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TURF GRASS SOD PRODUCTION UTILIZING HYDROPONIC SYSTEMS

by

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Abstract

Turf as a cover is a very essential component in enhancing the aesthetics and in climate modification of the landscapes in the arid region. The grasses employed for turf production are cultivable grass species of the poaceae family in the class monocots. It can considerably withstand the stress of traffic and mowing provided right grass species are selected and sod production undertaken. The UAE is characterized by a bi-seasonal Mediterranean climate with high temperatures and low rainfall. Like in any desert ecosystems, soils are poor in organic matter, with relatively low biological activities in UAE. In the present research, two warm season grasses namely Bermuda grass and Paspalum grass were selected for sod production using Rockwool alone, fabric jute alone and Rockwool with Jute fabric combination in automated hydroponic system with separate tanks for different substances i.e. water (Tank 1), pH adjustment (Tank 2), Iron Chelate and Calcium (Tank 3) and Nutrient solution (Tank 4). The overall results indicate that the Bermuda grass was found better in terms of germination percentage, fresh and dry weight of biomass. In the case of the substrates used, the Jute Fabric in combination with Rockwool promoted the germination and furhter growth. The Rockwool alone promoted the fresh and dry weight of the plant biomass studied. In terms of length of plant, both grasses showed only a slight variation between the two substrates studied. While jute alone has failed to encourage germination of both species because the jute does not retain water and it dries easily. The soilless production system is very suitable for UAE socio-economic and agro-ecological status. However, growers' acceptance of this new system represents one of the key issues that must be addressed to ensure the successful dissemination of the technology and sustainability of the achievements. The turf grass cultivation using the hydroponic system can prove a very viable technology instrumental in enhancing the greenery in the country as well as the landscapes. This research is being conducted with the goal to provide a sustainable and effective alternative method of turf grass production. The hydroponic system can provide a breakthrough in the landscaping industry in UAE, once the method of turf grass production system is standardized.

Keywords: Bermuda grass, paspalum grass, hydroponic system, landscape.