

ABSTRACT

Oil palm (*Elaeis guineensis* Jacq) is a plant that produces Crude Palm Oil (CPO), which serves as a primary ingredient for cooking oil and also as a raw material for various industrial applications used worldwide. To obtain high-quality seedlings, one of the efforts that can be made is by using coconut fiber as a planting medium in the pre-nursery, along with the supply of essential nutrients such as nitrogen (N), phosphorus (P), and potassium (K), which are the main nutrients required. The purpose of this study was to determine the effect of coconut fiber and NPK fertilizer dosage on the growth of oil palm seedlings in the pre-nursery phase. This research was conducted at the experimental field and the Laboratory of the Faculty of Agriculture, Universitas Malikussaleh, located in Muara Batu District, North Aceh Regency. This study was carried out from December 2024 to March 2025. This study used a Factorial Randomized Block Design (RBD) with 2 treatment factors and 3 replications. The first factor is coconut fiber consisting of 0 g/polybag (S0), 25 g/polybag (S1), 50 g/polybag (S2), and 75 g/polybag (S3). The second factor is NPK fertilization consisting of 0 g/polybag (N0), 1 g/polybag (N1), 2 g/polybag (N2), and 3 g/polybag (N3). The results showed that the application of coconut fiber at the dose of 25 g/polybag gave a positive significant response to the growth of oil palm seedlings in the variables of stem diameter and number of leaves. The application of NPK fertilizer at the dose of 2 g/polybag gave a significant response in the variables of root volume and root dry weight. There was no interaction between the application of coconut fiber and NPK fertilizer on the growth of oil palm seedlings.

Keywords: Oil Palm, NPK, Pre Nursery and Coconut Fiber