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A Decision Support System for Designing Micro Irrigation Systems

Micro irrigation systems are designed to provide precise application of water in agriculture. A Decision Support System (DSS) namely, DOMIS was developed for designing Drip Irrigation, Sprinkler Irrigation and Micro sprinkler irrigation systems for different agro-climatic, soil and cropping systems .As a part of the decision support mechanism, the DSS provides expert opinion and necessary data on crops, soil, water and climate as default options. It is also equipped with a provision of change if the user wishes to replce it with more appropriate and relevant data. DSS-DOMIS suggests most optimal lay out plans for main, sub-main and lateral pipes. It determines the appropriate sizes of different components including main, sub main and lateral pipes, pumping system, filters and fertilizer application systems. In the DSS standard procedures are adopted for estimation of water requirements of plants based on the agro climatic data, possible shifts per day and available total time for irrigation.

The developed DSS has been seamlessly integrated into a user-friendly interface implemented in the open source programming languages i.e PHP, MySQL. It runs in Apache server uses rich database with information on crops, soil climatic data, micro irrigation equipment's as well as, source and quality of water. The developed DSS was tested by 22 Precision Farming Development Centres in the country for their local soil-crop-water-climate conditions. The decision support system will be useful for farmers, researchers and policy makers.

Biography

T B S Rajput has over forty years of experience of research and post graduate teaching in the field of Soil and Water Conservation Engineering. He is a former Project Director of Water Technology Centre and a scientist of national repute. He has published ten books and more than 200 research articles. He has developed seven computer software on different aspects of agricultural water management. Besides research, he has supervised more than twenty post graduate researches. He was adjudged as the Best teacher and has also received many honours and awards including the highest research award in India namely, Rafi Ahmed Kidwai Award.