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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 to mitigate such adverse conditions. They can be used to predict crop yield expectancies under limited environmental resources and various management scenarios. However, the application of crop models requires an accurate knowledge of the genotype-related coefficients, which are commonly not available. This paper 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 ( for anthesis and maturity respectively for model calibration; and was 4.4 d and 3.5 ( for anthesis and maturity in testing of the model, respectively. The RMSE of fina

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grain yield was  $0.7 \text{ t ha}^{-1}$  for calibration and testing. This study showed that DSSAT 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.

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