



Influences of Light Intensity, and Soil Type on the Growth and Performance of the Indigenous Tree Seedling Species (*Leptadenia pyrotechnica*)

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Abstracts

Forest rehabilitation has a great role to play in the desert region of Sudan in terms of production and protection, one of the main causes of the degradation in the area is deforestation which leads to soil degradation and soil erosion especially by wind speed so this area needs stabilization by planting tree seedling. The experiment was carried out at the nursery of Hudieba Research Station in River Nile State in September 21Th 2022. The objective of this study was to examine the effect of light intensity and soil type on growth and development of (*Leptadenia pyrotechnica*). Murkh seedling. The treatments tested were arranged in spilt plots design with three replications. The studied factors were light intensity (50% under plastic net, 100% under direct sun light) and soil type's (sand, sand & clay, and clay). The measurements were taken within the first to the second weeks and after three months for germination and different parameters of seedlings, respectively. Results showed that, germination percentage of *Leptadenia pyrotechnica* seeds was high in 50% sand soil type and similarly in 50% and 100% in sand & clay 1:1, however it was better in 100% than 50% light intensity in clay soil type compared to the other treatments. Also Highly significant effect were observed between treatments on plant height at different stage of growth seedling growth in (first, second and third months), and in fresh and dry weight of roots, shoot (stem and levees) and length of root in different light intensity and soil type, respectively. Fresh and dry weight of root and shoot and roots length were better in 100% light intensity in clay and sand & clay 1:1 soil type. The interaction between different treatments showed significant differences in plant hight at various stages, as well as in the fresh and dry weight of roots and shoots. Moreover, seedlings grown under 100% light intensity in clay and sand & clay 1:1 soil type recorded high fresh and dry weight of root and shoot than those in other treatments three

