

ABSTRAK

Indra Nugroho Aprilianto
Mereduksi Sampah Organik Rumah Tangga Menggunakan Media *Black Soldier Fly* (BSF) Tahun 2025
xvi + 72 Halaman + 9 Tabel + 8 Lampiran

Kota Surabaya sebagai salah satu kota metropolitan di Indonesia menghadapi tantangan dalam pengelolaan sampah. Dinas Lingkungan Hidup Kota Surabaya mengatakan jumlah timbulan sampah di Kota Surabaya mencapai 1600 ton per hari, dengan komposisi terbesar berupa 60% sampah organik dan sisanya sampah anorganik. Penelitian ini bertujuan untuk menganalisis efektivitas mereduksi sampah organik menggunakan maggot *Black Soldier Fly* (BSF) sebagai solusi inovatif dalam pengelolaan sampah organik. Keunggulan dari maggot BSF adalah kemampuannya untuk beradaptasi dengan berbagai jenis sampah, serta proses pemeliharaannya yang relative sederhana dan biaya rendah.

Jenis penelitian ini adalah penelitian eksperimen *prepost-test*. Variabel penelitian ini adalah jenis sampah organik yaitu kering daun kering, sayuran dan buah-buahan. Obyek penelitian adalah sampah organik kering daun kering, sampah basah sayuran dan buah-buahan. Desain penelitian menggunakan *One Group Pretest-Posttest Design*. Analisis data menggunakan uji normalitas *One Way Anova* dan dilanjutkan uji *Post-Hoc*.

Hasil penelitian menunjukkan bahwa penggunaan maggot *Black Soldier Fly* (BSF) dalam mereduksi sampah organik rumah tangga bervariasi tergantung pada jenis sampah yang digunakan. Suhu media rerata 30°C, 28,6°C, 29,5°C dan kelembaban media 10%, 33,3%, 45%, namun rerata pH media cenderung asam <5, dan efektivitas reduksi sampah sebesar 13,1% untuk perlakuan sampah organik buah-buahan.

Kesimpulan pada penelitian ini adalah maggot BSF lebih efektif digunakan pada sampah organik dengan kadar air tinggi seperti buah-buahan, sedangkan pada sampah organik kering daun kering dan sayuran efektivitasnya sangat rendah. Oleh karena itu, disarankan penggunaan sampah organik dengan kadar air seimbang seperti nasi basi dan pepaya.

Kata Kunci : Maggot *Black Soldier Fly* (BSF), Pengelolaan Sampah Organik, Efektivitas Reduksi Sampah

Daftar bacaan : 42 jurnal + 1 peraturan

ABSTRACT

Indra Nugroho Aprilianto
REDUCING HOUSEHOLD ORGANIC WASTE USING *BLACK SOLDIER FLY*
(BSF) MAGGOT IN 2025
xvi + 72 Pages + 9 Tables + 8 Appendices

The city of Surabaya, as one of the metropolitan cities in Indonesia, faced challenges in waste management. The Environmental Agency of Surabaya stated that the amount of waste generated in Surabaya reached 1,600 tons per day, with the largest composition consisting of 60% organic waste and the remainder being inorganic waste. This study aimed to analyze the effectiveness of reducing organic waste using Black Soldier Fly (BSF) maggots as an innovative solution for organic waste management. The advantage of BSF maggots was their ability to adapt to various types of waste, as well as their relatively simple maintenance process and low cost.

This type of research was a pretest-posttest experimental study. The research variables were types of organic waste, namely dry leaves, vegetables, and fruits. The research objects were dry organic waste (dry leaves), and wet organic waste (vegetables and fruits). The research design used was a One Group Pretest-Posttest Design. Data analysis employed normality tests, One Way ANOVA, followed by Post-Hoc tests.

The results showed that the use of Black Soldier Fly (BSF) maggots to reduce household organic waste varied depending on the type of waste used. The average media temperature was 30°C, 28.6°C, and 29.5°C, with media humidity at 10%, 33.3%, and 45%; however, the average media pH tended to be acidic, below 5, and the waste reduction effectiveness was 13.1% for the treatment using fruit organic waste.

The conclusion of this study was that BSF maggots were more effective when used on organic waste with a high water content such as fruits, while the effectiveness was very low on dry organic waste like dry leaves and vegetables. Therefore, it was recommended to use organic waste with balanced water content, such as leftover rice and papaya.

Keywords: *Black Soldier Fly* (BSF) Maggots, Organic Waste Management, Effectiveness of Waste Reduction

References : 42 Journals + 1 Regulations