University of Agronomic Sciences
and Veterinary Medicine of Bucharest

Faculty of Agriculture

International Conference

"Agriculture for Life, Life for Agriculture"

BOOK OF ABSTRACTS

Section 1

AGRONOMY

2023
Bucharest

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MODELING DRIP-IRRIGATED RICE YIELD USING NORMALIZED DIFFERENCE VEGETATION INDEX: A PRELIMINARY STUDY

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Abstract

Rice is one of the major food crops with a growing demand on the global market. The need for water-saving and environmentally friendly technologies presses current agricultural science to look for alternative ways of rice irrigation. The most prospective one is drip irrigation. Yield prediction is also of great importance for sustainable agriculture. The goal of the study was to create a pilot model for drip-irrigated rice yield prediction in the conditions of the South of Ukraine using spatial normalized difference vegetation index. The index values were taken from OneSoil AI platform for the drip-irrigated rice cultivated in 2016-2017 within the framework of cultivation technology studies. The highest index value was recorded in the stage of "tillering-heading" and applied for the regression and neural network-based models. It was established that the performance of various regression models was quite similar in fitting quality and accuracy, while neural network-based one provided significantly higher precision. It is reasonable to simulate drip-irrigated rice yield with a good accuracy (MAPE<15%) using simple linear regression model. Further improvement of predictions is expected through the increase of the sample size.

Key words*: artificial neural network, regression, remote sensing, statistics, yielding scale.*

REASONS TO DEVELOP A MASTER PROGRAM OF "SUSTAINABLE FOOD PRODUCTION SYSTEMS" IN WESTERN BALKANS

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Abstract

STEPS project aims at building the capacities of higher education institutions in Western Balkans countries (Albania, Bosnia and Hertegovina, Kosovo) in collaboration with EU countries (Czech Republic, Greece, Romania), in order to help them offer curricula aligned with the needs of the labour market and society. The main objective of the project was the implementation of a modern MSc programme on "Sustainable food production systems", compliant with the Bologna convention. Food culture and sociology, agriculture and rural development, food engineering, quality and safety, environmental footprints, economics, management and governance were combined in a flexible and modular educational programme, designed and developed in the light of the European initiative for the transition to circular economy. The new MSc programme in Western Balkans offer an holistic approach of food production systems and put in the core the sustainability dimension.

Key words*: circular economy, master program, sustainable food production, Western Balkans.*

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