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Improving Maize Irrigation and N leaching Management using CSM-CERES-Maize Model

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ABSTRACT CSM-CERES-Maize model is one of branches of Cropping System Model of DSSAT package that can be used for multidisciplinary purposes in corn field management. In this study, the CSM-CERES-Maize crop model was used to simulate corn yield resulted from implementing different water and nitrogen management strategies. The Field data was used to calibrate and evaluate the CSM-CERES-Maize model for Single Cross 704 cultivar. After calibrating and evaluating the model, it then was used with 20 years of historical weather data to simulate different irrigation and nitrogen fertilizer scenarios. These scenarios were simulated in seasonal analysis of DSSAT for maize. Among the several irrigation and nitrogen management scenarios that were studied, three of them which produced maximum weight of biomass and minimum N leaching took advantage of optimum management of applied water and N fertilizer.

Keywords: CSM-CERES-Maize model, Irrigation scenarios, Nitrogen management, Seasonal analysis