

Optimum levels of N, P, and K nutrition for oil palm seedlings grown in tropical peat soil

ABSTRACT

Balanced nutrition can improve the growth of oil palm seedlings grown under limited nutrient condition in tropical peat soil. However, optimum levels of nitrogen (N), phosphorus (P), and potassium (K) nutrition of oil palm seedlings, grown in tropical peat soil at nursery stage, have not been reported. This paper examines the growth, biomass accumulation, nutrient concentration, and partitioning in the plant parts of oil palm seedlings at different levels of N, P, and K nutrition. Six levels of N, P₂O₅, and K₂O were used in a randomized complete block design (RCBD) with five replications. Parameters measured at harvest include plant height, leaf number/plant, stem diameter, and SPAD chlorophyll value, biomass accumulation, and nutrient concentration in palm parts. Findings revealed that, treatment levels of N, P₂O₅, and K₂O nutrition at 22, 22, and 40 g/plant showed significant effects and enhanced oil palm seedlings vegetative growth in tropical peat soil.

Keyword: Growth traits; Optimum levels; Oil palm seedlings; Tropical peat soil