

RINGKASAN

Penelitian ini dilaksanakan di Lahan Percobaan Perumahan Pondok Indah, Jln. Duren Dusun 6, Kelurahan Tanjung Anom Kec. Pancur Batu, Kabupaten Deli Serdang, prov. Sumatera Utara, dengan ketinggian ± 60 mdpl dengan topografi tanah datar. Penelitian ini dilakukan pada bulan Juli sampai bulan Oktober 2025. Penelitian bertujuan untuk Mengevaluasi efektivitas ecoenzim dalam meningkatkan ketahanan tanaman terhadap serangan patogen, terutama jamur penyebab penyakit seperti *Curvularia* sp. Atau patogen lain yang umum menyerang tanaman budidaya. Mengidentifikasi peran senyawa aktif asam salisilat dan asam palmitat terhadap respons fisiologis tanaman terhadap stresbiotik. Penelitian menggunakan Rancangan Acak Kelompok (RAK) Faktorial dengan 2 Faktor perlakuan, faktor pertama yaitu dosis pupuk ekoenzim dengan 3 taraf perlakuan yaitu $E_0 =$ kontrol, $E_1 = 30$ ml dan $E_2 = 60$ ml. Faktor kedua yaitu Asam lemak dengan 3 taraf perlakuan, yaitu : $B_0 =$ kontrol, $B_1 =$ asam salisilat 3% dan $B_2 =$ asam palmitat 3%. Parameter yang diamati adalah intensitas serang karat daun, tinggi tanaman, diameter batang, jumlah daun, luas daun dan jumlah stomata.

Hasil penelitian menunjukkan bahwa Ekoenzim secara nyata mampu menghambat perkembangan karat daun dan, meningkatkan pertumbuhan bibit tanaman sawit pada fase pre-nursery. Asam lemak secara nyata mampu menghambat perkembangan karat daun dan meningkatkan pertumbuhan tinggi bibit tanaman sawit dan luas daun pada fase pre-nursery namun interaksi antar perlakuan tidak berpengaruh nyata terhadap seluruh parameter yang diuji.

Kata Kunci : Ekoenzim, Asam Salisilat, Asam Palmitat, Kelapa Sawit

SUMMARY

This research was conducted at the Pondok Indah Housing Experimental Field, Jln. Duren Dusun 6, Tanjung Anom Village, Pancur Batu District, Deli Serdang Regency, North Sumatra Province, with an altitude of ± 60 meters above sea level with flat land topography. This research was conducted from July to October 2025. The research aims to evaluate the effectiveness of ecoenzymes in increasing plant resistance to pathogen attacks, especially disease-causing fungi such as *Curvularia* sp. Or other pathogens that commonly attack cultivated plants. Identifying the role of active compounds of salicylic acid and palmitic acid on the physiological response of plants to biotic stress. The research used a Factorial Randomized Block Design (RAK) with 2 treatment factors, the first factor is the dose of ecoenzyme fertilizer with 3 treatment levels, namely E0 = control, E1 = 30 ml and E2 = 60 ml. The second factor is Fatty acids with 3 treatment levels, namely: B0 = control, B1 = 3% salicylic acid and B2 = 3% palmitic acid. The parameters observed were leaf rust attack intensity, plant height, stem diameter, number of leaves, leaf area and number of stomata.

The results showed that Ecoenzyme significantly inhibited the development of leaf rust and increased the growth of oil palm seedlings in the pre-nursery phase. Fatty acids significantly inhibited the development of leaf rust and increased the growth of oil palm seedlings in height and leaf area in the pre-nursery phase. The interaction did not significantly affect all tested parameters.

Keywords: Ecoenzyme, Salicylic Acid, Palmitic Acid, Oil Palm