Heterotic Response of Subtropical and Tropical Maize Yellow Inbreds with Temperate Testers Across Environments. (C01-transue170525-Poster)

Authors:

- . D.K.Transue* Texas A and M University, College Station,
- F.J.Betran Texas A and M University, College Station, TX
- S.Bhatnagar Texas A and M University, College Station, TX

Abstract:

Expanding and characterizing genetic diversity in maize is fundamental for improving food security. Our objective was to establish the relationship of exotic inbreds with two testers representative of the two major heterotic groups, Stiff Stalk (SS) and Non-Stiff Stalk (NSS), existing in temperate maize. Fifteen subtropical/tropical inbreds (12 CIMMYT Maize Lines, NC258, NC300 and Tx601y) were crossed with LH236 (SS) and LH210 (NSS). The 30 resulting testcrosses and 5 commercial checks were evaluated in replicated trails in 6 southern locations. Significant differences were observed among all test factors and their interactions with environments. LH236 consistently produced higher yielding hybrids. CML285 was the best inbred for grain yield, producing a superior hybrid with LH210 (9.0 t ha-1). CML338 x LH210, CML285 x LH236, CML294 x LH236 and CML338 x LH236 hybrids yielded above or similar to the checks (8.6, 8.6, 8.5 and 8.5 t ha-1, respectively). CML325 and NC300 combined better with LH210, while CML289, CML294 and Tx601y combined better with LH236. The results suggest potential within the tropical/subtropical germplasm for improving maize breeding within the southern US area.

Corresponding Author Information:

Javier Betran p Texas A and M University e-2474 TAMU College Station, TX 77843

phone: (979) 845 3469 e-mail: dennis_transue@neo.tamu.edu

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