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Full Length Research Paper

Application and evaluation of the DSSAT-wheat in the Tiaret region of Algeria

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Abstract

Crop simulation models are essential tools to design management practices t mitigate such adverse conditions. They can be used to predict crop yiel expectancies under limited environmental resources and various managemen scenarios. However, the application of crop models requires an accurate knowledg of the genotype-related coefficients, which are commonly not available. This pape aimed to evaluate the DSSAT crop model in Algeria for wheat, including the determination of DSSAT-specific genetic coefficients of wheat. Experimental data from three seasons and of nine cultivars were used for model calibration and testing The results showed that the root mean squared error (RMSE) were 9.5 d and 1.8 d for anthesis and maturity respectively for model calibration; and was 4.4 d and 3.5 d for anthesis and maturity in testing of the model, respectively. The RMSE of fina

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grain yield was 0.7 t ha^{-1} for calibration and testing. This study showed that DSSA may be used to predict the growth and yields of wheat genotypes in Algeria. In consequence to compare several crop management strategies in a wheat cropping area.

Key words: Wheat, simulation, DSSAT, genotype.
