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Optimal Cropping Pattern in an Irrigation Project: A Hybrid Model of Artificial Neural Network and Modified Simplex Algorithm

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Abstract : Software has been developed for optimal cropping pattern in an irrigation project considering land constraint, water availability constraint and pick up flow constraint using modified Simplex Algorithm. Artificial Neural Network Models (ANN) have been developed to predict rainfall. AR (1) model used to generate 1000 years rainfall data to train the ANN. Simulation has been done with expected rainfall data. Eight number crops and three types of soil class have been considered for optimization model. Area under each crop and each soil class have been quantified using Modified Simplex Algorithm to get optimum net return. Efficacy of the software has been tested using data of large irrigation project in India.

Keywords : artificial neural network, large irrigation project, modified simplex algorithm, optimal cropping pattern
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