance Explained
ENV	3	23718.8	7906.3	679.41	0.0001	97
REP(ENV)	8	93.1	11.6	0.90	0.5275	0.38
GEN	4	77.5	19.4	1.50	0.2255	0.32
GEN × ENV	12	153.6	12.8	0.99	0.478	0.63
Residuals	32	413.3	12.9	-	-	1.69
PC1	6	100.79	16.79	1.30	0.28	65.6
PC2	4	48.76	12.19	0.94	0.45	31.8
PC3	2	4.04	2.02	0.16	0.85	2.6

Table S4. The AMMI analysis of variance for Field Weight (kg) over four environments.

Source of Variation	Df	SS	MS	*F* value	*p* -value	% of Total Variance Explained
ENV	3	1380.81	460.27	324.69	0.0001	90.1
REP(ENV)	8	11.34	1.42	0.66	0.71	0.74
GEN	4	12.60	3.15	1.48	0.22	0.82
GEN × ENV	12	60.29	5.02	2.37	0.02	3.93

Residuals	32	67.76	2.12	-	-	4.42
PC1	6	52.09	8.68	4.10	0.0037	86.4
PC2	4	7.06	1.76	0.83	0.5161	11.7
PC3	2	1.12	0.56	0.27	0.7651	1.9

Table S5. The AMMI analysis of variance for grain yield (t/ha) over four environments.

Source of Variation	Df	SS	MS	*F* value	*p*-value	% of Total Variance Explained
ENV	3	68.58	22.86	39.25	0.0001 ***	50.20
REP(ENV)	8	4.65	0.58	0.57	0.78800	3.40
GEN	4	6.35	1.58	1.57	0.20424	4.64
GEN × ENV	12	24.78	2.06	2.05	0.05221	18.14
Residuals	32	32.23	1.00	-	-	23.59
PC1	6	20.88	3.48	3.48	0.0095	84.3
PC2	4	2.79	0.69	0.69	0.6043	11.3
PC3	2	1.10	0.55	0.55	0.5823	4.4