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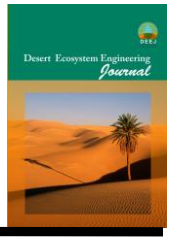

Investigating the Effect of Saline Water Treatments and Some Organic Fertilizers on lemongrass' (*Cymbopogon citratus*) Physiological Features and Growth

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Extended Abstract

Introduction: Salinity is a basic non-living environmental factor that reduces the yield worldwide. In arid and semi-arid regions, the salinity of water and soil limits crop production. Therefore, it is crucially important to assess the salinity tolerance of medicinal herbs if they are to be cultivated in saline areas.

Materials and Methods: To investigate the effect of water salinity and some saline organic fertilizers on the lemongrass' (*Cymbopogon citratus*) physiological features and growth, a greenhouse experiment was carried out in the research greenhouse of Hormozgan Agricultural and Natural Resources Research Center through a completely randomized design with four replications at seven salinity levels including non-saline water as a controlling factor, saline water at 4, 10, and 15 ds/m levels, and saline organic fertilizers at three levels including fish meal fertilizer with salinity rate of 5/2, liquid fish manure with salinity rate of 4/9, and poultry slaughterhouse fertilizer with salinity rate of 4/6 ds /m. Moreover, the physiological growth features, including the leaf area, the leaf's fresh and dry weight, the root's fresh and dry weight, the plant's height, the number of tillers, and total chlorophyll were investigated.

Discussion and Conclusion: The study's results indicated that water salinity and organic fertilizers had a significant effect on all studied features. It was also found that treating Irrigation water with a salinity of 15 ds /m had the most negative effect on all studied features, with the root's dry weight affected the most. On the other hand, treating poultry slaughterhouse fertilizer with a salinity of 4/6 ds/m improved all physiological growth features compared to the control factor except the number of tillers per plant. The results also showed that lemongrass was sensitive to over 5 ds/m salinity but tolerated less than 5 ds/m salinity and that it was possible to use the relatively saline organic fertilizers studied as a food source in cultivating this plant.

Keywords: Salinity, Medicinal Herb, Poultry Slaughterhouse, Liquid Fertilizer, Fish Powder.

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