

## عنوان مقاله:

Effect of biochar, biocompost and manure on the growth and productivity of alfalfa (*Medicago sativa* L.): Field and pots study

## محل انتشار:

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## خلاصه مقاله:

Purpose Biochar is a carbon-rich coproduct resulting from pyrolyzing biomass. Positive effects on productivity, soil stability, carbon sequestration, soil fertility have been validated by several studies. The aim of the present study is to compare the effect of different rates of biochar "BC TD" (produced from the pyrolysis of seeds of date 'D' and "Tomato residue" 'T') on the productivity of alfalfa in pots and in the field in comparison with manure, nitrogen fertilizer and biocompost (CP). Method In order to carry out this comparison, alfalfa was cultivated in the same bases and under the same climatic conditions, and the various physiological, growth and productivity parameters were continuously monitored throughout the period of the experiment. Results The manure doses resulted in better productivity throughout the test period compared to all the treatments tested. For biochar, alfalfa germination results were widely different between field and pots with low germination rate in high doses of biochar which subsequently affected productivity. Conclusion Although the application of high doses of biochar and biocompost decreases productivity and limits all growth parameters but positive results on productivity were noted with the 3% BC treatment in the field, which requires monitoring this dose for prolonged periods in order to properly determine its long-term effects on the various physiological parameters, growth and productivity of alfalfa.

## کلمات کلیدی:

Biochar, Bio-compost, manure, alfalfa

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