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Leaf Characteristics and Shape of Sago Palm (*Metroxylon sagu* Rottb.) for Developing a Method of Estimating Leaf Area

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Abstract: We aimed to determine the orientation for developing the method to estimate leaf area of sago palm (*Metroxylon sagu* Rottb.) by extracting characteristics that might be related to estimating leaf area from characteristics of leaves. Plants of around two years after trunk formation at a sago palm farm in Sarawak, Malaysia were used for the investigation. In a plant with eleven living leaves, the length of the unfolded leaf blade ranged from 6.0 to 7.2 m; the length of a petiole ranged from 1.8 to 3.1 m. The number of leaflets on the left side of a leaf viewing adaxial leaf surface with the tip upward was larger than that on the right side by 1-5 leaflets in all leaves. The lowest leaflet of a leaf was on the left side in all leaves. The relative position of the lowest leaflet on the rachis was related to the way a leaf was folded in a plant. The length, width and area of the right and the left leaflets were compared on the basis of their position on a rachis. They had approximately the same dimensions. This fact implied that those characteristics were almost symmetric with respect to the rachis; therefore, the position of a leaflet on a rachis was considered to be an important characteristic for analyzing leaf area. We drew a leaf diagram based on the measured data and examined a method of estimating leaf area using the leaf outline, but the method was not suitable. We decided to examine a method to integrate the leaflet areas for accurate estimation of the leaf area.

Keywords: Leaf area, Leaf shape, Leaflet, Leaflet area, *Metroxylon sagu* Rottb., Sago

palm

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