Table S1: Environmental characteristics of the experimental sites in Metepec (MT) and Valle de Banderas (VB) located in Mexico.

Field site	Valle de Banderas (VB) Lowlands	Metepec (MT) Highlands
Elevation (m.a.s.l.)	54	2610
State	Nayarit	Mexico State
Latitude	20.784	19.223
Longitude	-105.244	-99.547
Temperature Min/Mean/Max (°C)	22.5/25.8/28.4	12.3/12.4/17.1
Precipitation (mm)	1173	809
Type of soil	Regosol	Andosol

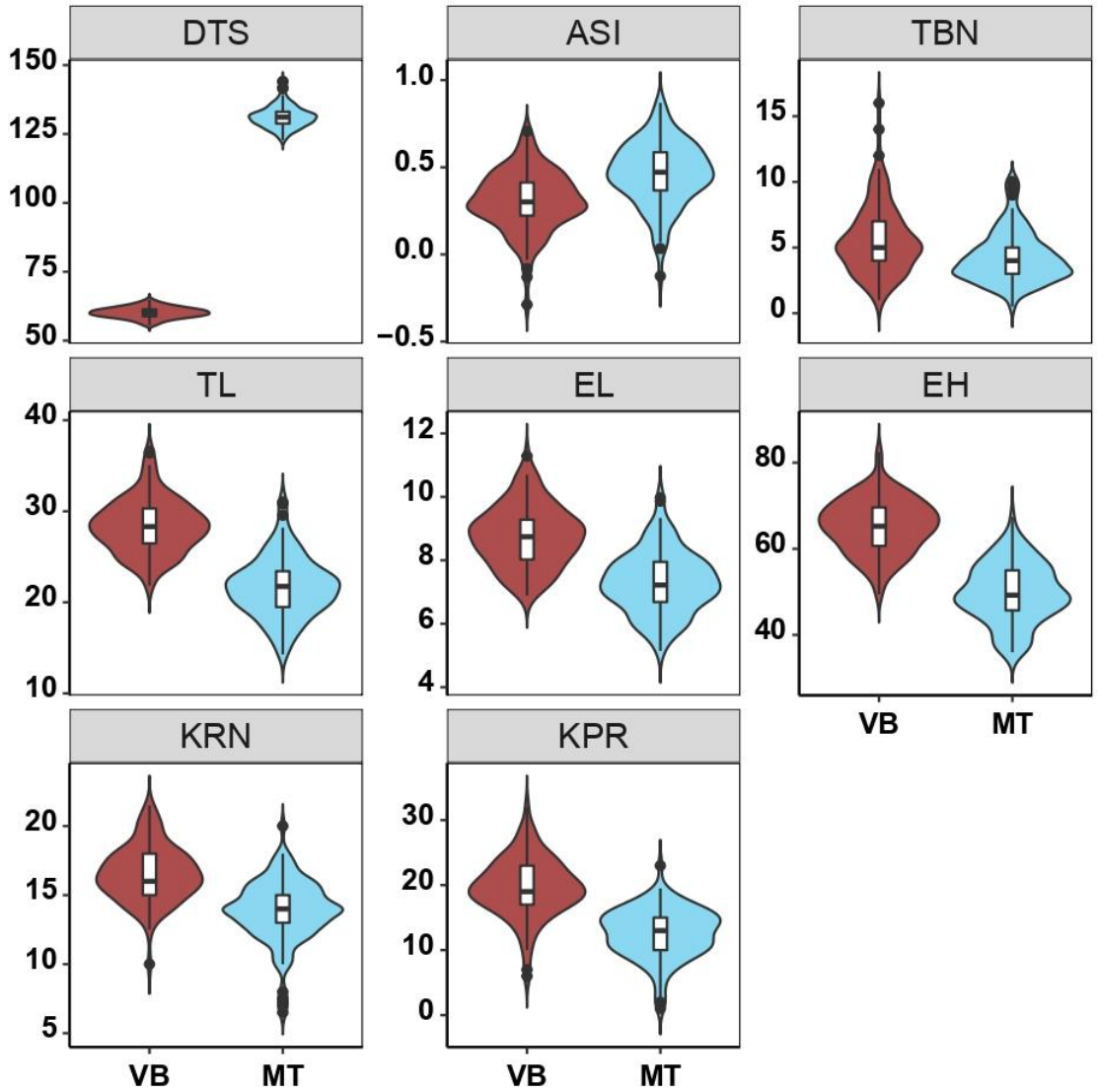

Figure S1 - Supplemental 1 Distribution of plant phenotypic traits for B73xPT recombinant inbred lines grown in VB or MT field sites (trait descriptions were shown in Table 1). Fitted values for each genotype and location combination were used to generate violin plots and were estimated by adding BLUPs of the G+GxE to