

## Pengolahan sampah plastik rumah tangga yang berkelanjutan (kajian di RT 003 Sukajaya Bogor) = Sustainable treatment of household plastic waste (a study in RT 003 Sukajaya Bogor)

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### Abstrak

[<b>ABSTRAK</b><br>

Plastik walaupun sangat bermanfaat dalam kehidupan sehari-hari tetapi akan menyebabkan permasalahan lingkungan yang serius jika tidak diolah dengan baik, Sampai saat ini belum ada metode yang efektif untuk digunakan dalam mengurai sampah plastik dan masih dilakukan penelitian-penelitian lebih lanjut untuk mencari metode dan teknologi yang tepat. Tujuan dari penelitian ini adalah 1). Mengukur potensi *Trichoderma* sp. dalam mengurai sampah plastik rumah tangga. 2) Menentukan jenis sampah plastik rumah tangga yang dapat diurai oleh *Trichoderma* sp. 3) Menentukan nilai ekonomi (keuntungan) dari pengolahan sampah plastik di masyarakat. 4) Menentukan persepsi dan minat penerimaan masyarakat sukajaya terhadap pengolahan sampah dengan teknik komposting di RT 003. Metode penelitian adalah eksperimen komposting terhadap 5 kelompok plastik 3 spesies *Trichoderma* sp. yaitu *Harzianum*, *Pseudokoningii*, dan *Hamatum* yang diinkubasi selama 3 bulan. Analisis ekonomi dengan Benefit-Cost Ratio (BCR) terhadap pengolahan sampah plastik. Melakukan penyebaran kuesioner pada masyarakat Sukajaya untuk persepsi, perilaku, dan sikap. Hasil penelitian pada eksperimen komposting secara penampakan permukaan tidak terjadi perusakan, berdasarkan tes FTIR terjadi sedikit perubahan spektrum resapan gelombang pada plastik PET. Sedangkan berdasarkan distribusi frekuensi sekitar lebih dari 90% persepsi masyarakat sangat baik terhadap pengolahan sampah, 90% perilaku masyarakat melakukan penanganan sampah plastik dengan baik, 60% melakukan upaya pengurangan sampah plastik dan 53.6% memberikan edukasi terhadap keluarga mereka. 86% masyarakat bersedia melakukan pemilahan sampah tetapi 90% masyarakat menyerahkan pengolahan sampah pada petugas kebersihan. Sekitar 60% masyarakat lebih menerima pengomposan dan daur ulang sampah plastik sebagai metode pengumpulan sampah dibandingkan dengan metode pirolisis (40%). Berdasarkan analisis ekonomi didapati 1,67 nilai BCR untuk pengolahan sampah plastik dengan menggunakan sistem TPS 3R, 3,00 mencacah sampah plastik menjadi biji plastik, dan 1,15 untuk metode pirolisis. Berdasarkan studi ini pengelolaan sampah plastik yang berkelanjutan di RT adalah dengan penerapan 3R di TPS dengan peningkatan fasilitas yaitu pencacahan plastik.

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<b>ABSTRACT</b><br>

Plastic although very useful in our daily lives but will cause serious environmental problems if not treated properly, until now there has been no effective method to degrade plastic waste and still do further research to find the right methods and technologies. The goal of this study is 1). Measuring the potential of *Trichoderma* sp. in degrading household plastic waste . 2) Determine the type of household plastic waste that can be degrade by *Trichoderma* sp. 3) Determine the economic value (profit) from the plastic waste treatment in the community. 4) Determine the perceptions and interests of public acceptance in Sukajaya for wastecomposting

techniques . The method is experimental composting to 5 groups of plastic, 3 species of *Trichoderma* sp. which is *harzianum*, *pseudokoningii*, and *hamatum* were incubated for 3 months. Economic analysis with the Benefit-Cost Ratio (BCR) for the plastic waste treatment. Distributing questionnaires to the community of Sukajaya for perceptions, behaviors, and attitudes. Result of research composting experiments: there is no surface destruction, but based on FTIR absorption there is no changes on wave spectrum in PET. While based on the frequency distribution, approximately more than 90% very good public perception towards waste treatment, 90% of community's behavior handling well of plastic waste, 60% of plastic waste reduction efforts, and 53.6% provide education for their families. 86% of community are willing to do the sorting of waste but 90% of handing waste to be on the janitor. Approximately 60% of people are more accepting of composting and recycling of plastic waste than pyrolysis method (40%). Based on economic analysis: 1.67 BCR value for plastic waste treatment using the temporary waste dumping system 3R, 3.00 chopping plastic waste into plastic pellets, and 1.15 for pyrolysis method, based on this study the sustainable management of household plastic waste in the residency is by the implementation of 3R at the temporary waste dumping grading system by the instalement of plastic chopper., (key words: Plastic Waste, Composting, *Trichoderma* sp., BCR, SWOT)

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