

The Effect of Various Artificial Diet Formulations on the Biology of the Oil Palm
Pollinating Insect *Elaeidobius kamerunicus*

Oleh: Rizma Dyah Pratiwi

Pembimbing: R. R. Rukmowati Brotodjodjo

ABSTRAK

Elaeidobius kamerunicus Faust (Coleoptera: Curculionidae) merupakan serangga penyerbuk utama kelapa sawit yang keberadaannya sangat bergantung pada bunga jantan (spikelet) sebagai sumber pakan dan tempat berkembang biak. Keterbatasan spikelet mendorong perlunya pengembangan pakan buatan sebagai alternatif pemeliharaan di laboratorium. Penelitian ini bertujuan mengevaluasi pengaruh berbagai formulasi pakan buatan terhadap biologi *E. kamerunicus*, meliputi kelangsungan hidup, ukuran imago dan rostrum, serta daya tarik pakan. Analisis data dilakukan menggunakan Kaplan-Meier dan *Anova One Way* dilanjutkan uji Tukey HSD. Hasil menunjukkan perlakuan bahan dasar + kairomix menghasilkan *mean survive time* tertinggi sebesar 7.3 ± 2.88 hari dan median 5.0 ± 0.25 hari. Analisis Kaplan-Meier menunjukkan perbedaan nyata antar perlakuan (Chi-square = 32.505; df = 6; $P < 0,01$) dengan kurva ketahanan hidup terpanjang mencapai 33 hari. Ukuran *E. kamerunicus* betina terdapat perbedaan yang nyata antar perlakuan, pada perlakuan bahan dasar + kairomix memiliki ukuran yang panjang yaitu 3.07 ± 0.02 mm, sedangkan jantan tidak terdapat perbedaan yang nyata antar perlakuan. Ukuran rostrum *E. kamerunicus* jantan terdapat perbedaan yang nyata antar perlakuan, *E. kamerunicus* yang diberi perlakuan kontrol memperoleh ukuran yang paling panjang yaitu 0.59 ± 0.00 mm, sedangkan *E. kamerunicus* betina tidak terdapat perbedaan yang nyata. Perlakuan bahan dasar + kairomix juga menunjukkan daya tarik tertinggi, khususnya pada individu jantan sebesar 14.50 ± 3.88 dengan persentase ketertarikan jantan 52% dan betina 48%. Disimpulkan bahwa formulasi pakan bahan dasar + kairomix merupakan perlakuan paling optimal dalam meningkatkan kelangsungan hidup dan daya tarik *E. kamerunicus*, sehingga berpotensi sebagai alternatif pengganti spikelet sawit.

Kata Kunci: *Bacillus cereus*; *Bacillus subtilis*; *Elaeidobius kamerunicus*; Pakan Buatan

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ABSTRACT

Elaeidobius kamerunicus Faust (Coleoptera: Curculionidae) is the main pollinator of oil palm, whose existence is highly dependent on male flowers (spikelets) as a source of food and a place to breed. The limited availability of spikelets necessitates the development of artificial feed as an alternative for maintenance in the laboratory. This study aimed to evaluate the effect of various artificial feed formulations on the biology of *E. kamerunicus*, including survival, imago and rostrum size, and feed attractiveness. Data analysis was performed using Kaplan-Meier and One-Way ANOVA followed by Tukey HSD test. The results showed that the basic ingredients + kairomix treatment produced the highest mean survival time of 7.3 ± 2.88 days and a median of 5.0 ± 0.25 days. Kaplan-Meier analysis showed a significant difference between treatments (Chi-square = 32.505; df = 6; $P < 0.01$) with the longest survival curve reaching 33 days. There were significant differences in the size of female *E. kamerunicus* between treatments. The treatment with basic ingredients + kairomix had the longest size, namely 3.07 ± 0.02 mm, while there were no significant differences between treatments for males. There were significant differences in the rostrum size of male *E. kamerunicus* between treatments. *E. kamerunicus* given the control treatment had the longest size, namely 0.59 ± 0.00 mm, while there were no significant differences in female *E. kamerunicus*. The basic ingredient + kairomix treatment also showed the highest attractiveness, particularly in males, at 14.50 ± 3.88 with a male attraction percentage of 52% and a female attraction percentage of 48%. It was concluded that the basic ingredients + kairomix feed formulation was the most optimal treatment in increasing the survival and attractiveness of *E. kamerunicus*, thus having the potential as an alternative to palm spikelets.

Keywords: Artificial diet; *Bacillus cereus*; *Bacillus subtilis*; *Elaeidobius kamerunicus*