Performance of RZWQM and CERES Wheat Models for Simulating N Management Effects on Winter Wheat. (A03-ma165434-Oral)

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Abstract:

CERES-wheat and RZWQM were calibrated and validated for simulating N fertilizer requirement for rainfed winter wheat on a Platner loam soil at Akron, Colorado with data from 1987-88, 1988-89 and 1989-90. Wheat was grown with N at 0,28,56,84, and 112 kg/ha. Data from 1987-1988 at 0 kg/ha N was utilized for calibration of models and validated against data during the same crop season at various Nitrogen levels and also against data collected during the next 2 years. Both models were calibrated at a soil moisture NOF (RMSE/Omean) value of 0.097, but during the validation period RZWQM performed better than CERES-wheat. CERES-wheat greatly under-predicted yield during the driest crop season (1988-89). In general, validation results show that the RZWQM model has good potential for wheat yield predictions under various N treatments under rainfed conditions in the semiarid climate of the Great Plains of the U. S. A.

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