Validation of CERES-Maize Simulation Model for Hybrid Performance Prediction Using Site-Specific Observations. (A03-wei120520-Poster)

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Abstract:

Crop simulation models constitute a potential tool to help understand GxE interactions and assist in hybrid advancement and commercialization. We tested the CERES-Maize simulation model to predict grain yield of 23 hybrids grown in 1997 and 1998 at 18 locations representing 23 typical corn-belt soils. Weather data were collected at each location or within a 50 km radius. Soils samples were taken to determine layer depths, texture, bulk density and nutrient concentrations. We also measured dry matter for different plant parts and recorded developmental stages. The model predicted average hybrid yield well (R2 = 0.80), but failed to discriminate individual hybrid performance. Accurate prediction of specific hybrid performance necessitates the development of more detailed hybrid descriptors than those used in our model.

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