

عنوان مقاله:

Biochar from argan shells: production and characterization

محل انتشار:

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خلاصه مقاله:

Purpose The agricultural practices in south western Morocco reserve a majority of the water resources to be used for irrigation. The extent of irrigated agriculture combined with high evaporative rates, lead to the depletion of water resources and degradation of soil quality. To remedy to this problem, biochar, a pyrolysed biomass, is highly considered to improve retaining water and nutrients in soils. For this biochar research, argan shells obtained after extraction of argan oil were used as the biomass source to produce biochar. According to the best of our knowledge, no research to date has been carried out on the production and characterization of biochar produced from argan shell wastes. **Methods** To produce biochar, we have used a pyrolytic stove fabricated in Morocco from locally available materials. The biochar sample collected was then crushed, sieved (2 mm) and its physical, and chemical characteristics were analysed and compared with those of other media (soil and peat). **Results** The physical and chemical properties of the argan shells biochar revealed a highly alkaline pH, high electrical conductivity, high content of K, Na, Mg and NaNO₃, low content of Ca, KH₂PO₄ and low content of heavy metals compared to sandy soil and peat. In addition, by increasing biochar application, the water holding capacities of biochar-sand mixtures also increased. **Conclusions** The use of argan shells biochar to enrich the soil will be expected to improve both nutrient and water retention especially that South Western Morocco is subject to frequent drought.

کلمات کلیدی:

Biochar Argan shells Biochar analysis Nutrients Water retention

لینک ثابت مقاله در پایگاه سیویلیکا:

