

## PENGARUH DAN KORELASI TINGKAT PELAPUKAN TANDAN KOSONG KELAPA SAWIT DENGAN POPULASI *Oryctes rhinoceros*

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### INTISARI

Produksi minyak kelapa sawit menghasilkan limbah tandan kosong kelapa sawit (TKKS) sebanyak 23%. Limbah ini merupakan media yang sesuai sebagai tempat perkembanganbiakan *Oryctes rhinoceros*, hama utama kelapa sawit. Penelitian bertujuan untuk mengetahui kekuatan pengaruh dan hubungan antara tingkat pelapukan TKKS dengan populasi *O. rhinoceros*, dan berbagai faktor yang mempengaruhi. Penelitian dilaksanakan di perkebunan kelapa sawit blok 19a, 20a, dan 21a, milik PT. Inti Indosawit Subur di Desa Mekar Jaya, Kecamatan Pangkalan Kerinci, Kabupaten Pelalawan, Provinsi Riau, pada bulan Februari hingga April 2022. Data sekunder insidensi serangan *O. rhinoceros* diperoleh dari PT. Inti Indosawit Subur. Pengamatan kondisi fisik dan tingkat pelapukan TKKS serta populasi *O. rhinoceros* dilakukan pada 30 sampel TTKS yang diambil secara *purposive sampling* dan acak di kebun kelapa sawit yang diperlakukan dengan TKKS. Anova RCBD diaplikasikan untuk mengetahui pengaruh faktor umur TKKS terhadap populasi *O. rhinoceros*. Uji  $t_{\alpha 0,05}$  diaplikasikan untuk membedakan rerata populasi antara TKKS utuh dan TKKS cacah. Analisis regresi linier berganda diaplikasikan untuk mengetahui pengaruh dan hubungan antara berbagai faktor dengan tingkat pelapukan TKKS dan kepadatan populasi *O. rhinoceros*. Analisis regresi polynomial order dua diaplikasikan untuk menentukan kesesuaian umur TKKS untuk pertumbuhan dan perkembangan *O. rhinoceros*. Hasil penelitian menunjukkan bahwa umur dan kelembaban mikro TKKS berpengaruh signifikan (73,10%) dan berkorelasi kuat ( $r = 0,82$ ; umur TKKS berkorelasi negatif, kelembaban relatif TKKS berkorelasi positif) terhadap populasi *O. rhinoceros*. Sementara itu umur dan tipe TKKS (utuh dan cacah) berpengaruh signifikan (62,40%) dan berkorelasi positif yang kuat ( $r = 0,816$ ) terhadap tingkat pelapukan TKKS. Umur TKKS cacah tidak berpengaruh signifikan sebaliknya umur TKKS utuh berpengaruh signifikan terhadap populasi *O. rhinoceros*. Umur optimum TKKS untuk pertumbuhan dan perkembangan *O. rhinoceros* diperkirakan 3,6 bulan dan maksimum 4,2 bulan.

Kata kunci: kelapa sawit, *Oryctes rhinoceros*, pelapukan, TKKS

# THE INFLUENCE AND CORRELATION OF COMPOSTING RATE OF OIL PALM EMPTY FRUIT BUNCHES WITH POPULATION OF *Oryctes rhinoceros*

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## ABSTRACT

Crude Palm Oil (CPO) production resulting 23% of empty oil palm bunches (EOPB) waste. This waste is a suitable media for breeding site of *Oryctes rhinoceros*, the main pest of oil palm. The aim of the study was to determine the strength of the influence and the relationship between the composting rate of EOPB with the *O. rhinoceros* population, and various influencing factors. The research was carried out in the oil palm plantations - at blocks of 19a, 20a, and 21a - owned by PT Inti Indosawit Subur in Mekar Jaya Village, Pangkalan Kerinci District, Pelalawan Regency, Riau Province, during February to April 2022. Secondary data on the incidence of *O. rhinoceros* attacks were obtained from PT. Inti Indosawit Subur. Observations of the physical condition and composting rate of EOPB and *O. rhinoceros* population were carried out on 30 samples of EOPB. The samples were taken with purposive sampling method and randomly in the coconut plantations treated with EOPB. RCBD anova was applied to determine the effect of EOPB old on the population of *O. rhinoceros*. Test of  $t_{\alpha 0,05}$  was applied to differentiate the population average between EOPB types namely unchopped and chopped. Multiple linear regression analysis was applied to determine the effect and relationship between various factors with composting rate of EOPB and population density of *O. rhinoceros*. Analysis of polynomial regression order two was carried out to determine the EOPB old that was suitable media for growth and development of *O. rhinoceros*. The results showed that EOPB old and micro-moisture of EOPB had a significant effect (73.10%) to and strongly correlated ( $r = 0.82$ ; EOPB old was negatively correlated, the micro-moisture was positively correlated) with the population of *O. rhinoceros*. Meanwhile, the old and type of EOPB had a significant effect (62.40%) to and had a strong positive correlation ( $r = 0.816$ ) with the composting rate of EOPB. The old of chopped EOPB did not have a significant effect and contrary, the unchopped one had a significant effect on the *O. rhinoceros* population. The optimum and maximum EOPB olds for growth and development of *O. rhinoceros* were approximately 3.6 and 4.2 months.

Keyword: composting, EOPB, oil palm, *Oryctes rhinoceros*