

Effect of Chemical Fertilizer Application on the Growth and Nutrient Contents in  
Leaflet of Sago Palm at the Rosette Stage

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**Abstract** Peatlands are characterized by high groundwater levels, low pH, and low nutrient contents. The growth rate and size of sago palms (*Metroxylon sagu* Rottb.) grown on peatlands are low. Two field experiments were conducted on Tebing Tinggi Island, Riau Province, Indonesia. In Experiment 1, the importance of minor elements was investigated by excluding each from the composite fertilizer. In Experiment 2, four treatments were prepared by combining the presence/absence of dolomite and chemical fertilizers, consisting of the major and minor elements. Solid fertilizers were spot-applied. The effects of minor element and dolomite applications were evaluated based on the growth parameters and their concentrations in leaves of 5-year-old sago palms from the transplanting time, when sago palms were still at the rosette stage. Plant height and the number of leaves did not differ significantly among the treatments in both experiments. In Experiment 1, there were no significant differences in the amounts of minor elements in the leaves among the treatments. Although the application of dolomite plus chemical fertilizer exerted a small beneficial effect on the K content in

leaves, no other differences were observed in the contents of major and minor elements among the treatments in Experiment 2. Our findings indicate that spot application of solid salts is an ineffective means of delivering fertilizer to sago palms growing in peat soils.

**Keywords:** Major elements, *Metroxylon sagu* Rottb., Minor elements, Peat soil