The title (العنوان):

Influence of mulches on soil moisture and water infiltration in the tomato crop

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Abstract : Soil moisture is a key parameter of soil monitoring for observation of vegetation growth, predicting crop production, and improving water resource management. In this study, the objective is to compare the evolution of soil moisture in different mulches to determine the best mulch and its characteristics of infiltration in the soil. The experiment was conducted during the summer season in July-September 2022 on four different mulches (wood chips, sawdust, straw, mixture), and control at the experimental plot of Blida. The results showed that silt is the main matrix of the soil. The analysis of infiltration data identified modified Kostiakov as the best model of the study site, whose period of plant growth represents the phase during which we have a better infiltration under the mixture. The application of the mulch changes the moisture mainly at 15 cm and the conductivity at 10 cm. In addition, the mixture is the best mulch to conserve moisture in the soil while reducing the frequency of irrigation. The correlation between soil moisture and conductivity was overall very good. This was due to the effect of mulch, soil texture, plant root development, and capillary rise.

Key words : Tomatoes, Mulching, Soil moisture, Infiltration, Soil electrical conductivity

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