

Acceptability of Liquid Fertilizer Produced from Sewage Sludge in Wastewater Treatment Plants by Sri Lankan Community

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Wastewater recycling is an important resource efficiency pillar in a sustainable city. Several countries are resolving the safe senatorial issue with the expansion of wastewater treatment while introducing a new issue on the handling and disposal of sewage sludge (SS). Hydrothermal carbonization (HTC) is a thermochemical technique for processing high moisture biomass at a specified temperature and autogenous pressure. This study investigates the social acceptability of liquid fertilizer from hydrothermal carbonization of SS (LFHTC) by Sri Lankan community. A questionnaire survey was used to collect relevant data from selected organic fertilizer distributors/sellers, users of organic and chemical fertilizers, and organic food consumers who represent the community after conducting a stakeholder analysis. The purposive sampling method was used. A total of 105 responses were received from 3 categories of respondents. Furthermore, the reasons for accepting or rejecting the LFHTC in the market, as well as the properties that need to be included in LFHTC for commercialization, were explored. The responses were as: 75% of organic fertilizer distributors accept future sales of the LFHTC, 84% of fertilizer users show the acceptance of using LFHTC for their cultivations, and 74% of organic food consumers show willingness to consume foods made with LFHTC. The highest percentage of fertilizer distributors/sellers have accepted considering that LFHTC would be an environmentally friendly product. Based on the responses of fertilizer users, the highest percentage of them accepted that the LFHTC would be environmentally friendly and its practices in other countries has produced successful outcomes. The distributors/sellers and users who have rejected the LFHTC, believed the lack of trust in the quality of the SS product. Also, the survey results emphasized that fertilizer users pay too much attention on fertilizer properties such as the nutrient level (N, P, K) when purchasing, the easiness of use and the price.

Keywords: Hydrothermal carbonization, Nutrient level, Organic fertilizer users, Purposive sampling method, Questionnaire survey, Social acceptability.