

Effect of organic carbon retunding on some physical and chemical properties of the soil of an agrosystem in the northern Sahara of Algeria: case of the Oued Righ region.

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Summary

95% of Algeria is in the arid zone, with 80% of it being hyper arid. The management and development of these vast areas are crucial to the nation's economic future. In general, the organic matter content of soils in arid areas is low. Soil organic matter is a cost-effective and informative indicator of physical fertility. The soils of the northern Algerian Sahara are poor in organic matter and in mineral element essential to plants. The organic matter content of this soils is often inferior than 0.1%. The poverty of the soils in organic matter has pipe to the use of different agricultural practices such as chemical fertilization at a frantic pace, to meet the needs of crops and increase production. This practice negatively influences the soil, water and the environment and contributes to global warming.

The objective of this work is the search for a new strategy for the reduction of the use of agricultural inputs, especially chemical and their substitution by the inversion of various wastes of the palm grove of the North Sahara of Algeria.

The experimental work begins with the preparation of a mixture of waste of date palm and green phragmites (*Phragmites communis* Trin.). After air drying, they are mechanically crushed and we immersed the date palm waste in water for one week. After preparing the mixture, it is retunding in the soil for one year.

Laboratory analyses will determine the physico-chemical characterizations of the mixture and the soil before and after retunding (pH, electrical conductivity, cation exchange capacity and Water retention capacity).

Preliminary results of the soil before and after return for two months suggest a diminution in pH and augmentations in electrical conductivity, Water retention capacity and cation exchange capacity of the soil.

the results obtained, we can conclude the characterizations physico-chemical properties of the soil in arid regions can be improved by the storage of crop waste.

Keywords: carbon, waste, northern Sahara, return, agrosystems.