

Genetic Diversity and Inter-trait Relationships among Maize Inbreds Containing Genes from *Zea diploperennis* and Hybrid Performance under Contrasting Environments.

Ijeoma C. Akaogu^{1,2,3}, Baffour Badu-Apraku^{1*}, Vernon Gracen³, Pangirayi Tongoona³, Melaku Gedil¹, Nnanna Unachukwu¹, Samuel K. Offei³, Daniel Dzidzienyo³, Sarah Hearne⁴, Ana Luisa Garcia-Oliveira⁵.

¹ Department of Agricultural Biotechnology, National Biotechnology Development Agency, Abuja and Nigeria; ijeangel2013@gmail.com (I.C.A)

² International Institute of Tropical Agriculture (IITA), c/o Lambourn (UK) Limited, Carolyn House, 26 Dingwall Road, Croydon, CR9 3EE, UK; m.gedil@cgiar.org (M.G.); n.unachukwu@cgiar.org (U.N)

³ West Africa Center for Crop Improvement, University of Ghana, Legon-Accra, Ghana; vg45@cornell.edu (V.G.); ptongoona@wacci.ug.edu.gh (P.T.); soffei@wacci.ug.edu.gh (S.K.O.); ddzidzienyo@wacci.ug.edu.gh (D.D.)

⁴ International Centre for Maize and Wheat Improvement, Texcoco, Mexico. s.hearne@cgiar.org (S.H)

⁵ International Maize and Wheat Improvement Center (CIMMYT), ICRAF House, UN Avenue, PO Box 1041-00621, Nairobi, Kenya; A.oliveira@cgiar.org (A.L.G-O).

*Corresponding author: Baffour Badu-Apraku; E-mail: b.badu-apraku@cgiar.org;
Telephone number: +234 810 848 2590.

Table S1: Pedigree of the 36 white early maturing maize Inbred lines used in the diversity study

Inbreds	Pedigree	Reaction to
		<i>Striga hermonthica</i> infestation
TZdEI 71	TZEE-W POP STR 104 S6 98/208-2/2-2/2-1/2-1/2	Susceptible
TZdEI 124	TZEE-W POP STR 104 S6 83/208-1/1-2/2-3/4-1/3	Resistant
TZdEI 202	TZE-W POP STR 108 S6 195/198-1/2-1/2-2/2-2/4	Susceptible
TZdEI 315	TZEE-W POP STR 107 S6 53/254-2/2-3/3-1/3-2/3	Susceptible
TZdEI 399	TZE-W POP STR 107 S6 118/254-2/2-1/1-2/2-1/3	Susceptible
TZdEI 260	TZEE-W POP STR 108 S6 93/198-1/1-3/3-1/2-1/5	Tolerant
TZdEI 479	TZEE-W POP STR 105 S5 126/253-1/2-1/2-2/3-1/4	Tolerant
TZdEI 82	TZE-W POP STR 104 S6 98/208-2/2-2/2-1/2-2/3	Susceptible
TZdEI 485	TZEE-W POP STR 105 S5 197/253-2/2-1/2-1/2-1/3	Susceptible
TZdEI 352	TZE-W POP STR 107 S6 24/254-1/2-1/1-1/1-2/2	Resistant
TZdEI 441	TZE-W POP STR 107 S6 232/254-1/1-1/4-2/3-1/2	Tolerant
TZdEI 84	TZEE-W POP STR 104 S6 98/208-2/2-1/2-1/3-3/5	Susceptible
TZdEI 280	TZE-W POP STR 108 S6 65/198-1/1-2/2-1/2-4/5	Susceptible
TZdEI 357	TZE-W POP STR 107 S6 37/254-2/2-2/2-1/3-2/2	Resistant
TZdEI 492	TZE-W POP STR 105 S6 2/253-1/1-2/2-1/2-1/2	Susceptible
TZdEI 98	TZE-W POP STR 104 S6 83/208-1/1-2/2-2/4-5/5	Tolerant
TZdEI 157	TZE-W POP STR 104 S6 22/160-1/3	Tolerant
TZdEI 173	TZE-W POP STR 104 S6 41/160-1/2	Susceptible
TZdEI 283	TZE-W POP STR 108 S6 34/198-1/2-1/3-1/2-2/3	Resistant
TZdEI 105	TZE-W POP STR 104 S6 83/208-1/1-2/2-1/4-1/4	Tolerant
TZdEI 120	TZEE-W POP STR 104 S6 18/208-2/2-3/4-1/2-2/2	Susceptible
TZdEI 131	TZE-W POP STR 104 S6 83/208-1/1-2/2-3/4-3/4	Tolerant
TZdEI 264	TZEE-W POP STR 108 S6 54/198-1/1-1/4-3/3-4/9	Susceptible
TZdEI 378	TZE-W POP STR 107 S6 53/254-2/2-3/3-3/3-1/2	Susceptible
TZdEI 268	TZEE-W POP STR 108 S6 1/198-1/1-2/2-2/2-1/4	Tolerant
TZdEI 314	TZEE-W POP STR 107 S6 53/254-2/2-3/3-2/3-1/3	Susceptible
TZdEI 396	TZE-W POP STR 107 S6 85/254-1/1-2/3-3/3-1/1	Susceptible
TZEI 7	WEC STR S7 Inbred 12	Tolerant
TZEI 18	TZE-W Pop STR Co S6 Inbred 136-3-3	Susceptible
TZEI 31	TZE-W Pop x LD S6 Inbred 4	Susceptible
TZdEI 425	TZE-W POP STR 107 S5 223/254-1/2-2/2-2/3-1/2	Susceptible
TZdEI 551	TZE-W POP STR 105 S5 112/253-1/1-3/4-2/4-1/3	Susceptible
Check 1-TZEI 2	TZE-W Pop X 1368 STR S7 Inbred 2	Tolerant
Check 2- TZEI 3B	TZE-W Pop X 1368 STR S7 Inbred 4	Tolerant
Check 3- TZEI 26	WEC STR S8 Inbred 4	Susceptible

Table S2. Statistics summary for the 4,440 SNP DArT markers.

	Minimum	Maximum	Average
Major allele frequency	0.50	0.94	0.72
Minor allele frequency	0.06	0.50	0.28
Gene Diversity	0.11	0.43	0.27
Polymorphic Information Content (PIC)	0.00	0.38	0.10
Heterozygosity	0.00	0.19	0.10