the estimated location mean. Median values were used to generate the violin plots for TBN, KPR, KRN. Boxes represent the interquartile range with the horizontal line representing the median and whiskers representing 1.5 times the

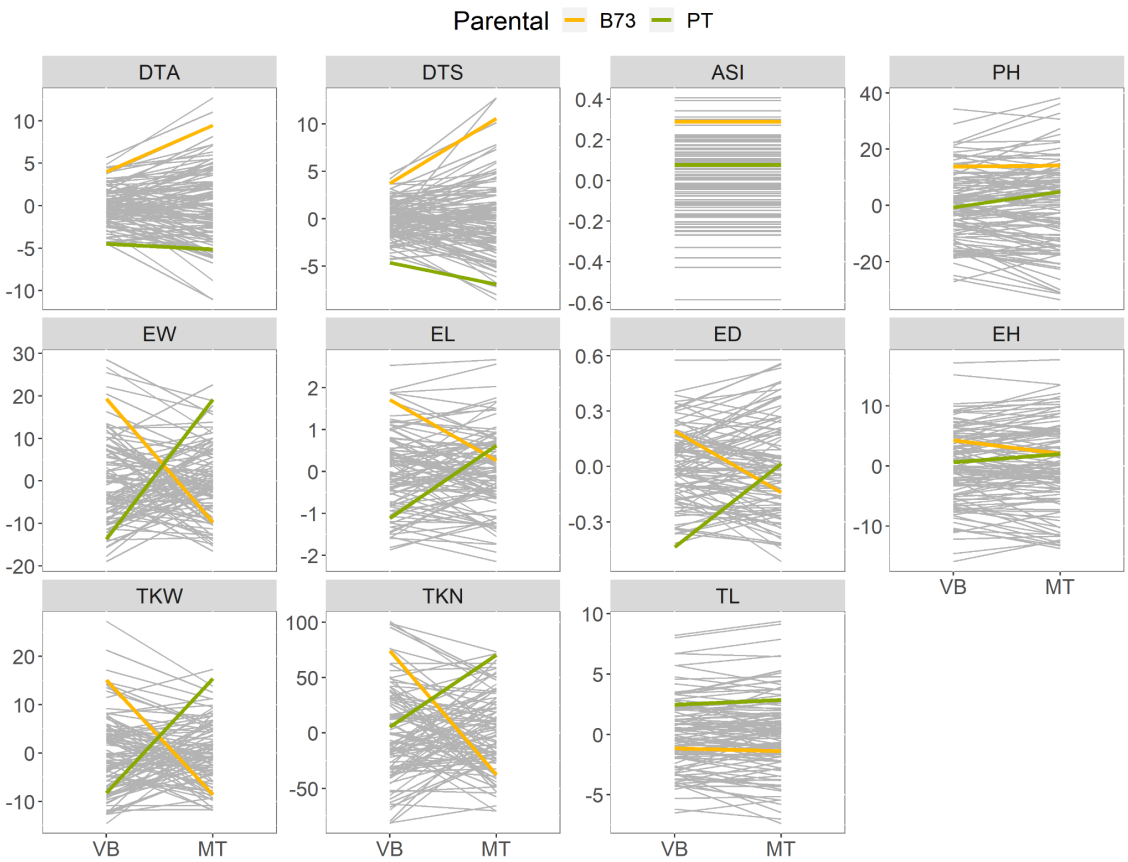

Figure S2 - Supplemental 1 Reaction norm plots of plant phenotypic traits for B73xPT recombinant inbred lines grown in VB or MT field sites (trait descriptions were shown in Table 1). Values shown are the sum of Best Linear Unbiased Prediction (BLUP) for genotype and genotype by location interaction effects for each genotype in two field sites. Gray line segments connect values for each RIL genotype in the two field sites. B73 and PT parental values are shown in thick yellow and green lines respectively.

