

**O 34. IMPACT OF TWO IRRIGATION SYSTEMS; SPRINKLING AND DRIP ON  
CULTIVATED SOIL MOISTURE AND IN OUARGLA REGION- ALGERIA**

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**ABSTRACT:** The study highlights the evolution of cultivated soil moisture under two different irrigation systems: sprinkling and drip in Ouargla region. The approach adopted consists of the area prospection and then choose of the study site. This study focused mainly on an assessment of irrigation water quality, characterization of irrigation parameters and soil characterization in situ and in laboratory, and survey of some stages and the yield of Quinoa, for each irrigation system. Soil samples were collected before and after each irrigation for each system and at different depth levels (10, 15, 20, 25, 30 and 35 cm), with a control sample of bare soil (non-irrigated and uncultivated). The water and soil study showed that irrigation water is highly saline with basic pH, and had a sulphate sodium and chloride chemical facies. The soil is slightly calcareous, slightly gypsum, with a low organic matter content, slightly alkaline, not very salty, and has a silty sandy texture. Soil moisture increases with depth under spray system and decreases depth under drip. The complete random block tracking of some stage of Quinoa showed that there is no significant difference between the two systems. The statistical test indicates that drip system presents the best system compared to the spray.

*Keywords: Sprinkling, drip, soil moisture, quinoa, Ouargla*