

**BIOKONVERSI LIMBAH TAPAI SINGKONG
MENGUNAKAN LARVA LALAT TENTARA HITAM
(*Hermetia illucens* L.)**

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ABSTRAK

Limbah tapai singkong merupakan salah satu limbah yang dapat mencemari lingkungan dan berpotensi merusak ekosistem. Larva *H. illucens* diketahui memiliki kemampuan untuk mengkonversi limbah organik menjadi biomassa yang berpotensi dijadikan pakan ternak. Tujuan dari penelitian ini untuk mengetahui pertumbuhan dan waktu perkembangan larva *H. illucens* pada media limbah tapai serta efisiensi konversi limbah tapai menjadi biomassa oleh larva *H. illucens*. Metode penelitian yang dilakukan yaitu 100 ekor larva berusia 3 hari diberi pakan ayam sebagai kontrol, tapai singkong matang, dan tapai singkong fermentasi (30g/3 hari sekali dan 120g/sekali pemberian). Setiap perlakuan dilakukan 4 kali pengulangan. Data yang diperoleh dianalisis dengan *one way* ANOVA apabila terjadi pengaruh yang signifikan dilakukan uji lanjut Duncan dengan taraf signifikansi 5%. Hasil penelitian menunjukkan perlakuan tapai singkong fermentasi 120g/sekali pemberian menghasilkan nilai mortalitas tertinggi yaitu 40,5%. Biomassa tertinggi didapatkan pada perlakuan tapai singkong matang tinggi yaitu sebesar 1,43g. ECD paling tinggi didapatkan pada perlakuan tapai singkong matang yaitu 50,95%. WRI tertinggi didapatkan pada perlakuan tapai singkong matang 120g/sekali pemberian yaitu 26,04%. Kesimpulan dari penelitian ini pada perlakuan tapai singkong matang menghasilkan mortalitas, biomassa, WRI dan ECD yang paling optimal dibandingkan perlakuan lainnya.

Kata kunci: biokonversi, *Hermetia illucens*, limbah tapai.

BIOCONVERSION OF CASSAVA TAPAI WASTE USING BLACK SOLDIER FLY (*Hermetia illucens*) LARVAE

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ABSTRACT

Cassava tapai waste is one of the wastes that can pollute the environment and has the potential to damage the ecosystem. *H. illucens* larvae are known to have the ability to convert around 20% of organic waste into biomass which has the potential to be used as animal feed. This study aimed to determine the growth and development time of *H. illucens* larvae in tapai waste media and the conversion efficiency of tapai waste into biomass by *H. illucens* larvae. The research method used was 100 3-day-old larvae fed chicken as a control, cooked cassava tapai, and fermented cassava tapai (30g/3 days and 120g/one feed). Each treatment was repeated 4 times. The data obtained were analyzed by one-way ANOVA if there was a significant effect, Duncan's further test was carried out with a significance level of 5%. The results showed that the fermented cassava tapai treatment of 120 g/one serving resulted in the highest mortality value of 40.5%. The highest biomass was obtained in the treatment of ripe cassava tapai 120g/once high, which was 1.43g. The highest ECD was found in the treatment of ripe cassava tapai 120g/one-time administration, namely 50.95%. The highest WRI was obtained in the treatment of ripe cassava tapai 120g/one-time administration, namely 26.04%. The conclusion of this study in the treatment of ripe cassava tapai 120 g / once feeding resulted in the most optimal mortality, biomass, WRI , and ECD compared to other treatments.

Keywords: bioconversion, *Hermetia illucens*, tapai.