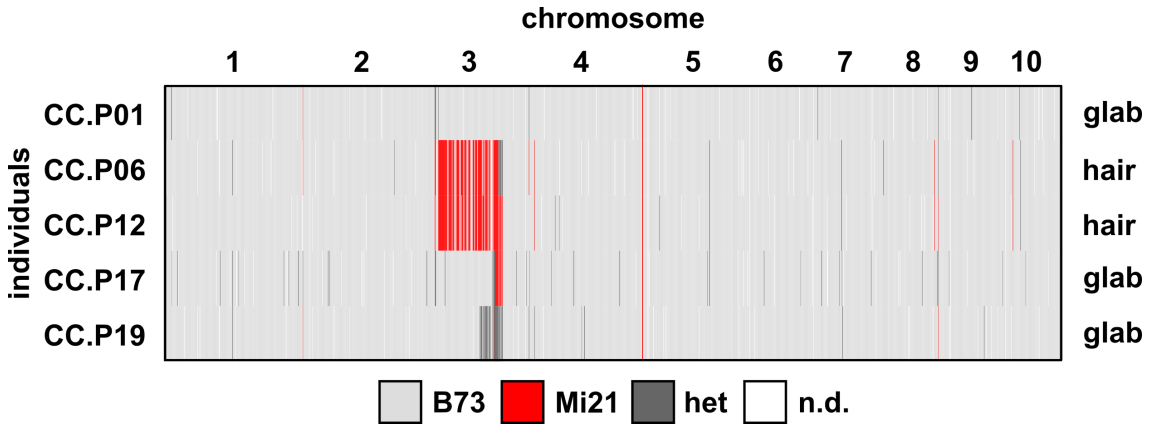

Figure S3 - Supplemental 1: Pubescent segregants from a B73xMi21 BC5S1 family contain Mi21 introgression on chromosome 3.

