

ABSTRAK

Penelitian ini bertujuan untuk mengetahui pengaruh pemberian *rock phosphate* dengan kombinasi *decanter solid* terhadap pertumbuhan tanaman kelapa sawit (*Elaeis guineensis* Jacq.) fase Tanaman Belum Menghasilkan (TBM) pada tanah Ultisol. Penelitian ini dilaksanakan di kebun penelitian Talang Kebang Banyuasin III, Sumatera Selatan, pada bulan April sampai Juni 2026. Penelitian menggunakan Rancangan Acak Kelompok (RAK) nonfaktorial dengan empat perlakuan dan delapan ulangan. Parameter yang diamati meliputi tinggi tanaman, diameter batang, jumlah pelepah, dan pH tanah. Data dianalisis menggunakan analisis ragam (ANOVA). Hasil penelitian menunjukkan bahwa pemberian kombinasi *rock phosphate* dan *decanter solid* belum memberikan pengaruh yang nyata terhadap tinggi tanaman, diameter batang, jumlah pelepah, maupun pH tanah. Meskipun demikian, seluruh perlakuan menunjukkan kecenderungan peningkatan nilai rata-rata pada setiap parameter pengamatan. Perlakuan P2 cenderung menghasilkan rata-rata tinggi tanaman tertinggi, perlakuan P3 menghasilkan rata-rata diameter batang dan pH tanah tertinggi, sedangkan perlakuan P1 menghasilkan rata-rata jumlah pelepah tertinggi. Secara umum, kombinasi *rock phosphate* dan *decanter solid* berpotensi mendukung pertumbuhan vegetatif tanaman kelapa sawit fase TBM.

Kata kunci: *decanter solid*; *Elaeis guineensis*; *rock phosphate*; *ultisol*; tanaman belum menghasilkan.

ABSTRACT

This study aimed to determine the effect of applying rock phosphate combined with decanter solids on the growth of oil palm (*Elaeis guineensis* Jacq.) during the immature plant (TBM) phase on Ultisol soil. The research was conducted at the Talang Kebang research plantation in Banyuasin III, South Sumatra, from April to June 2026. A non-factorial Randomized Block Design (RBD) was employed, featuring four treatments and eight replications. The parameters observed included plant height, stem diameter, number of fronds, and soil pH. Data were analyzed using Analysis of Variance (ANOVA). The results indicated that the application of the rock phosphate and decanter solid combination did not yet yield a significant effect on plant height, stem diameter, number of fronds, or soil pH. Nevertheless, all treatments showed a trend of increasing mean values across all observed parameters. Treatment P2 tended to produce the highest mean plant height; treatment P3 yielded the highest mean stem diameter and soil pH; while treatment P1 resulted in the highest mean number of fronds. Overall, the combination of rock phosphate and decanter solids shows potential to support the vegetative growth of oil palm plants during the immature phase.

Keywords: decanter solids; *Elaeis guineensis*; rock phosphate; Ultisol; immature plant.