Balaban Desalination Publications

مؤتمر الخليج الخامس عشر للمياه
The 15th Gulf Water Conference

(2025) 263–271
doi: 10.5004/700090

WSTA 15th Gulf Water Conference
Water in the GCC, The Role of Technology in Effective Water Management
28–30 April 2024, Doha, Qatar

Towards sustainable water management: Leveraging soil moisture sensors for smart irrigation in the GCC

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ABSTRACT

Efficient water management in agriculture is paramount in the arid and semi-arid regions of the Gulf Cooperation Council (GCC) countries. Soil moisture sensors-based irrigation scheduling has emerged as a crucial tool for optimizing irrigation practices, conserving water resources, and improving crop yields. This paper delves into the application of soil moisture sensors for smart irrigation scheduling in the GCC, discussing their types, benefits, challenges, and relevant research and development (R&D) efforts demonstrating their successful implementation in this region. The authors identify several key areas of concern and provide a roadmap for future research endeavors in maximizing the potential of soil moisture sensors for efficient water management and smart irrigation in the GCC region.

Keywords: Soil moisture sensors, soil moisture monitoring, irrigation scheduling, smart irrigation, precision agriculture, water management, GCC

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ISBN 0-86689-078-5