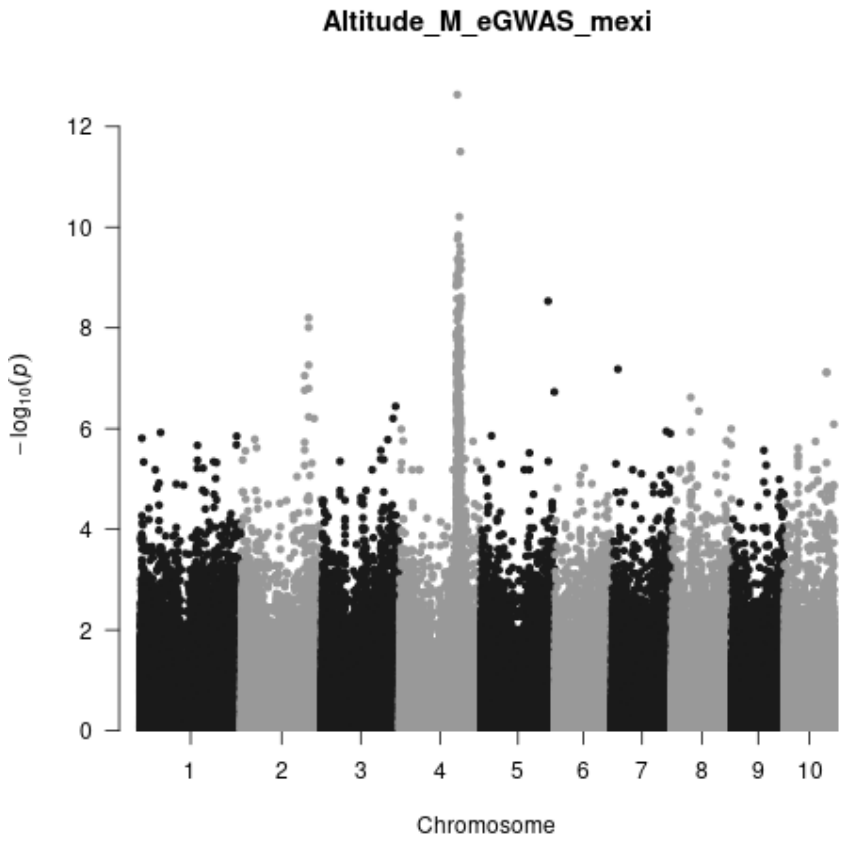

Figure S4 - Supplemental 1: Elevation eGWAS Manhattan plot

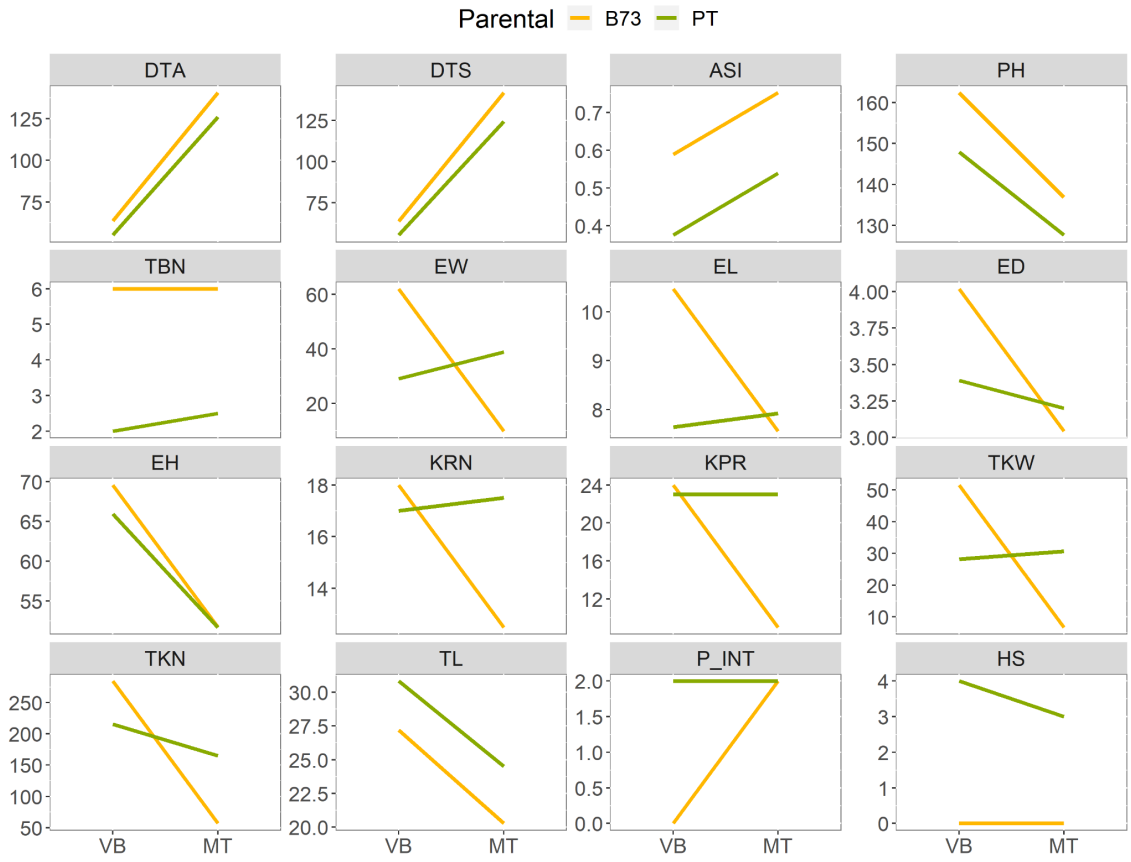

Figure S5 - Supplemental 1: Reaction norms of B73 (green line) and Palomero Toluqueño landrace (yellow line) grown in VB and MT field sites (trait descriptions were shown in Table 1). The fitted values were estimated by adding BLUPs of the G+GxE to the estimated location mean. Palomero Toluqueño values were obtained by evaluating multiple heterozygous individuals from MEXI5 accession from CIMMYT (see materials and methods).

