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**خلاصه مقاله:**

Objective: Environmental and economic challenges resulting from the application of nitrogen fertilizers have increased Concerns about its productivity in the agricultural systems. Thus an experiment in order to investigate ability SSM-Wheat for simulation growth and yield of wheat (cultivar N-۸۷-۲۰) in response to fertilizer nitrogen in the direction decrease Pollution environmental and diseases was conducted. Methods: Simulation be done for ۲۰ years' time period from ۱۹۹۶ to ۲۰۱۶ with using daily weather data (minimum and maximum temperature, rainfall and radiation), experiment data and information of field soil. In order to test of model results be used from assessment indicators coefficient of determination (R), coefficient of variation (CV), root mean square error (RMSE). Results: On the basis of evaluation of results, model could grain yield, biological yield, leaf area index in pollination stage and harvest index forecasted well, as root mean square error (RMSE) between measured data and simulated data mentioned traits were ۹۵۸.۸۲, ۲۳۰۵.۶۲, ۱.۱۲, ۶.۵۸ respectively. Observed and simulated data day to  and day to physiological maturity were very similar too, and difference between observed and simulated data of phonological stages no significant was and RMSE day to pollination and day to physiological maturity were ۳.۷۲ and ۴.۸۹ respectively. SSM-Wheat model in elevation of mentioned traits for wheat cultivar N-۸۷-۲۰ was prospered well and acceptable. So SSM-Wheat model can be used in the direction recovery nitrogen nutrition management of plants, Nitrogen nutrition with the aim access to maximum yield and decrease consumption of luxury nitrogen fertilizer in wheat in order to reduce pollution of environmental and disease.

**کلمات کلیدی:**

Nitrogen, SSM-Wheat model, Wheat, Yield