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The Usage of Household Polythene and Plastics in Kirinda Puhulwella Pradeshiya Sabha, Matara

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Abstract

Plastic is one of the globally used versatile, synthetic polymers which includes many negative impacts despite their benefits. Due to its higher availability, it has been used widely in society and finally causes many negative impacts on humans, animals and the environment due to improper disposal techniques followed by the community. Therefore, the present study focused on identifying and evaluating household polythene and plastic usage, disposal practices and public perception of plastics in Kirinda Puhulwella Pradeshiya Sabha in Matara District, Sri Lanka. The study area has been divided into three zones urban, semi-urban and rural based on factors such as available infrastructure, transport facilities and population density. A questionnaire with six major sections including personal information, nature of the usage of plastics and polythene, disposal of plastics and polythene, identifying issues related to the usage of plastics and polythene, controlling the usage of plastic and polythene usage, public feedback on the regional program and governmental efforts for controlling has been deployed to identify plastic waste disposal methods and awareness. 150 participants were interviewed to represent all three zones in the study area and weights of plastic wastes were taken using a digital handheld scale. The study revealed that shopping bags are the most used plastic item (137 respondents) due to higher availability (40%) and lack of other alternatives (39%) in the study area. LDPE was the most used plastic type (18.5%) in the study area (0.27 ± 0.11 kg/month/house unit) while PET was the least (8%) consumed type (0.12 ± 0.11 kg/month/house unit). Around 90% of participants had sound knowledge of the consequences of improper disposal of plastics but most of them practice burning (54%) and burying (27%) as main disposal techniques. Further, correlations were identified between plastic usage and disposal patterns concerning participants' occupational status and educational level. Plastic waste generation was moderately proportional to the educational level ($p=0.028$) and also to the type of occupation ($p=0.01$) in the study area. Short-term and long-term recommendations such as providing proper infrastructure facilities and permanent plastic waste collecting programs under feasibility studies, accepting segregated waste, focusing on attitudinal behaviours of specific communities, tightening existing rules and regulations and investing in research and developments were made based on the results of the study.

Keywords: *Polythene and plastic, Disposal, Perception, Awareness*