

Growth performance of roselle (*Hibiscus sabdariffa*) in response to oil palm by-product media and controlled release fertilizer

ABSTRACT

A study was carried out to optimize the best ratio of empty fruit bunch (EFB) of oil palm as soilless culture media for growth performance of roselle, to investigate the optimum level of slow-release fertilizer for biomass production and to measure the interaction between different ratio of media and rate of fertilizer on growth of roselle. As treatment 4 different media (M₁ = Top soil, M₂ = 1 Top soil: 1 sand, M₃ = 2 Top soil: 1 EFB: 1 Sand, M₄ = 3 Top soil: 2 EFB: 1 Sand) and 4 different control released fertilizer (CRF) rates (F₁ = Control (80 kg/ha NPK), F₂ = 40 kg/ha Kamila, F₃ = 80 kg/ha Kamila and F₄ = 120 kg/ha Kamila) were applied in this experiment. Media treatment M₁ indicated a good response in number of branches, stem diameter, total number of calyxes and shoot dry weight compared to other 3 media. While M₃ and M₄ gave better respond on total leaf area and nutrient content (N, P and K) in plant tissue of roselle. Whereas for different rates of fertilizer applied, treatment F₃ (80 kg/ha Kamila CRF) exhibited the better performance on growth of roselle plants. Significant differences were observed for N, P and K nutrient uptake in fertilizer treatments compared to media treatments.