

DYNAMICS OF N, P, AND K ELEMENTS IN THE PROCESS OF MAKING ORGANIC FERTILIZER FROM TRADITIONAL MARKET VEGETABLE AND FRUIT WASTE WITH A STACKED BUCKET TECHNIQUE

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ABSTRACT

Organic wastes from vegetables and fruits in traditional markets have not been managed properly, and even tend to be pollutants for the surrounding environment. The wastes have the potential to be used as raw materials for producing organic fertilizer. This study aimed to determine the nutrient content of N, P, and K in leachate and the remaining compost solids from the composting process with the Stacked Bucket Technique, to determine the quality of liquid and solid organic fertilizer resulting from making organic fertilizer with the Stacked Bucket Technique and to find out the best liquid organic fertilizer (POC) harvest time to get the highest N, P, and K nutrient content in making POC with the Stacked Bucket Technique from vegetable and fruit organic waste. The methods used are qualitative descriptive with direct observation in the field and in the producing process of liquid organic fertilizer and quantitative methods with laboratory analysis. The parameters observed included pH, and C-organic levels, N-total, P₂O₅, and K₂O concentrations in the POC. The data obtained were then presented in tabular form and compared with the threshold values in the Decree of the Minister of Agriculture of the Republic of Indonesia No. 261 / KPTS / SR.310 / M / 4/2019 concerning Minimum Technical Requirements for Organic Fertilizer. The results showed the best POC pH in the 8th week of harvest, which was (5,80); C-organic was highest in the 8th (2,60%); the highest N-total in the 10th week (0,18%); P₂O₅ was highest in the 10th week (0,0051%); and K₂O was highest in the 10th week (0,020%). Based on these results, the best POC that produced the highest N-total + P₂O₅ + K₂O values was in the 10th week (0.204%), however this amount is still below the Minimum POC requirement.

Keywords: *organic waste, POC, stacked bucket, N, P, and K elements*