

ABSTRAK

PENGAPLIKASIAN PUPUK ANORGANIK DAN PUPUK ORGANIK BERBAHAN *TEA WASTE* TERHADAP POPULASI BAKTERI PELARUT FOSFAT DAN PRODUKSI TANAMAN TEH (*Camellia sinensis*) DI PERKEBUNAN PPTK GAMBUNG JAWA BARAT

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Pemupukan merupakan faktor penting dalam upaya meningkatkan produktivitas tanaman teh (*Camellia sinensis*) serta menjaga kesuburan tanah secara biologis. Penelitian ini bertujuan untuk menganalisis pengaruh aplikasi pupuk anorganik dan pupuk organik berbahan tea waste terhadap populasi bakteri pelarut fosfat (PSB) dan produksi tanaman teh di Perkebunan PPTK Gambung, Jawa Barat. Penelitian menggunakan Rancangan Acak Kelompok Lengkap (RAKL) dengan 16 perlakuan dan 3 ulangan. Parameter yang diamati meliputi populasi PSB (CFU g⁻¹ tanah), produksi pucuk per plot selama September–Desember 2025, pH tanah, dan densitas akar. Data dianalisis menggunakan analisis ragam (ANOVA) pada taraf nyata 5%. Hasil penelitian menunjukkan bahwa perlakuan pemupukan tidak berpengaruh nyata terhadap produksi pucuk tanaman teh pada seluruh periode pengamatan ($p > 0,05$). Meskipun demikian, terdapat variasi nilai produksi antar perlakuan pada setiap bulan pengamatan. Sebaliknya, perlakuan pemupukan menunjukkan respons terhadap populasi bakteri pelarut fosfat, dengan populasi tertinggi diperoleh pada perlakuan T3K0 sebesar $7,3 \times 10^6$ CFU g⁻¹ tanah. Secara umum, aplikasi tea waste berpotensi mendukung peningkatan populasi bakteri pelarut fosfat di dalam tanah, meskipun belum memberikan pengaruh yang signifikan terhadap produksi tanaman teh selama periode penelitian.

Kata kunci : *Camellia sinensis*, bakteri pelarut fosfat, *tea waste*, produksi pucuk.

ABSTRACT

Application of Inorganic and Tea Waste-Based Organic Fertilizers on Phosphate Solubilizing Bacteria Population and Tea Plant (*Camellia sinensis*) Production at PPTK Gambung Plantation, West Java

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Fertilization is an important factor in improving tea (*Camellia sinensis*) productivity while maintaining soil biological fertility. This study aimed to analyze the effect of inorganic fertilizer and tea waste-based organic fertilizer application on phosphate-solubilizing bacteria (PSB) populations and tea yield at PPTK Gambung Plantation, West Java. The experiment was arranged in a Randomized Complete Block Design (RCBD) consisting of 16 treatments with three replications. Observed parameters included PSB population (CFU g⁻¹ soil), shoot yield per plot from September to December 2025, soil pH, and root density. Data were analyzed using analysis of variance (ANOVA) at a 5% significance level. The results showed that fertilization treatments had no significant effect on tea shoot yield during all observation periods ($p > 0.05$). However, variations in yield values among treatments were observed in each month. In contrast, fertilization treatments influenced the population of phosphate-solubilizing bacteria, with the highest population recorded in treatment T3K0 at 7.3×10^6 CFU g⁻¹ soil. In general, the application of tea waste has the potential to enhance soil biological activity through increasing PSB populations, although it has not significantly improved tea production within the duration of this study

Kata kunci : *Camellia sinensis*, phosphate-solubilizing bacteria, tea waste, shoot yield