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AquaCrop Version 7.0 – New developments

Content

AquaCrop simulates achievable and potential yield for rainfed and irrigated crops under various field management practices and climatic conditions and also of future scenarios. Previous versions until present have been limited to annual crops, such as fruit/cereals, leafy vegetables, and root and tuber crops. In the new version (V. 7.0), new modules have been introduced to simulate the growth and production of perennial herbaceous forage crops, such as alfalfa. Procedures have been developed and tested to describe (i) the (natural) self-thinning of the plant population over the years, (ii) the transfer of assimilates between the above ground parts and the root system within the season, (iii) the canopy development and crop production between cutting events, and (iv) the adjustment of the restart and end of the growing cycle to the thermal regime of the year. To keep a balance between simplicity, accuracy and robustness, the processes have been described by a relatively small number of parameters which are readily available or easily obtained and are simple to calibrate. Additionally, in AquaCrop V. 7.0, the default parameters for the different crops have been harmonized, new crops have been added to the data base, and crop responses to atmospheric elevated CO2 concentrations, and early senescence have been refined. The presentation will illustrate the novel features of AquaCrop V. 7.0 and will discuss the challenges for model improvement.

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