

Supplementary materials

Tables

Table S1. An individual site summary of mean squares and their significant levels for agronomic traits under observation at eight sites for the single cross hybrids evaluated during the 2017-19

Site	Traits							
	GY (tha ⁻¹)	AD (days)	ASI (days)	EPO (cm)	HC (%)	ER (%)	ET (score 1-5)	GLS (score 1-5)
CIMMYT-Harare (OPT)	4.8972 ^{ns}	20.639 ^{***}	2.7703 ^{***}	0.002201 ^{***}	282.22 ^{ns}	74.799 ^{ns}	0.244717 ^{***}	0.61465 ^{***}
Ratray Anold (OPT)	4.6843 [*]	0	0	0.0028976 ^{**}	676.92 ^{***}	28.6705 ^{**}	0	0
Kadoma (RS)	9.3381 ^{***}	0	0	0.0036062 ^{***}	105.199 [*]	115.83 [*]	0	0
CIMMYT-Harare (DIS)	15.7051 ^{**}	10.6477 ^{***}	4.1054 ^{**}	0.0053394 ^{***}	455.45 ^{***}	257.39 ^{**}	0.22959 ^{***}	0.87737 ^{***}
CIMMYT-Harare (LN)	14.0738 ^{**}	7.0626 ^{ns}	3.2910 ^{ns}	0.0034241 ^{ns}	124.904 ^{***}	106.226 ^{ns}	0.15871 [*]	0.66934 ^{***}
Chiredzi (MDS)	0.4176 ^{ns}	21.227 ^{**}	15.2632 ^{***}	0.0058219 ^{***}	59.707 ^{ns}	0	0	0
CIMMYT-Harare (HD)	12.951 ^{ns}	6.7901 [*]	2.5495 ^{ns}	0.0033037 ^{**}	95.859 ^{ns}	65.723 ^{ns}	0.192695 ^{***}	0.39333 ^{***}
Chibero (SS)	5.5924 ^{***}	24.1284 ^{***}	5.4342 [*]	0.004954 ^{***}	71.271 [*]	26.5736 [*]	0	0

winter and summer seasons in Zimbabwe.

^{***}Significant at 0.05, 0.01 and 0.001 probability levels, respectively. GY= grain yield; AD= anthesis date; ASI= anthesis silking interval; EPO= ear position; HC= husk cover; ER= ear rots; ET= northern leaf blight disease; GLS= grey leaf spot disease.

Table S2. Local and exotic lines mated using the partial diallel mating design during the 2016 winter season in Zimbabwe.

Parental number	Name	Genetic background	Genetic background	GCA	GCA Rank
P1	CL115324	Pedigree start = STAL x Temperate	Temperate (T)	0.390**	5
P2	CL1210884	Pedigree start = STAL x Temperate	Temperate (T)	0.789***	1
P3	DJ-154	Pedigree start = STAL x Temperate	Temperate (T)	-0.484***	12
P4	CL1210969	Pedigree start = STAL x Temperate	Temperate (T)	0.009	6
P5	C1008-1	Pedigree start = STAL x Tropical	Tropical (E)	-0.066	7
P6	CL1211291	Pedigree start = STAL x Sub-tropical	Sub-tropical (S)	0.643***	2
P7	CL1211293	Pedigree start = STAL x Sub-tropical	Sub-tropical (S)	0.468***	3
P8	CL1212428	Pedigree start = STAL x Tropical	Sub-tropical (S)	-0.505**	13
P9	CL1214868	Pedigree start = STAL x STAL	Local (L)	-0.346*	11
P10	CL1210571	Pedigree start = STAL x STAL	Local (L)	0.446**	4
P11	CL1310262	Pedigree start = STAL x STAL	Local (L)	-0.186	8
P12	DJ9-5	Pedigree start = STAL x STAL	Local (L)	-0.293*	10
P13	DJ9-1	Pedigree start = STAL x STAL	Local (L)	-0.577***	14
P14	CML444	Pedigree start = STAL x STAL	Local (L)	-0.288*	9

*, **, *** Significant at 0.05, 0.01 and 0.001 probability levels, respectively.