QUALITY OF THE COMPOST AVAILABLE IN THE MARKET AND POSSIBLE THREATS TO THE ENVIRONMENT OVER LONG-TERM APPLICATION

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Abstract: With the concept of organic farming which has been recently promoted by the government, a large number of compost products have come to the market. Even though the Sri Lanka Standards Institution has introduced quality parameters for compost, no proper monitoring system has been implemented to ensure the quality of the products. This study aimed to assess the quality of compost products available in the market and compare them with Sri Lanka (SL) Standards (ie: 1634:2019/1635:2019). Three samples from fifteen different compost products were collected randomly from the open market. Four compost products from Gampola, five products from Kandy and six products from Anuradhapura were collected for analyzing quality parameters using standard analytical methods. The results obtained from analyses were then compared with SL standards. Total N content of all 15 samples remained below the SL standard of total N (1%). The total phosphorus content of samples varied from 0.1-0.2% but none of the samples achieved SL standard of 0.5%. However, 13 out of 15 samples reached the SL standard for K (1%) and only 06 samples complied with the SL standard given for C:N ratio which ranges from 10 to 25. Ten compost products out of 15 reported higher sand percentages compared to the SLS standards indicating adulteration by adding sand. According to hazardous element analysis, the arsenic content of 11 samples has exceeded the SL standard of 3 mg Kg^{-1}. Results revealed that any of the tested products has not satisfied the important SL standard specifications. Since the use of compost is an emerging trend in dry zone agriculture, the elevated arsenic levels of compost products could be a threat to human health and the environment of the tank cascade system as a result of long-term application. Therefore, a quality-controlling mechanism to regulate the production process is essential to maintain the quality of compost available in the market.

Keywords: Agricultural waste; Compost; Municipal solid waste; SLS standards