

## عنوان مقاله:

Influence of compost and canal clay scouring on sandy soil properties and wheat productivity under Irrigation water regime

## محل انتشار:

مجله بین المللی بازیافت مواد آلی در کشاورزی، دوره 10، شماره 4 (سال: 1400)

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## خلاصه مقاله:

**Purpose** Improving physio-chemical properties under irrigation regime by using natural conditioners to achieve the highest possible crop yield and water productivity. **Method** A field experiment was conducted in a split-plot design with three replicates by addition of canal clay scouring (CS) and compost (CO) during two consecutive growing winter seasons of ۲۰۱۸/۱۹ and ۲۰۱۹/۲۰. The treatments were: control (۱۰۰% and ۷۵% of water requirements), ۲۰ and ۴۰ (ton. ha<sup>-۱</sup>) of CO and ۴۰ and ۸۰ (ton. ha<sup>-۱</sup>) of CS as alone or mixed with each other under drip irrigation. **Results** The results showed that soil organic matter and cation exchange capacity increased by increasing the application rates of CO and CS. The lowest values of bulk and hydraulic conductivity were observed at ۸۰ ton. ha<sup>-۱</sup> CS + ۴۰ ton. ha<sup>-۱</sup> CO. Also, field capacity, wilting point and available water were ۲۰.۹۴، ۵.۹۷ and ۵.۰۷%، respectively. The lowest values of ETa were observed at ۸۰ ton. ha<sup>-۱</sup> CS + ۴۰ ton. ha<sup>-۱</sup> CO under ۷۵% water irrigation requirement in all growth stages. The highest rates of the studied materials as a mixture gave a significant increase in nitrogen, phosphorus and potassium contents of grains and straw of wheat crop. The highest yield of straw and grain were ۹۵۲۳.۸۱ and ۶۴۲۸.۵۷ kg ha<sup>-۱</sup>، respectively. Also, it could be observed that the highest percentage of CWP and IWP were ۲۱.۰۵ and ۱۴.۵۳%، respectively، under ۷۵% irrigation water requirement. **Conclusion** Application of clay and compost can improve soil physio-chemical properties، water productivity and crop yield under irrigation water regime.

## کلمات کلیدی:

water productivity، Sandy soil، Clay scouring، compost، Wheat yield

## لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/1391947>

