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Impact Assessment of Zeolite, Manure and Rubber Powder on Plant Growth

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Abstract

Iran has a dry and semi-dry climate resulting water scarcity in most of its territory. More than 90% of water usage in Iran is assigned to agriculture. To increase the irrigation efficiency and sustainability, advanced methods and technologies should be applied for the field irrigation systems. Using super water absorbents is one of the best solutions to save the water. In this research, the impact of using different types of superabsorbentincluding natural cliniptilolite zeolite, rubber powder and solid manure on plant growth were studied. For this purpose, various mixture ratios of thesuperabsorbentswere applied in 10 treatments with 3 replications at 48 tests, total. Results showed adding superabsorbents to the soil would increase the stem length of the plant, the plants biomass and dry mass, and enhance the soil moisture saving. Using superabsorbents can be an efficient solution for sustainable agriculture.

Keywords: Zeolite, Rubber powder, Solid manure, soil moistuer absorbent, biomass, plant dry mass.

