Validation of the CroPMan Model for Missouri Field Crops. (A03-harman154034-Poster)

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Abstract:

The CroPMan (CROp Production and Management) model was validated for Missouri crops by simulating 1991-2000 yields in each Extension district. Validation ensures that simulations of alternative management practices will produce realistic yields. Cropping practices, fertility levels, soil types and weather databases were developed. Two counties in each district with the largest acreages of major crops and a central weather station were identified. Dominant soils were selected from the Missouri STATSGO soils list. Each major crop in each county was simulated for 1991-2000. The 10-year average yield for the two counties was then compared with the reported average yield by USDA-NASS. Baseline practices were revised by increasing fertilizer for sorghum and wheat and in one region, a higher corn population was needed. In the model parameters, the soybean biomass-energy conversion was lowered. Statistical analyses indicated correlations of reported vs. simulated yields across districts were 0.82 for corn, 0.91 for soybeans, 0.50 for sorghum, and 0.41 for wheat. Maximum differences (+ and -) in reported versus simulated yields ranged from -8% for wheat to +12% for corn.

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