

**NUTRIENT CONTENT ANALYSIS OF ORGANIC LIQUID FERTILIZER
PRODUCED BY USING *Salvinia molesta* AND *Azolla pinnata* UNDER THREE
DIFFERENT DIGESTION METHODS**

I.G.A. Thisera^{1*}, V. Vijitha¹ and K. Lasantha²

¹*Department of Biosystems Technology, Faculty of Technology, University of Jaffna*

²*Fruit Crop Research and Development Institute, Horana*

Abstract

Excessive use of chemical fertilizers in agriculture causes several environmental and health problems. Furthermore, organic fertilizers have become an alternative due to the high cost of chemical fertilizers. Therefore, the current study aimed to analyse the nutrient content of organic liquid fertilizer prepared from rapidly growing two plant species such as *Salvinia molesta* and *Azolla pinnata* under three different digestion methods namely, anaerobic digestion, aerobic digestion using aerator and *Trichoderma* digestion. Organic liquid fertilizers produced from both plant species were tested for nutrients like N, P, K, Ca, Mg, and Zn. Data analysis was done by using Statistical Analysis System (SAS version 9.2) software. The results revealed that anaerobic digestion has the ability to extract more amount of nitrogen while *Trichoderma* digestion led to extraction of the highest phosphorus and potassium content. In contrast, the lowest value for nitrogen content was recorded with *Trichoderma* digestion whereas the lowest phosphorus and potassium content was observed under anaerobic digestion. For the extraction of other nutrients like Ca, Mg, and Zn, the compared three methods led to different degree of nutrient extraction. As the comparison of the nutrient extraction efficiency under above mentioned three digestions showed no statistical differences, it can be concluded that special nutrition filtering is not done by any extraction method. Anyhow, *A. pinnata* has shown significantly higher nutrient content compared to *S. molesta*. Therefore, it is possible to produce liquid fertilizer using *A. pinnata* to reduce the cost spent on inorganic fertilizers while conserving the environment.

Keywords: Anaerobic digestion, Chemical fertilizer, Liquid fertilizer, Nutrient content, *Trichoderma* digestion

*Corresponding author: gayumi213@gmail.com