PENGARUH VARIASI BERAT TELUR PER *BIOPOND* DAN METODE PENGERINGAN TERHADAP PERTUMBUHAN DAN KUALITAS MAGGOT *BLACK SOLDIER FLY* (*Hermetia illucens L.*)

TESIS

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ABSTRAK

Black Soldier Fly atau *Hermetia illucens L.* merupakan serangga yang efektif dalam biokonversi limbah organik menjadi produk bernilai ekonomi, seperti maggot kering dan minyak maggot. Penelitian ini bertujuan mengevaluasi pengaruh variasi berat telur per biopond dan metode pengeringan terhadap pertumbuhan maggot BSF dan kualitas nutrisinya. Penelitian dilakukan dalam dua tahap. Tahap pertama menguji lima variasi berat telur (3g, 4g, 5g, 6g, dan 7g) terhadap pertumbuhan maggot, efisiensi konsumsi pakan, dan indeks reduksi limbah. Hasil terbaik diperoleh pada perlakuan 3g/biopond dengan berat basah maggot 5.250 ± 397,4 g, berat kering 20,84 ± 0,21 g, efisiensi konsumsi pakan 92,3%, dan indeks reduksi limbah 5,40%. Tahap kedua mengevaluasi lima metode pengeringan: *microwave*, sangrai kopi, sangrai kompor (dengan dan tanpa pasir), dan matahari. Pengeringan dengan *microwave* menghasilkan maggot kering berkualitas terbaik dengan kadar air terendah (3,39%), warna cokelat keemasan, serta kandungan protein tinggi (28,51%) dan lemak (51,47%). Sebaliknya, metode penjemuran matahari menghasilkan kualitas paling rendah. Profil asam lemak menunjukkan dominasi asam laurat pada minyak maggot yang dikeringkan menggunakan *microwave,* menandakan potensi tinggi sebagai sumber nutrisi alternatif.

kata kunci: Berat telur, *Black Soldier Fly.* Maggot, minyak maggot, pengeringan.

ABSTRAK

The Black Soldier Fly *(Hermetia illucens L.)* is an insect highly effective in the bioconversion of organic waste into economically valuable products such as dried maggots and maggot oil. This study aimed to evaluate the effects of varying egg weights per biopond and different drying methods on BSF maggot growth and nutritional quality. The research was conducted in two stages. The first stage examined five egg weight variations (3g, 4g, 5g, 6g, and 7g) in relation to maggot growth, feed consumption efficiency, and waste reduction index. The best results were achieved with the 3g/biopond treatment, yielding a wet maggot weight of 5,250 ± 397.4 g, dry weight of 20.84 ± 0.21 g, feed conversion efficiency of 92.3%, and waste reduction index of 5.40%. The second stage evaluated five drying methods: microwave, coffee roasting, stove roasting (with and without sand), and sun drying. Microwave drying produced the highest quality dried maggots, characterized by the lowest moisture content (3,39%), golden brown color, and high levels of protein (28,51%), fat (51,47%). In contrast, sun drying resulted in the lowest quality. Fatty acid profile analysis revealed a high lauric acid content in maggot oil from the microwave drying method, indicating strong potential as an alternative nutritional source.

keywords: Black Soldier Fly, drying method, egg weight, maggot, maggot oil.