

Supplementary Tables

(Suppl. Table S1). Mean Square values of Analysis of variance (Combined over both seasons) of yield and its attributing traits in maize [see section materials and methods for parental codes and traits description]

SOV		Ch.	P.H	S.D	FLW	L.A	L.W	FS.W	LL
Parents maturity	at	11.71*	286.57*	0.004**	6228**	24814.26**	410.03**	3559.1**	0.21*
F1 at maturity		23.38	548.85*	0.009*	213.06*	8646.4**	594.6**	4180.6**	1.34**

SOV		FLSWR	A	gs	E	L.T	Ci	nlp	GY
Parents maturity	at	0.19*	177.3**	0.04**	44.3**	12.16*	16372.8**	4.33*	1191.1*
F1 at maturity		0.23**	80.13**	0.013*	8.012**	33.08**	2545.1**	1.29*	14239.53*

* = Significance at (*P < 0.05)

**= Significance at (*P < 0.01)

(Suppl. Table S2). Duncan Multiple Range Test (DMRT) for grain yield and its components of four parental lines [see section materials and methods for hybrids and traits description]

Ch.C		P.H		SD		LA	
µg/L		cm		cm		m ²	
Genotypes	DMRT	Genotypes	DMRT	Genotypes	DMRT	Genotypes	DMRT
P4	45.82 ^A	P4	78.44 ^A	P4	0.80 ^A	P4	433.89 ^A
P2	44.58 ^A	P3	76.69 ^A	P3	0.73 ^B	P3	420.16 ^A
P3	43.70 ^{AB}	P1	66.42 ^B	P2	0.71 ^B	P1	383.70 ^A
P1	40.74 ^B	P2	63.04 ^C	P1	0.56 ^C	P2	278.21 ^B
FSW		A		gs		E	
g		µmol/m ² s		mmol/m ² s		mm/s	
Genotypes	DMRT	Genotypes	DMRT	Genotypes	DMRT	Genotypes	DMRT
P4	139.68 ^A	P3	23.73 ^A	P4	0.32 ^A	P2	14.13 ^A
P3	96.78 ^B	P4	17.68 ^B	P2	0.21 ^B	P1	11.38 ^B
P2	86.06 ^C	P2	17.68 ^B	P3	0.14 ^C	P3	8.24 ^C
P1	81.04 ^C	P1	9.24 ^C	P1	0.11 ^C	P4	7.75 ^C
LT		SSC/Ci		Nlp		FLW	
°C		vpm				g	
Genotypes	DMRT	Genotypes	Genotypes	Genotypes	DMRT	Genotypes	DMRT
P1	48.02 ^A	P4	P4	P4	13.61 ^A	P4	54.98 ^A
P2	47.56 ^A	P3	P3	P3	12.82 ^{AB}	P3	46.90 ^B
P3	47.28 ^A	P1	P1	P1	12.21 ^{AB}	P1	39.19 ^C
P4	44.56 ^B	P2	P2	P2	11.42 ^B	P2	34.31 ^C
LL		LW		FLSWR		GY	
Cm		Cm				g	
Genotypes	DMRT	Genotypes	DMRT	Genotypes	DMRT	Genotypes	DMRT
P4	67.10 ^A	P4	6.56	P4	2.54	P4	837.60 ^A
P3	66.68 ^{AB}	P3	6.41	P3	2.41	P3	812.00 ^{AB}
P1	58.61 ^{BC}	P1	6.26	P2	2.20	P2	654.20 ^{BC}
P2	52.12 ^C	P2	4.74	P1	2.01	P1	568 ^D

Values in the same column with the same letter are not significantly different (*P < 0.01).

(Table S3). Duncan Multiple Range Test (DMRT) for grain yield and yield attributing traits of twelve maize hybrids (combined over both seasons) [see section materials and methods for hybrids and traits description]

CH.C		P.H		SD		LA	
		cm		cm		m ²	
Hybrids	DMRT	Hybrids	DMRT	Hybrids	DMRT	Hybrids	DMRT
H12	56.633 ^A	H12	255.97 ^A	H12	0.71 ^A	H12	733.85 ^A
H11	55.367 ^{AB}	H11	252.27 ^{AB}	H11	0.61 ^B	H7	729.91 ^A
H9	55.233 ^{AB}	H10	249.63 ^{AB}	H10	0.60 ^B	H11	693.51 ^{AB}