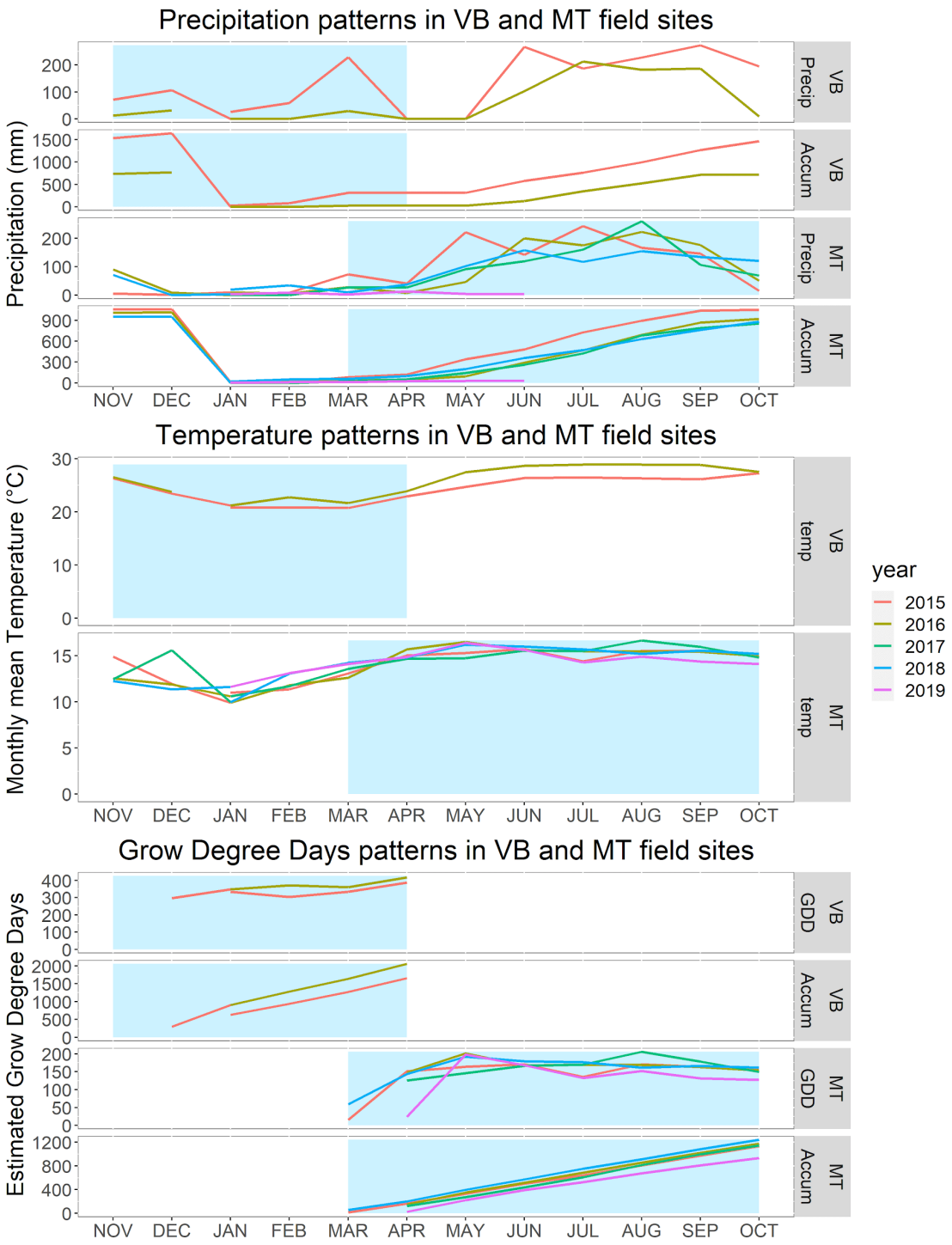

Figure S6 - Supplemental 1: Monthly and accumulated precipitation, monthly average temperature and monthly and accumulated estimated Grow Degree Day patterns for VB and MT field sites for the years where evaluation was performed (2014-2015, 2015-2016 for VB field site; 2015, 2016, 2018 and 2019 for MT field site). The precipitation (in mm) and monthly mean temperature (°C) data was obtained from CONAGUA (National Commission on Water) database

(https://smn.conagua.gob.mx/es/climatologia/informacion-climatologica/informacion-estadistica-climatologica; estation #15266 for MT site; estation #18030 for VB site) and temperature data was complemented with https://wu-next-ibm.wunderground.com/ where needed. Grow Degree Days estimation was performed with the formula GDD = (Tmean - 10)*n where Tmean is the monthly average temperature and n is the number of days accumulated in that month. The blue areas describe the typical growing season in winter in VB site (november-april) and summer in MT site (march-october).