Pengaruh Fermentasi Palm Kernel Meal (PKM) dan Sampah Organik terhadap Pertumbuhan Larva Black Soldier Fly (Hermetia illucens) = Effects of Fermentation Palm Kernel Meal (PKM) and Organic Waste on the Growth of Black Soldier Fly Larvae (Hermetia illucens)

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Abstrak

Limbah industri kelapa sawit Palm Kernel Meal (PKM) dan sampah organik mengandung bahan organik yang tinggi namun belum dimanfaatkan dengan optimal. Pengelolaan sampah yang baik harus dilakukan dengan daur ulang sampah organic. Oleh karena itu, diperlukan solusi berupa biokonversi menggunakan larva Black Soldier Fly (Hermetia illucens) dengan penambahan perlakuan fermentasi untuk mengoptimalkan proses biokonversi. Penelitian ini bertujuan untuk menganalisis pengaruh fermentasi PKM dan sampah organik terhadap pertumbuhan larva Black Soldier Fly (BSF); dan kandungan nutrisi larva BSF. Larva BSF berusia 6 hari (6-DOL) dipelihara pada media pertumbuhan dengan lima perlakuan berbeda, yaitu campuran limbah PKM dan sampah organik fermentasi dan tanpa fermentasi, Analisis data yang digunakan adalah uji normalitas Shapiro-Wilk dan uji homogenitas Levene’s test, dilanjutkan dengan uji ANOVA dengan derajat kepercayaan =0,05. Hasil penelitian diperoleh campuran limbah dengan fermentasi efektif digunakan sebagai media pertumbuhan larva BSF dalam meningkatkan kelangsungan hidup, konsumsi pakan, indeks reduksi limbah, dan kandungan nutrien berupa protein dan lemak yang tinggi. Sedangkan campuran limbah tanpa fermentasi efektif dalam meningkatkan biomassa larva dan efisiensi konversi pakan. Hasil analisis data menunjukkan penambahan perlakuan fermentasi PKM dan sampah organik sebagai media pertumbuhan tidak berpengaruh signifikan terhadap pertumbuhan larva BSF. Penambahan fermentasi PKM dan sampah organik berpengaruh terhadap kandungan nutrisi larva BSF. .....Palm oil industrial waste Palm Kernel Meal (PKM) and organic waste contain high organic matter but have not been utilized optimally. Good waste management must be done by recycling biowaste. Therefore, we need a solution, namely by bioconversion using Black Soldier Fly (Hermetia illucens) larvae with the addition of fermentation treatment to optimize this bioconversion process. This research aims to analyze the effect of PKM and organic waste fermentation on the growth of Black Soldier Fly (BSF) larvae and nutritional content of BSF larvae. BSF larvae aged 6 days (6-DOL) were maintained on the feed media with five different treatments, namely a mixture of PKM and organic waste fermented and unfermented. Data analysis used was the Shapiro-Wilk test of normality and the Levene's test of homogeneity, continued with ANOVA test with a degree of confidence =0.05. The results of research showed fermented waste mixture was effectively used as a growth media for BSF larvae in increasing survival rate of BSF larvae, feed consumption rate, waste reduction index, and high nutrient content namely protein and lipid. While the unfermented waste mixture was effectively used as a growth medium for BSF larvae in increasing the biomass of BSF larvae and efficiency conversion of ingested food. The results of data analysis showed that the addition of PKM and organic waste fermentation treatment as a growth medium had no significant effect on the growth of BSF larvae. The addition of PKM and organic waste fermentation affected the nutritional content of BSF larvae.