H8	53.033 ^{ABC}	H9	245.97 ^{ABC}	H9	0.60 ^B	H8	658.87 ^{ABC}
H7	52.867 ^{ABC}	H7	243.90 ^{ABC}	H7	0.60 ^B	H1	648.56 ^{ABC}
H10	52.733 ^{ABC}	H3	238.10 ^{ABCD}	H6	0.59 ^B	H9	647.60 ^{ABC}
H1	52.433 ^{ABC}	H2	238.03 ^{ABCD}	H8	0.57 ^B	H5	640.16 ^{ABC}
H6	52.033 ^{ABC}	H4	237.63 ^{ABCD}	H3	0.57 ^B	H2	627.79 ^{BC}
H4	51.633 ^{ABC}	H8	236.80 ^{ABCD}	H5	0.57 ^B	H6	626.76 ^{BC}
H5	50.600 ^{ABC}	H6	234.67 ^{ABCD}	H4	0.56 ^B	H4	621.93 ^{BC}
H2	50.433 ^{ABC}	H5	230.40 ^{ABCD}	H3	0.55 ^{BC}	H2	593.94 ^C
H3	49.833 ^{BC}	H2	224.07 ^{BCD}	H1	0.55 ^{BC}	H3	581.39 ^C
FLW		FSW		A		gs	
G		g		$\mu\text{mol}/\text{m}^2\text{s}$		$\text{mmol}/\text{m}^2\text{s}$	
Hybrids	DMRT	Hybrids	DMRT	Hybrids	DMRT	Hybrids	DMRT
H12	106.57 ^A	H12	328.13 ^A	H12	27.23 ^A	H12	0.36 ^A
H11	97.10 ^{AB}	H11	244.33 ^B	H11	26.90 ^A	H10	0.35 ^A
H8	89.27 ^{ABC}	H10	244.30 ^B	H8	26.60 ^A	H11	0.32 ^{AB}
H7	88.90 ^{ABC}	H8	243.17 ^B	H10	25.70 ^{AB}	H8	0.30 ^{ABC}
H10	83.73 ^{ABC}	H7	231.47 ^B	H7	25.10 ^{AB}	H6	0.30 ^{ABC}
H9	81.77 ^{ABC}	H9	215.70 ^B	H6	24.70 ^{ABC}	H7	0.26 ^{ABCD}
H6	80.90 ^{ABC}	H5	214.73 ^B	H9	23.90 ^{ABCD}	H9	0.23 ^{ABCD}
H5	77.90 ^{BC}	H2	209.43 ^{BC}	H5	19.73 ^{BCDE}	H5	0.22 ^{ABCD}
H2	73.70 ^{BCD}	H6	207.97 ^{BC}	H2	19.30 ^{BCDE}	H1	0.22 ^{ABCD}
H1	72.37 ^{BCD}	H1	207.77 ^{BC}	H1	18.65 ^{CDE}	H3	0.18 ^{BCD}
H4	71.37 ^{BCD}	H4	198.87 ^{BC}	H4	18.10 ^{DE}	H2	0.17 ^{BCD}
H3	70.70 ^{BCD}	H3	197.70 ^{BC}	H4	17.47 ^E	H4	0.16 ^{BCD}
E		LT		SSC/Ci		nlp	
mm/s		$^{\circ}\text{C}$		vpm			
Hybrids	DMRT	Hybrids	DMRT	Hybrids	DMRT	Hybrids	DMRT
H6	13.90 ^A	H9	54.63 ^A	H12	266.33 ^A	H12	12.66 ^A
H9	12.13 ^{AB}	H1	51.86 ^{AB}	H11	255.33 ^{AB}	H11	12.01 ^{AB}
H7	11.93 ^{AB}	H5	50.36 ^{ABC}	H1	249.67 ^{AB}	H9	12.01 ^{AB}
H8	11.76 ^{ABC}	H10	50.26 ^{ABC}	H7	248.67 ^{AB}	H10	12.01 ^{AB}
H10	11.73 ^{ABC}	H7	49.93 ^{ABCD}	H8	223.33 ^{ABC}	H5	11.66 ^{ABC}
H5	11.46 ^{ABCD}	H8	49.76 ^{ABCDE}	H9	216.00 ^{ABC}	H8	11.66 ^{ABC}
H2	11.40 ^{ABCD}	H4	49.10 ^{ABCDE}	H6	213.00 ^{ABC}	H6	11.66 ^{ABC}
H4	10.95 ^{BCDE}	H6	48.20 ^{ABCDE}	H10	210.67 ^{ABC}	H4	11.33 ^{ABCD}
H11	10.76 ^{BCDE}	H2	47.40 ^{BCDE}	H2	204.33 ^{BC}	H7	11.33 ^{ABCD}
H12	10.01 ^{BCDE}	H3	45.96 ^{BCDE}	H3	204.00 ^{BC}	H2	11.33 ^{ABCD}
H3	9.27 ^{BCDE}	H11	45.76 ^{BCDE}	H5	201.00 ^{BC}	H1	11.33 ^{ABCD}
H1	8.98 ^{CDE}	H12	45.63 ^{BCDE}	H4	197.33 ^{BC}	H3	11.01 ^{BCD}
LW		LL		FLSWR		G.Y	

