

ABSTRAK

ANALISA KERAPATAN SPORA TRICHODERMA SP HASIL FERMENTASI ANAEROB TERHADAP KUALITAS KANDUNGAN NPK DALAM PRODUKSI PUPUK ORGANIK CAIR DARI LIMBAH KULIT PISANG

(Liana Aprilayonda, 2024, 68 Halaman, 6 Tabel, 22 Gambar, 4 Lampiran)

Pupuk organik cair adalah pupuk yang bahan bakunya berasal dari proses fermentasi sisa-sisa tumbuhan atau juga limbah yang ada di lingkungan sekitar. *Trichoderma sp* adalah jenis jamur yang memiliki banyak manfaat sebagai bahan pembuatan pupuk cair. Penelitian ini bertujuan untuk menentukan lama waktu fermentasi dan penambahan *Trichoderma sp* yang paling optimum berdasarkan kerapatan spora, menentukan pengaruh penambahan *Trichoderma sp* terhadap parameter NPK pupuk organik cair, dan membandingkan apakah kandungan NPK pupuk sudah memenuhi persyaratan Permentan No. 261/KPTS/SR.310/M/4/2019. Metode pembuatan pupuk organik cair ini dengan proses fermentasi anaerob dari limbah kulit pisang dan daun singkong yang sudah dihaluskan dengan penambahan bioaktivator EM4. Variabel bebas pada penelitian ini yaitu waktu fermentasi 0, 7, 14, 21, 28 hari dan penambahan *Trichoderma sp* 10 gr dan 30 gr. Variabel tetapnya limbah kulit pisang 2 kg, air kelapa tua 4000 ml, daun singkong 1kg, volume EM4 75 ml, dan gula merah 250 gr. Hasil penelitian waktu fermentasi dan variasi penambahan *Trichoderma sp* yang paling optimum terjadi pada hari ke-28 dengan penambahan *Trichoderma sp* 30 gr. Penambahan *Trichoderma sp* tidak mempengaruhi tingginya nilai kandungan NPK pupuk organik cair, analisa terhadap kandungan NPK pupuk organik cair dari limbah kulit pisang, air kelapa, dan daun singkong yang dihasilkan belum memenuhi syarat teknis minima mutu pupuk organik sesuai Keputusan Menteri Pertanian No. 261/KPTS/SR.310/M/4/2019 tentang Persyaratan Teknik Minimal Pupuk Organik, Pupuk Hayati, dan Pembenah Tanah, yaitu dengan kandungan NPK 2-6%.

Kata kunci: Pupuk organik cair, limbah kulit pisang, air kelapa tua, EM4, daun singkong, *Trichoderma sp*.

ABSTRACT

ANALYSIS OF TRICHODERMA SP SPORE DENSITY RESULTING FROM ANAEROBIC FERMENTATION ON THE QUALITY OF NPK CONTENT IN THE PRODUCTION OF LIQUID ORGANIC FERTILIZER FROM BANANA PEEL WASTE

(Liana Aprilayonda, 2024, 68 Pages, 6 Tables, 22 Figures, 4 Attachments)

Liquid organic fertilizer is fertilizer whose raw materials come from the fermentation process of plant remains or waste in the surrounding environment. Trichoderma sp is a type of fungus that has many benefits as an ingredient in making liquid fertilizer. This research aims to determine the optimal fermentation time and addition of Trichoderma sp based on spore density, determine the effect of adding Trichoderma sp on the NPK parameters of liquid organic fertilizer, and compare whether the NPK content of fertilizer meets the requirements of Minister of Agriculture Regulation No. 261/KPTS/SR.310/M/4/2019. This method of making liquid organic fertilizer uses an anaerobic fermentation process from banana peel waste and ground cassava leaves with the addition of EM4 bioactivator. The independent variables in this study were fermentation time 0, 7, 14, 21, 28 days and the addition of Trichoderma sp 10 gr and 30 gr. The fixed variables are 2 kg banana peel waste, 4000 ml old coconut water, 1 kg cassava leaves, 75 ml EM4 volume, and 250 gr brown sugar. The results of research on fermentation time and variations in the addition of Trichoderma sp. The most optimum occurred on the 28th day with the addition of 30 gr of Trichoderma sp. The addition of Trichoderma sp does not affect the high value of the NPK content of liquid organic fertilizer. Analysis of the NPK content of liquid organic fertilizer from banana peel waste, coconut water and cassava leaves produced does not meet the technical requirements for the minimum quality of organic fertilizer in accordance with Decree of the Minister of Agriculture No. 261/KPTS/SR.310/M/4/2019 concerning Minimum Technical Requirements for Organic Fertilizers, Biological Fertilizers and Soil Improvers, namely with an NPK content of 2-6%.

Key words :*Liquid organic fertilizer, banana peel waste, old coconut water, EM4, cassava leaves, Trichoderma sp.*