Intisari

Oryctes rhinoceros Linnaeus (Coleoptera: Scarabaeidae) merupakan salah satu hama utama kelapa sawit, menyerang tanaman belum menghasilkan (TBM) dan tanaman menghasilkan (TM). Serangan hama ini meningkat seiring dengan meluasnya peremajaan kelapa sawit dan melimpahnya limbah batang kelapa sawit (LBKS). Penelitian bertujuan untuk mengetahui pengaruh dan hubungan antara tingkat pelapukan LBKS dengan populasi *O. rhinoceros,* serta berbagai faktor yang berpengaruh. Penelitian dilaksanakan di perkebunan kelapa sawit blok 14a, 17b, 20a, dan 21a milik PT Inti Indosawit Subur (Asian Agri) dan SP-6, di Desa Mekar Jaya, Kabupaten Pelalawan, Riau, dalam bulan Februari sampai Maret 2022. Data sekunder insidensi serangan *O. rhiniceros* diperoleh dari PT Inti Indosawit Subur (Asian Agri). Pengamatan kondisi fisik dan tingkat pelapukan LBKS serta populasi *O. rhinoceros* dilakukan pada 33 sampel LBKS yang diambil secara *purposive sampling* dan acak di kebun kelapa sawit *replanting*. Anova RCBD diaplikasikan untuk mengetahui pengaruh faktor umur LBKS terhadap populasi *O. rhinoceros*. Uji $t_{\alpha 0,05}$ diaplikasikan untuk menentukan perbedaan rerata populasi *O. rhinoceros* pada tipe LBKS *non chipping* dan *chipping*. Analisis regresi linier berganda diaplikasikan untuk mengetahui pengaruh dan hubungan antara berbagai faktor terhadap tingkat pelapukan LBKS dan populasi *O. rhinoceros.* Analisis regresi polynomial order dua diaplikasikan untuk menentukan umur LBKS yang sesuai sebagai tempat perkembangbiakan *O. rhinoceros*. Hasil penelitian menunjukkan bahwa umur, tingkat pelapukan, dan tipe LBKS berpengaruh signifikan (53,10%) dan berkorelasi kuat (r = 0,729) terhadap populasi *O. rhinoceros*. Umur dan tipe LBKS berkorelasi negatif dan tingkat pelapukan LBKS berkorelasi positif dengan populasi *O. rhinoceros*. Sementara itu umur dan tipe LBKS serta populasi *O. rhinoceros* berpengaruhi signifikan (80,60%) dan berkorelasi positif sangat kuat (r=0,898) terhadap tingkat pelapukan LBKS. Populasi *O. rhinoceros* pada LBKS *non chipping* relatif sama dengan pada LBKS *chipping*. Umur optimum LBKS untuk pertumbuhan dan perkembangan *O. rhinoceros* diperkirakan 8 bulan dan maksimum 26 bulan.

Kata Kunci: Kelapa sawit, LBKS, *Oryctes rhinoceros*, pelapukan

Abstract

Oryctes rhinoceros Linnaeus (Coleoptera: Scarabaeidae) is one of the main pests of oil palm, attacking immature plants (IP) and mature plants (MP). This pest attack increases along with the widespread replanting of oil palm and the abundance of oil palm trunk waste (OPTW). This study aimed to determine the effect and relationship between the composting rate of OPTW and the population of *O. rhinoceros*, as well as various influencing factors. The study was conducted in oil palm plantations blocks namely 14a, 17b, 20a, and 21a which are owned by PT Inti Indosawit Subur (Asian Agri) and SP-6, in Mekar Jaya Village, Pelalawan Regency, Riau Province, from February to March 2022. Secondary data on the incidence of *O. rhiniceros* infestation were obtained from PT Inti Indosawit Subur (Asian Agri). Observations on the physical conditions and composting rate of OPTW as well as the *O. rhinoceros* population were carried out on 33 samples of OPTW. The samples were taken at random with purposive sampling method at replanting areas of oil palm plantations. Anova RCBD was applied to determine the effect of the OPTW old on the population of *O. rhinoceros*. The $t\alpha_{0.05}$ test was applied to determine the average difference of *O. rhinoceros* population between OPTW types. Multiple linear regression analysis was applied to determine the effect and relationship between various factors on the composting rate of OPTW and the population of *O. rhinoceros*. Second order polynomial regression analysis was applied to determine the suitable old of OPTW as a breeding site for *O. rhinoceros*. The results showed that age, composting rate, and type of OPTW had a significant effect (53.10%) to and strongly correlated (r = 0.729) with the *O. rhinoceros* population. The age and type of OPTW were negatively correlated, while the composting rate of OPTW was positively correlated with the *O. rhinoceros* population. Meanwhile, the age and type of OPTW and the population of *O. rhinoceros* had a significant effect (80.60%) to and a very strong positive correlation (r=0.898) with the composting rate of OPTW. The population of *O. rhinoceros* in non chipping OPTW was relatively similar with the chipping OPTW. The optimum OPTW old for growth and development of *O. rhinoceros* was approximately 8 months and 26 months for the maximum one.

Keywords: Composting, OPTW, oil palm, *Oryctes rhinoceros*