

## ABSTRAK

Fadlullah, Jauhari, 2022, **PENGGUNAAN LARVA *BLACK SOLDIER FLY* SEBAGAI BIOKONVERSI SAMPAH ORGANIK DAN KOTORAN AYAM MENJADI KOMPOS** Fakultas Teknik Universitas PGRI Adi Buana Surabaya.

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Pertambahan penduduk berakibat munculnya permasalahan lingkungan. Salah satu permasalahan lingkungan adalah sampah sayur sisa makanan. Alternatif pengolahan sampah organik sayur menggunakan *black soldier fly* (BSF) sebagai biokonversi kompos dengan efisiensi sekitar 75-80%. Tujuan penelitian untuk mengetahui pengaruh penambahan feses ayam terhadap kualitas kompos dan pengurangan sampah organik. Jenis penelitian ini menggunakan penelitaian eksperimen. Penelitian dilakukan dalam skala laboratorium dengan menggunakan reaktor dengan bervolume 2,5 liter. Sampah organik organik sayur menggunakan sayur bayam dan kangkung dengan reaktor masing-masing 1 kg, maggot 400 gram, dan feses ayam yang divariasikan yaitu R control (250 gram), R1 ( 0 gram), R2 (250 gram), R3 (400 gram), R4 (550 gram ) dan R5 (700 gram). Pelaksanaan biokonversi sampah dilakukan selama 10-14 hari. Hasil penelitian variasi pada R5, BSF efektif untuk mengolah sampah sayur dan kotoran ayam, menghasilkan kompos dengan parameter fisik akhir pH 7, suhu 28° C, dan kadar air 20.94 %. Kadar C/N, N, P dan K sesuai SNI 19-7030-2004, yaitu kadar C/N 10.42, N 3.63, K 10.16 dan P 4.14. semakin banyak feses ayam yang ditambahkan semakin tinggi kadar P dan K, semakin kecil kadar C/N. Nilai reduksi sampah (WRI) R5, yaitu 6.81 sebagai reaktor yang paling optimum.

Kata Kunci : Sampah Sayur, Kotoran Ayam, *Black Soldier Fly* , Kompos

## **ABSTRACT**

Fadlullah, Jauhari, 2022 **THE USE OF *BLACK SOLDIER FLY* LARVA AS BIOCONVERSION OF ORGANIC WASTE AND CHICKEN MANURE INTO COMPOST** Faculty of Engineering, PGRI Adi Buana University, Surabaya.

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Population growth results in the emergence of environmental problems. One of the environmental problems is vegetable waste left over from food. An alternative to organic vegetable waste processing is using black soldier fly (BSF) as compost bioconversion with an efficiency of around 75-80%. The research objective was to determine the effect of adding chicken feces on compost quality and reducing organic waste. This type of research uses experimental research. The research was conducted on a laboratory scale using a reaktor with a volume of 2.5 liters. Vegetable organic waste uses spinach and kale with a reaktor of 1 kg each, maggot 400 grams, and chicken feces which are varied, namely R control (250 grams), R1 (0 grams), R2 (250 grams), R3 (400 grams ), R4 (550 grams ) and R5 (700 grams). The implementation of waste bioconversion is carried out for 10-14 days. The results of the various research on R5, and BSF are effective for processing vegetable waste and chicken manure, producing compost with final physical parameters pH 7, temperature 28o C, and moisture content 20.94%. C/N, N, P, and K levels according to SNI 19-7030-2004, namely C/N 10.42, N 3.63, K 10.16, and P 4.14. The more chicken feces added the higher the P and K levels, and the lower the C/N levels. Waste reduction value (WRI) R5, which is 6.81 is the most optimum reaktor.

**Keyword :** Vegetable Organic Waste, Chicken Feces, *Black soldier fly*, Compost