

INTISARI

Latar Belakang : Peningkatan volume, jenis, dan karakteristik sampah biasa disebabkan oleh pesatnya perkembangan penduduk dan tingkat konsumsi masyarakat yang tinggi. Jenis limbah yang jarang dimanfaatkan oleh masyarakat adalah limbah buah-buahan dan air budidaya ikan lele baik berupa limbah padat maupun cair. Berdasarkan survei pendahuluan oleh peneliti pada pemilik kios buah di Jalan Agrowisata Km.1 Kavling Panas, pemilik warung makan “Pak Sapari” di Jalan Temulawak Dusun Temulawak dan pemilik budidaya ikan lele di Dusun Jabung, limbah buah dan air budidaya ikan lele belum dimanfaatkan secara optimal dengan langsung dibuang pada sekitar pekarangan rumah. Salah satu alternatif dalam mengolah limbah buah-buahan dan air budidaya ikan lele melalui proses fermentasi menjadi pupuk organik cair.

Tujuan : Mengetahui efektivitas lama waktu fermentasi terhadap kadar N P K sesudah dilakukan pengolahan pupuk organik cair dengan pemanfaatan limbah buah dan air budidaya ikan lele.

Metode : Jenis metode penelitian yang digunakan pada penelitian ini adalah *Pre-Experiment* dengan desain *Post Test Only Design*. Penelitian ini dilaksanakan di Dusun Temulawak pada bulan Februari-Maret 2022. Objek penelitian ini adalah limbah buah seperti buah pepaya dan kulit buah pisang kepok serta air limbah budidaya ikan lele. Pengulangan penelitian dilakukan sebanyak 3 kali pada setiap kelompok perlakuan dengan menggunakan variasi lama waktu yaitu fermentasi 16 hari, 19 hari, dan 22 hari.

Hasil : Nilai rerata kadar unsur pada fermentasi 16 hari N: 0,0534%, P: 0,1031%, K: 0,0711%, pada fermentasi 19 hari N: 0,0567%, P: 0,1143%, K: 0,0845%, dan pada fermentasi 22 hari N: 0,0631%, P: 0,1314%, dan K: 0,1021%. Hasil analisis statistik dengan uji *One Way Anova* didapati *p-value* < 0,05 menunjukkan bahwa terdapat perbedaan bermakna pada variasi lama waktu fermentasi 16 hari, 19 hari, dan 22 hari terhadap rerata kadar N P K. Kemudian dilakukan uji *Least Significance Difference* (LSD) menunjukkan bahwa angka selisih tertinggi terdapat pada lama waktu fermentasi 22 hari dengan 16 hari yaitu kadar N: 0,0096667, P: 0,0283833, dan K: 0,0310000.

Kesimpulan : Variasi fermentasi 22 hari merupakan lama waktu yang paling efektif dalam pembuatan pupuk organik cair.

Kata Kunci : Lama waktu fermentasi, Limbah buah, Air budidaya ikan lele, Nitrogen, Phospor, Kalium, Pupuk organik cair

ABSTRACT

Background: The increase in volume, type and characteristics of waste is usually caused by the rapid population growth and the high level of public consumption. The types of waste that are rarely used by the community are fruit waste and catfish culture water, both in the form of solid and liquid waste. Based on a preliminary survey by this study at fruit stall owners on Agrowisata street Km.1 Kavling Panas, owner of a food stall “Pak Sapari” on Temulawak street, Temulawak village and owner of catfish farming in Jabung village, fruit waste and water for catfish culture water have not been utilized properly by directly disposed around the yard. An alternative in treating fruit waste and catfish culture water is through a fermentation process into liquid organic fertilizer.

Objective: Knowing the effectiveness of the length of time fermentation on the levels of N P K after processing liquid organic fertilizer with the use of fruit waste and catfish culture water.

Methods: The type of research method used in this study is Pre-Experiment with Post Test Only Design. This research was carried out in Temulawak village in February-March 2022. The object of this research is fruit waste such as papaya fruit and kepok banana peels and wastewater from catfish farming. This research was carried out 3 times in each treatment group using variations in the length of time, namely 16 days, 19 days, and 22 days of fermentation.

Results : The average value of elemental content in 16 days of fermentation N: 0.0534%, P: 0.1031%, K: 0.0711%, at 19 days of fermentation N: 0.0567%, P: 0.1143%, K: 0.0845%, and at 22 days of fermentation N: 0.0631%, P: 0.1314%, and K: 0.1021%. The results of statistical analysis using the One Way Anova test found p-value < 0.05 indicating that there was a significant difference in the variation of the fermentation time of 16 days, 19 days, and 22 days on the average level of N P K. Then the Least Significance Difference (LSD) test was carried out showing that the highest difference was found in the length of fermentation time 22 days with 16 days, namely levels of N: 0.0096667, P: 0.0283833, and K: 0.0310000.

Conclusion : The 22 days variant of fermentation is the most effective length of time in the manufacture of liquid organic fertilizer.

Keywords: Fermentation time, Fruit waste, Catfish culture water, Nitrogen, Phosphorus, Potassium, Liquid organic fertilizer