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ASSESSMENT OF SAPLINGS OF MANGOSTEEN (*GARCINIA MANGOSTANA* L) IN ABSORBING CARBON DIOXIDE

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Abstract

Carbon dioxide is a gas needed by plants in its growth. Plants use CO₂ for photosynthesis in producing food ingredients. Research topics related to carbon dioxide uptake are still open to study because there are still many potential types of plants, especially in Central Kalimantan. Plants that have not been studied are mainly plant saplings that are easily found and widely known by the people of Central Kalimantan. The plant species is Mangosteen (*Garcinia mangostana* L.). The study aims to (a) measure the ability of the mangosteen seedlings' CO₂ uptake (b) measure the fluctuations in seedlings of mangosteen plant CO₂ uptake during the measurement period of 06.00-06.30, 12.00-12.30 and 15.00-15.30 WIB, (c) analyze biomass / dry weight reserves and organic carbon stored in mangosteen seedlings. The mangosteen seedlings used in this study were 3-5 months old. Measurements of CO₂ absorption using a containment method measuring 50 cm x 50 cm x 30 cm and CO₂ gas analysis using Gas Chromatography. The time period for measuring CO₂ uptake is carried out at 06.00-06.30, 12.00-12.30 and 15.00-15.30 WIB with a time interval of 5, 10, 15, 20, 25 and 30 for 4 (four) weeks. Analysis of biomass / dry weight reserves, percent and organic carbon content of saplings of mangosteen plants using the gravimetric method. The results showed that the average CO₂ absorption rate of the mangosteen seedlings was 0.119 mg / m² / minute. The CO₂ absorption rate of saplings of mangosteen plants fluctuated, where the highest CO₂ uptake occurred at 12.00-12.30 WIB, followed by 15.00-15.30 WIB and the lowest CO₂ uptake occurred at 06.00- 06.30 WIB. The average biomass / dry weight of saplings of Mangosteen plants is 9.24 grams, the average percent of organic carbon ranges from 55.65% and the organic carbon content is 5.14 grams.

Author Keywords

Mangosteen, plant saplings, carbon dioxide, biomass, organic carbon

Index Keywords

Photosynthesis, Gas Chromatography, rehabilitation activities

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