RINGKASAN

Kelapa sawit (*Elaeis guineensis* Jacq.) merupakan komoditas penting Indonesia, sehingga kualitas bibit pada tahap pre-nursery harus optimal. Penelitian ini mengevaluasi efektivitas POC eceng gondok yang diperkaya Trichoderma serta pupuk kandang ayam + Trichoderma terhadap pertumbuhan bibit kelapa sawit varietas DxP PPKS 540 yang ditanam di tanah Inceptisol. Penelitian berlangsung Februari–April 2025 di lahan percobaan Fakultas Pertanian UISU, menggunakan Rancangan Acak Kelompok faktorial 4×4.

Faktor pertama adalah pupuk kandang ayam + Trichoderma (0–750 g + 0–7,5 ml), dan faktor kedua adalah POC eceng gondok (0–37,5 ml/tanaman). Variabel yang diamati meliputi tinggi bibit, jumlah daun, diameter batang, luas daun, klorofil, bobot segar, dan bobot kering tanaman.

POC eceng gondok mengandung unsur hara namun masih memiliki pH masam dan kadar hara makro rendah sehingga membutuhkan formulasi lanjutan. Pupuk kandang ayam + Trichoderma memberikan pengaruh nyata pada tinggi, diameter, luas daun, serta bobot segar dan kering tanaman, dengan hasil terbaik pada dosis 500 g + 5 ml. POC eceng gondok berpengaruh nyata pada tinggi, luas daun, bobot segar, dan kering, dengan dosis optimal 25 ml/tanaman.

Interaksi kedua perlakuan berpengaruh nyata pada luas daun dan bobot kering, dengan kombinasi terbaik 500 g pupuk kandang + 5 ml Trichoderma + 25 ml POC eceng gondok. Secara keseluruhan, pupuk kandang ayam + Trichoderma lebih efektif dibanding POC, namun kombinasi keduanya menghasilkan pertumbuhan bibit terbaik pada fase pre-nursery.

SUMMARY

Oil palm (Elaeis guineensis Jacq.) is an important commodity in Indonesia, so the quality of seedlings at the pre-nursery stage must be optimal. This study evaluated the effectiveness of water hyacinth POC enriched with Trichoderma and chicken manure + Trichoderma on the growth of DxP PPKS 540 oil palm seedlings planted in Inceptisol soil. The study was conducted from February to April 2025 at the UISU Faculty of Agriculture experimental field, using a 4×4 factorial randomized block design.

The study was conducted from February to April 2025 at the UISU Faculty of Agriculture experimental field, using a 4×4 factorial randomized block design. The first factor was chicken manure + Trichoderma (0–750 g + 0–7.5 ml), and the second factor was water hyacinth POC (0–37.5 ml/plant). The variables observed included seedling height, number of leaves, stem diameter, leaf area, chlorophyll, fresh weight, and dry weight of the plants.

Water hyacinth POC contains nutrients but still has an acidic pH and low macro nutrient content, so it requires further formulation. Chicken manure + Trichoderma had a significant effect on height, diameter, leaf area, and fresh and dry weight of plants, with the best results at a dose of 500 g + 5 ml. Water hyacinth POC had a significant effect on height, leaf area, fresh weight, and dry weight, with an optimal dose of 25 ml/plant.

The interaction of the two treatments had a significant effect on leaf area and dry weight, with the best combination being 500 g of chicken manure + 5 ml of Trichoderma + 25 ml of water hyacinth POC. Overall, chicken manure + Trichoderma was more effective than POC, but the combination of the two produced the best seedling growth in the pre-nursery phase.