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Growth responses of sugar palm (*Arenga pinnata* (Wurmb.) Merr.) seedlings to different shading levels

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Abstract

Sugar palm (*Arenga pinnata* (Wurmb.) Merr.) grows naturally under shading of tree canopy, therefore shading levels take a main role for an optimal growth of sugar palm seedlings. The study was conducted to examine the effect of shading levels on the seedlings growth of sugar palm for up to 11 months under four shading levels: S0 (100% of full sunlight or non-shading), S1 (32% shading level), S2 (56% shading level), and S3 (64% shading level). Sugar palm seedlings grown under the shade (32, 56, and 64%) showed better plant height, stem diameter, leaf size, petiole and rachis length, chlorophyll content, root fresh and dry weights, root volume, and total biomass than those grown without shading. Although there were no significant different responses among the shading treatments on plant height, biomass dry weight, leaf morphological characters, chlorophyll content, and SPAD value, the S2 treatment showed a significant effect on a better root characters. Therefore, it can be concluded that the S2 treatment, 56% shading level, is an optimal shading condition for sugar palm seedlings.

Keywords: Agroforestry, Cultivation technique, Low light intensity, Main nursery, Morphology

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