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**Investigation of Chemical Composition and Antifungal Activity of Traditional Organic Liquid Fertiliser****Weediya B.D.M.<sup>1\*</sup>, Godakumbura P.I.<sup>1</sup>, Prashantha M.A.B.<sup>1</sup>, Fernando K.M.E.P.<sup>2</sup>**<sup>1</sup>*Department of Chemistry, University of Sri Jayewardenepura, Sri Lanka*<sup>2</sup>*Department of Botany, University of Sri Jayewardenepura, Sri Lanka**\*buddinidilunika@gmail.com***Abstract**

Today, different types of fertilisers are used around the world in order to obtain optimum plant growth with high yields. However, long term indiscriminate usage of chemical fertilisers has caused adverse effects on the environment and human health. Therefore, farmers all over the world are shifting towards environmental friendly organic liquid fertilisers from synthetic chemical fertilisers. This research study assessed the nutrient contents, physical properties and antifungal activity of the traditional organic liquid fertiliser (TOLF) currently used in traditional paddy and vegetable cultivation in Sri Lanka. It was made of seven types of plant leaves (*Gliricidia sepium*, *Tithonia diversifolia*, *Justicia adhatoda*, *Moringa oleifera*, *Azadirachta indica*, *Plumeria* sp, and *Artocarpus heterophyllus*), cow dung and cow urine fermenting for 14 days. According to the chemical composition analysis, TOLF contains significantly high mean macro and micronutrients capacity in mgL<sup>-1</sup>, N (288.40), K<sub>2</sub>O (843.61), MgO (139.60), Fe (11.77), Zn (0.81), Mn (1.89), Cu (0.20) compared to that of selected chemical fertilizer (Albert's solution) which is on market except P<sub>2</sub>O<sub>5</sub> (66.18) and CaO (97.29). The NPK ratio of TOLF was estimated as 0.03-0.01-0.08 and TOLF was free from heavy metals (Cd and As). The average pH, electrical conductivity and density of TOLF were reported at 29° C as 7.5, 1303.7 μScm<sup>-1</sup> and 1.03 gcm<sup>-3</sup> respectively and composition of TOLF is slightly vary with raw material ratios, method of preparation and environmental conditions. Not only rich in nutrients, foliar type TOLF shows antifungal activity against *Colletotrichum capsici* (78%) and *Magnaporthe oryzae* (98%) which caused in anthracnose disease in chilli and rice blast diseases respectively. Therefore, TOLF can be employed as a substitution instead of chemical fertilizers for paddy and vegetable cultivation.

**Keywords:** Macro nutrients, Micro nutrients, Heavy metals, Antifungal activity