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Engineering Criteria Affecting Exploitation of Subsurface Drip in Wheat Yields

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Rationalizing and maximizing irrigation water use efficiency is one of the most important strategies under drought ecosystems. Therefore, the aim of this study was to evaluate the possibility of improving wheat crop yields and quality under these conditions by using subsurface drip irrigation system in sandy soils. Results revealed that about 15% of wheat crop yield reduction had been observed under the alternative irrigation system (subsurface drip) compared with the common irrigation systems in the tested areas (hand moveable sprinkler irrigation system). On the other hand, data revealed that attributed engineering and chemical quality parameters had been improved by applying the alternative irrigation system. With respect to engineering criteria of subsurface drip irrigation design for irrigating intensive field crops, results revealed that 60cm lateral spacing with 20 cm lateral depth is the most effective engineering criteria for improving wheat crop yields and quality under sandy soil conditions. In conclusion, results indicate that the alternative irrigation system (subsurface drip irrigation) has an effective way for irrigating intensive field crops, but more studies have to be conducted under similar field conditions. Keywords: Engineering criteria. Irrigation systems. Subsurface drip irrigation. Sprinkler irrigation. Water saving.

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