Cm		Cm				g	
Hybrids	DMRT	Hybrids	DMRT	Hybrids	DMRT	Hybrids	DMRT
H12	8.96A	H12	82.53 ^A	H12	4.71 ^A	H12	1768.7 ^A
H11	8.93 A	H11	80.10 ^{AB}	H11	3.43 ^B	H11	1581.7 ^{AB}
H10	8.90A	H10	78.00 ^B	H10	3.58 ^B	H10	1380.0 ^{BC}
H6	8.63AB	H6	78.80 ^B	H8	3.43 ^B	H7	1266.0 ^{BC}
H8	8.63AB	H8	77.13 ^{BC}	H7	3.24 ^{BC}	H6	1066.0 ^{BCD}
H9	8.56AB	H9	77.47 ^{BC}	H9	3.14 ^{BC}	H9	991.0 ^{BCD}
H4	8.50ABC	H4	76.90 ^{BCD}	H5	2.89 ^{CD}	H5	958.7 ^{BCD}
H1	8.46ABCD	H1	75.53 ^{BCDE}	H2	2.79 ^{CD}	H8	874.0 ^{BCD}
H7	8.46ABCD	H7	75.20 ^{BCDE}	H6	2.78 ^{CD}	H2	840.0 ^{BCD}
H3	8.43ABCD	H3	74.20 ^{BCDE}	H1	2.77 ^{CD}	H4	768.7 ^{BCD}
H4	7.93BCD	H4	74.43 ^{BCDE}	H4	2.43 ^{CDE}	H3	767.0 ^{BCD}
H2	7.83BCD	H2	72.90 ^{CDEF}	H3	2.36 ^{CDE}	H1	748.3 ^{BCD}

Values in the same column with the same letter are not significantly different (*P < 0.01)

Suppl. Table S4. Eigen vectors (loadings) of first three principal components of yield and yield attributing traits [see section materials and methods for traits description].

Traits	PCA1	PCA2	PCA3
Ch.c	0.951	-0.118	0.005
nlp	0.957	-0.211	0.032
PH	0.928	0.082	-0.168
SD	0.832	0.354	0.170
FSW	0.653	0.422	0.603
FLW	0.975	-0.078	0.049
FLSWR	-0.809	0.341	0.392
LL	0.490	-0.729	0.403
LW	0.922	0.164	-0.097
LA	0.935	-0.117	0.056
E	-0.938	0.096	0.210
LT	0.251	0.865	-0.353
A	-0.912	-0.016	0.038
gs	-0.920	0.150	0.028
Ci	0.747	-0.152	-0.418
GY	0.851	0.259	0.426

Suppl. Table S5. Principal factor matrix after rotated factor loadings for yield and yield attributing traits [see section materials and methods for traits description].

Variables	Factors			Final Estimates (h^2)	Communality
	Factor 1	Factor 2	Factor 3		
Ch.c	-0.749	-0.595	-0.052	0.918	
nlp	0.818	0.480	-0.250	0.962	
PH	0.824	0.454	0.104	0.895	
SD	0.502	0.751	0.175	0.847	
FSW	0.113	0.977	0.025	0.969	
FLW	0.790	0.560	-0.146	0.959	
FLSWR	-0.950	-0.046	0.142	0.925	
LL	0.373	0.241	-0.858	0.934	
LW	0.762	0.536	0.140	0.887	
LA	0.764	0.525	-0.180	0.891	
E	-0.899	-0.353	0.029	0.934	
LT	0.171	0.281	0.910	0.935	
A	0.759	-0.506	0.017	0.833	
gs	0.803	-0.445	0.166	0.870	
Ci	0.866	0.075	0.039	0.756	
Factor variance ratio %	49.85	29.47	11.22	90.55	