

## عنوان مقاله:

Developing a dynamic yield and growth model for saffron under different irrigation regimes

## محل انتشار:

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## خلاصه مقاله:

Better irrigation management and more efficient management of crop production require modeling of plant growth and crop yield. More applicable models are usually simple and requires less and accessible inputs. The objective of this study was to develop a model for growth and yield prediction of saffron under various irrigation regimes. In this modeling soil water budget and other simple relationships for evapotranspiration partitioning, leaf area index determination and leaf dry mattertranspiration function, corm-transpiration function and saffron-corm function were used. The developed model was calibrated based on available data of basin irrigation experiment under different irrigation regimes and verified based on independent data under different climatic conditions. In calibration, the comparison between predicted and measured values of different crop parameters did not show any significant difference ( $P=0.05$ ) and model was able to estimate LAI (with  $NRMSE=0.16$ ), crop evapotranspiration ( $NRMSE=0.19$ ), surface evaporation ( $NRMSE=0.22$ ), leaf dry matter ( $NRMSE=0.33$ ) and corm yield ( $NRMSE=0.19$ ) and saffron yield ( $NRMSE=0.16$ ) properly. In validation, the statistical results of comparison between predicted and measured values of various crop parameters were different and model was able to estimate corm and saffron yield with acceptable accuracy. Furthermore, this model might be used only for saffron crop because the incorporated crop functions are developed for saffron.

## کلمات کلیدی:

Saffron modeling, Saffron yield, total dry matter, Evapotranspiration, Leaf area index, Corm yield

## لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/939235>

