Effects of Fertilizer Application on the Root and Aboveground Biomass of Sago Palm (*Metroxylon sagu* Rottb.) Cultivated in Peat Soil

Ken-ichi KAKUDA[1], Akira WATANABE[2], Ho ANDO[1] and Fob Shoon JONG[3]

1: Faculty of Agriculture, Yamagata University, Tsuruoka 997-8555, Japan

2: Graduate School of Bioagricultural Sciences, Nagoya University, Nagoya 464-8601, Japan

3: P. T. National Timber and Forest products, Jln Jen. A. Yani 105-109, Selatpanjang, 28753, Riau, Indonesia

Abstract In previous studies, fertilizer application to sago palms cultivated in peat soils did not appreciably improve the growth of sago palm. We applied ca. 1 times the general rates of nutrients (N, P, K, Ca, Mg, Cu, Zn, Fe and B) to sago palm cultivated in peat soils at Riau, and evaluated the response of the roots and aboveground biomass during the 16 months period following the fertilization (2 dry seasons and 1 wet season). The dry weight of the sago palm roots with fertilizer was smaller than that at the onset of the experiment, whereas the sago roots without fertilizer was similar in dry weight to the initial ones. The response of the aboveground biomass to fertilization differed among organs, i.e., the dry weights of the leaves, rachis, and trunk did not differ significantly between the palms with and without fertilizer application, while those of petioles and suckers were significantly greater in the palms with fertilizer. The percentage of the dry weight of mother palm in the total dry weight decreased linearly with increasing the dry weight of suckers, which ranged from 74% to 57% for the palms with fertilizer versus from 85% to 79% for the palms without fertilizer. This observation indicates that the application of fertilizer accelerated the accumulation of dry matter in suckers rather than in mother palm.

Key Words: Aboveground, Dry weight, Mother palm, Sucker