

Simulation and Validation of Rice Potential Growth Process in Zhejiang Province of China by Utilizing WOFOST Model [PDF]

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摘要: A crop growth model of WOFOST was calibrated and validated through rice field experiments from 2001 to 2004 in Jinhua and Hangzhou, Zhejiang Province. For late rice variety Xiushui 11 and hybrid Xiyou 46, the model was calibrated to obtain parameter values using the experimental data of years 2001 and 2002, then the parameters were validated by the data obtained during 2003. For single hybrid rice Liangyoupeijiu, the data recorded in 2004 and 2003 were used for calibration and validation, respectively. The main focus of the study was as follows: the WOFOST model is good in simulating rice potential growth in Zhejiang and can be used to analyze the process of rice growth and yield potential. The potential yield obtained from the WOFOST model was about 8100 kg/ ha for late rice and 9300 kg/ ha for single rice. The current average yield in Jinhua is only about 78% (late rice) and 70% (single rice) of their potential yield. The results of the simulation also showed that the current practice of management at the middle and late growth stages of rice should be reexamined and improved to reach optimal rice growth.

关键词: crop growth model; rice; yield; crop growth process; simulation; calibration

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