16th International Conference on

# Agriculture & Horticulture

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August 16-17, 2021

**WEBINAR** 

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### Simulation of irrigation strategies in barley and corn crops on different soils in Spain

#### González García

Universidad Internacional de La Rioja, Spain

Soil is a basic medium that provides the nutrients and water supply necessary to facilitate the development of crops, acting as an essential habitat for them. The soil provides the necessary ecosystem in crops in an interaction of water, nutrients, microorganisms, and plants. In addition, it influences the quality of food and helps to maintain the environment using water resources that are respectful of climate change. Therefore, it is essential to establish environmentally friendly crops and adapt water management to sustainability with the energy balances of irrigation and the water footprint as ways to obtain equitable water governance.

Modeling in the prediction of the growth and behavior of crops offers the possibility of adapting and planning the most suitable crops based on the characteristics of the available soil and the weather of the area where they will be implanted.

The AquaCrop prediction model developed by FAO allows to simulate the behavior and growth of crops based on parameters such as soil type, climatic conditions, ..., ensuring a sustainable use of the necessary irrigation water as a complement to the water stored in soil.

The objective of this study was to evaluate the sensitivity of the growth models by performing growth simulations in barley and corn crops on different soils in Spain on a time scale through efficient use of water.

The results suggested that proper management in the use of irrigation water significantly improved the yield of the studied crops, concluding that modeling is a necessary support tool in water and food security policies and security against climate change.



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### Biography

Education: Diploma in Technical Agricultural Engineer, (UVA, 1999), Spain; Diploma in Agricultural Engineer, (UVA, 2004), Spain; Environmental science degree at the University, (UNED, 2011), Spain; Phd Computer Technology and Environmental engineering, (UCAM, 2018), Spain.

Positions: Professor Environmental engineering at the Higher School of Engineering and Technology, International University of La Rioja (UNIR) since 2018. Associate professor; International University Isabel I (2015-2018). Researcher in the group of Organic Chemistry Research (UNIR).

Scientific focus areas: Risk assessment, mathematical modeling and simulation of environmental systems. Uptake of chemicals into plants. Environmental biotechnology. WWTP modeling, emerging pollutants and water pollution. Toxicology.

International relations: Member of the Blue Circle Society and NEREUS COST Action ES1403.

Teaching and supervisor functions: Main supervisor of >> 95 MSc thesis supervisions. Agricultural soil science.

Publications and Conferences: Author of more than 10 scientific articles published in scientific journals with a high impact factor, as well as communications to conferences.