

## EFFECTIVENESS OF LIQUID ORGANIC FERTILIZER PREPARED WITH RUBBER FACTORY PROCESSING EFFLUENT

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Rubber factory processing effluent (RFPE) is a liquid waste generated in rubber factories in large volumes. Direct disposal of RFPE into the environment created different issues. Hence, a study was conducted in two parts to assess the potential of RFPE to be used as a base of liquid organic fertilizer (LOF). Different ingredients (*Musa* spp., *Gliricidia*, *Tithonia*, cow dung, rock phosphate, and yeast inoculant) were added in equal quantities to prepare a mixture known as the substrate mixture (SM). Then, RFPE and water were mixed in different ratios with the SM and kept for a sufficient period to allow the fermentation process. Then, the following combinations were tested as the treatments of the first part of the study for different chemical parameters. The experimental design was completely randomized design (CRD) with five treatments of LOFs as follows: T1 (SM + 100% water), T2 (SM + 100% RFPE), T3 (SM + 25% RFPE + 75% water), T4 (SM + 50% RFPE + 50% water), and T5 (SM + 75% RFPE + 25% water). Results revealed that the T4 treatment exhibited significantly higher ( $p < 0.05$ ) N, P, K, Mg, and OC levels of 0.15%, 0.06%, 0.37%, 0.028%, and 3.43%, respectively. The pH and EC levels of T4 were 7.5 and 7.24 mS cm<sup>-1</sup> respectively, indicating the suitability of LOF. The second part of the study was a pot experiment performed in a randomized complete block design with seven replicates to assess the performance of selected LOFs using *Capsicum annuum* as an indicator plant. Results revealed that the combination of 50% RFPE with 50% water significantly enhanced ( $p < 0.05$ ) plant growth, with increases in both leaf number and plant height. Finally, it concluded that there is potential to use RFPE as a supplement to enhance the quality of LOFs.

**Keywords:** *Capsicum annuum*, Chemical parameters, Liquid waste