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“PROMOTION OF SMART IRRIGATION TO CLIMATE CHANGE ADAPTATION”

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Abstract

Climate change has had a negative impact on food security and has contributed to desertification and land degradation. Considering the projected population growth, estimated at 10 billion people in 2050, and the reduction of soil and water available for agriculture, the great challenge of the future will be to meet the global demand for food. To improve the management of water resources for irrigation, soil quality, and the economic yield of agriculture, this project will propose the possible integration of water-retaining agents (synthetic and/or marketed) in the vegetable crops to alleviate the drought socioeconomic problems of the countries. These super water-absorbent polymers have several climatic and environmental benefits. They save at least 50% water and can act as fertilizers and soil decontamination. Interestingly, these superabsorbent networks can absorb and retain aqueous solutions up to several hundred times their own weight, while even retaining it under pressure. SAPs have a wide range of applications because of their high water-absorbing capacity, biodegradability, and low cost. The application of SAPs moderated the adverse effect of

irrigation deficit regions and drought stress conditions on plant growth. The combination of fertilizer and superabsorbent helps improve plant nutrition, depreciate water evaporation losses, and reduce frequent irrigation. Advanced research on improving the performance of these polymers as well as the production of new nature-friendly SAP molecules will be carried out during this project. In addition, microcosms will be created within the laboratories involved in the project to better identify the environmental and socioeconomic contributions of the polymers in question and the possible intoxication of cultures associated with them.

Keywords:

Reuse, Smart irrigation, Superabsorbent, Treated wastewater

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Biography



Professor AZIZ Faissal is currently an Associate Professor at Cadi Ayyad University, Morocco. Prof. AZIZ is a Young researcher at MENA NWC (Middle East and North Africa Network of Water Centers of Excellence) in Nanotechnology for the water treatment field. He supervises ten thesis subjects on wastewater treatment and reuses; he has published over 70 papers and co-edited one book. In addition, he coordinates many research projects on wastewater treatment and biomaterial engineering in collaboration with national and international partners.
