

Organic Farming for Sustainable Production of Some Promising Halophytic Species in Saline Environment

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Abstract : Applying organic farming systems in biosaline agriculture is unconventional approach for sustainable use of marginal soil and desert land for planting non-traditional halophytic crops such as *Leptochloa fusca*, *Kochia indica*, *Sporobolus virginicus* and *Spartina patens*. These plants are highly salt tolerant C4 halophytic forage plants grown well in coastal salt marsh. These halophytic plant will take important place in the farming system, especially in the coastal areas and salt-affected land. We can call it environmentally smart crops because they ensure food security, contribute to energy security, guarantee environmental sustainability, and mitigate the negative impacts of climate change. Organic Agriculture is the most important and widely practiced agro-ecological farming system. It is claimed to be the most sustainable approach and long term adaptation strategy. It promotes soil fertility and diversity at all levels and makes soils less susceptible to erosion. It is also reported to be climate change resilience farming systems as it promotes the proper management of soil, water, biodiversity and local knowledge and provides producers with ecologically sound management decisions. A field experiment was carried out at the Model Farm of National Research Centre, El Tour, South Sinai to study the impact of (Mycorrhiza 1kg/fed., charcoal 4 tons/fed., chicken manure 5 tons/fed., in addition to control treatment) on some growth characters, photosynthetic pigments content, and some physiological aspects i.e. proline and soluble carbohydrates content, succulence and osmotic pressure values, as well as nutritive values i.e. Crude fat (CF), Acid detergent fiber (ADF), Neutral detergent fiber (NDF), Ether extract (EE) and Nitrogen-free extract (NFE) of five halophytic plant species (*Leptochloa fusca*, *Kochia indica*, *Sporobolus virginicus* and *Spartina patens*). Our results showed that organic fertilizer treatment enhanced all the previous character as compared with control with superiority to chicken manure over the other treatments.

Keywords : organic agriculture, halophytic plants, saline environment, water security

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