

## Bioenergy 2020: Exploring the opportunity for Organic Household Waste (OHW) management technology options: An empirical investigation for Muharraq governorate

Sumaya Abbas

Arabian Gulf University, Kingdom of Bahrain

Organic Household Waste (OHW) fraction of the Municipal Solid Waste (MSW) has become some extent of focus globally thanks to its harmful effects on the environment if it's not managed properly. OHW represents the very best waste composition amongst most of the high-income developing countries including Bahrain, signifying a serious opportunity within the realm of conversion technologies. Thus, exploring the chance for OHW management through selecting the foremost preferable technology option for the Bahraini context supported its organic waste characteristics seems to be necessary, especially considering the harmful effects of dumping solid waste into the landfill; it's going to also represent a possible alternative to gas, which is that the primary resource of energy wont to generate power in Bahrain. This research aims to explore the chance for OHW management technology options using the "Case Study" methodology in Muharraq Governorate. By developing a parameter/technology matrix supported literature review and therefore the experimental phase which can be achieved through OHW characterization within the lab (that is taken into account important criteria of the well-liked technology option selection), the results will then be matched with the matrix to pick the foremost preferred technologies. The Economic Criteria is vital for the technology selection decision making; thus, an analysis was conducted for every technology within the Bahraini context. The Social Criteria is additionally important in selecting the well-liked

technology for decision-making; the general public awareness measured for people in Muharraq Governorate as a crucial key factor to make sure the success of any waste management practices within the country. Furthermore, interviews were conducted with experts so as to explore the enablers and barriers to the OHW technology adoption in Bahrain. Research objectives were achieved via quantitative and qualitative approaches, including empirical sampling and lab analysis of OHW of Muharraq Governorate. This study involved chemical and physical characterization, surveys, questionnaires and semi-structured interviews, Microsoft office "Excel", SPSS including ANOVA, t-test and Nvivo 12 for data analysis. The research may provide sufficient information for future adoption of evidence-based technology selection so as to manage OHW adoption in Bahrain, which contributes to the choice and policy-making processes. It's going to also provide a far better understanding of OHW characterization in Bahrain, which can help further researches.