

KUALITAS FISIK DAN BIOLOGI PUPUK ORGANIK CAIR DENGAN STARTER *Pseudomonas* sp. LS3K YANG DIEKSTRAKSI DARIHASIL FERMENTASI EKSKRETA AYAM PETELUR

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INTISARI

Penelitian ini bertujuan untuk mengetahui kualitas fisik dan biologi pupuk organik cair dengan *starter* bakteri *Pseudomonas* sp. LS3K yang diekstraksi dari hasil fermentasi ekskreta ayam petelur. Penelitian dilakukan dengan mengekstrak campuran ekskreta dan onggok, pengembangbiakkan kultur *Pseudomonas* sp. LS3K dan EM4, kemudian pembuatan pupuk organik cair dari hasil ekstraksi campuran ekskreta dan onggok dengan penambahan bakteri *starter* secara aerobik. Perlakuan pada penelitian ini yaitu tanpa penambahan bakteri *starter* sebagai kontrol (P0), penambahan *starter* komersial EM4 (P1), penambahan *starter Pseudomonas* sp. LS3K (P2). Kualitas fisik pupuk organik cair diamati dengan pengamatan suhu, pH, *Total Solid*, *Total Fixed Solid*, dan *Total Volatile Solid*. Kualitas biologi pupuk organik cair dievaluasi melalui uji tumbuh tanaman meliputi tinggi tanaman, jumlah daun, panjang akar, berat basah panen, dan berat kering. Hasil dari penelitian menunjukkan penggunaan *starter Pseudomonas* sp. LS3K memberikan pengaruh nyata ($P < 0.05$) terhadap kandungan jumlah padatan yaitu *Total Solid* ($26,76 \pm 5,71^b$), *Total Fixed Solid* ($7,70 \pm 0,49^b$), dan *Total Volatile Solid* ($19,06 \pm 5,22^b$), namun tidak memberikan pengaruh nyata terhadap *Settleable Solid*. Pemberian pupuk organik cair dengan *starter Pseudomonas* sp. LS3K tidak memberikan pengaruh nyata terhadap pertumbuhan tanaman sawi. Berdasarkan hasil penelitian dapat disimpulkan bahwa penggunaan *starter Pseudomonas* sp. LS3K dapat digunakan sebagai alternatif dalam penurunan padatan limbah organik sebagai pembuatan pupuk organik cair.

Kata kunci: Ekskreta, Kualitas biologi, Kualitas fisik, *Pseudomonas* sp. LS3K, Pupuk organik cair.

**PHYSICAL AND BIOLOGICAL QUALITY OF LIQUID ORGANIC
FERTILIZER USING *Pseudomonas* sp. LS3K
EXTRACTED FROM FERMENTED
LAYING HEN EXCRETA**

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ABSTRACT

This study aims to determine the quality of physic and biology of liquid organic fertilizer with bacterial starter *Pseudomonas* sp. LS3K extracted from the fermentation of laying hen excreta. The research was conducted by extracting a mixture of excreta and onggok, culture breeding of *Pseudomonas* sp. LS3K and EM4, then making liquid organic fertilizer from the extraction of excreta and onggok mixture with the addition of starter bacteria aerobically. The treatments in this study were without the addition of starter bacteria as control (P0), the addition of EM4 commercial starter (P1), the addition of *Pseudomonas* sp. LS3K (P2). The physical quality of liquid organic fertilizer was observed by observing temperature, pH, *Total Solid*, *Total Fixed Solid*, and *Total Volatile Solid*. The biological quality of liquid organic fertilizer was evaluated through plant growth tests including plant height, number of leaves, root length, harvest wet weight, and dry weight. The results of the study showed the use of *Pseudomonas* sp. LS3K gave a significant effect ($P < 0.05$) on the content of *Total Solid*. Namely *Total Solid* ($26,76 \pm 5,71^b$), *Total Fixed Solid* ($7,70 \pm 0,49^b$), and *Total Volatile Solid* ($19,06 \pm 5,22^b$), but did not have a significant effect on *Settleable Solid*. The application of liquid organic fertilizer with starter *Pseudomonas* sp. LS3K did not give a real influence on the growth of mustard plants. Based on the results of the study it can be concluded that the use of starter *Pseudomonas* sp. LS3k starter can be used as an alternative in reducing organic waste solids as the manufacture of liquid organic fertilizer.

Keyword : Biological quality, Excreta, Liquid organic fertilizer, Physical quality *Pseudomonas* sp. LS3K.