

**SEGREGATION OF MUNICIPAL SOLID WASTE AND RECYCLING POTENTIAL FOR
RESIDENTIAL HOSTEL IN UITM SARAWAK**



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OCTOBER 2012

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Tajuk Projek : Segregation of Municipal Solid Waste and Recycling Potential for Residential Hostel UiTM Sarawak
Kod Projek : 600-RMI/ST/DANA 5/3/ Dst (443/2011)
Kategori Projek : Kategori F (2011)
Tempoh : 15 Oktober 2011 – 14 Oktober 2012 (12 bulan)
Jumlah Peruntukan : RM 8,000.00
Ketua Projek : Pn Lydia Dundun Francis

Dengan hormatnya perkara di atas adalah dirujuk.

2. Sukacita dimaklumkan pihak Universiti telah meluluskan cadangan penyelidikan Y. Brs Profesor /tuan/puan untuk membiayai projek penyelidikan di bawah Dana Kecemerlangan UiTM.

3. Bagi pihak Universiti kami mengucapkan tahniah kepada Y. Brs. Profesor/tuan/puan kerana kejayaan ini dan seterusnya diharapkan berjaya menyiapkan projek ini dengan cemerlang.

4. Peruntukan kewangan akan disalurkan melalui tiga (3) peringkat berdasarkan kepada laporan kemajuan serta kewangan yang mencapai perbelanjaan lebih kurang 50% dari peruntukan yang diterima.

Peringkat Pertama	20%
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5. Untuk tujuan mengemaskini, pihak Y. Brs. Profesor/tuan/puan adalah diminta untuk melengkapkan semula kertas cadangan penyelidikan sekiranya perlu, mengisi borang setuju terima projek penyelidikan dan menyusun perancangan semula bajet yang baru seperti yang diluluskan. Sila lihat lampiran bagi tatacara tambahan untuk pengurusan projek.

Sekian, harap maklum.

“SELAMAT MENJALANKAN PENYELIDIKAN DENGAN JAYANYA”

Yang benar

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5. Report

5.1 Proposed Executive Summary

Effective waste management through municipal solid waste (MSW) composition studies is important for numerous reasons, including the need to estimate material recovery potential, to identify sources of component generation, to facilitate design of processing equipment, to estimate physical, chemical, and thermal properties of the waste and to maintain compliance with Malaysian Environmental Quality Act 1974. The scope of this study focuses on the segregation of municipal solid waste (MSW) in the residential college in Universiti Teknologi Mara Samarahan (UiTMCS) as there is no data regarding on the amount of waste being generated daily. An important point for the success of a waste management plan is the need for accurate and up to date on the quality and quantity of the waste that is generated in the area. With this data, proper management strategies can be planned by top management of UiTMCS and put into action, notwithstanding the fact that this data could also be used to predict the future trends in the quantity and quality of the MSW of the residential college in UiTMCS. This study will be carried out to have a comprehensive characteristic of the waste that is generated and to determine MSW composition and generation rate. Hand sorting will be used for classifying the collected wastes into the following categories: plastics, paper, metals, aluminium, leather-wood-textiles-rubbers, organic wastes, non-combustibles and miscellaneous according to ASTM D 5231 - 92 : Standard Test Method for the Determination of the Composition of Unprocessed Municipal Solid Waste. The sorting procedure of Municipal Solid Waste (MSW) in this study will be carried out according to the spot sampling method. Based on this method used by Kathirvale *et al.* (2003), about 30 to 50 kg of mixed wastes is to be taken which is then sorted. The MSW are sorted according to their categories such as plastics, polystyrene pack, organic or food waste, papers, glasses, ceramic, textiles, rubbers, metals and others are found in the MSW. Further analysis included proximate analysis for moisture content of combustible materials. The laboratory analysis is carried out on the MSW samples are based on recommendations from the American Society of Testing and Material (ASTM). Result from this study will provide data to categorize the MSW in UiTMCS and the current trends is study and by means of a prediction model for the future trend is predicted and proposed the appropriate method to treat it.

5.3 Introduction

Municipal Solid Waste Management (MSWM) is a national critical issue in our country today. One of the issues is regarding the shortening life span of landfills in Malaysia due to intensifying solid waste generation by the rapid the growth of human population. Inefficient solid waste management draws the concern on how it would effects the environment as well as the public health. Flies production, bad odours and leachate may cause negative effects such as the occurrence of diseases.

The MSW in Malaysia are mainly composed of organics, plastics and papers. The MSW composition varies depending on the waste sources like household, industrial sectors, commercial and institutional. Even different individuals contribute to different MSW. Taking example, students produce waste such as papers. Nevertheless, hawkers produce organic wastes. Individual composition of MSW varies, ranging from organics, papers, plastics, glasses and many more.

The scope of this study covers characteristics of the municipal solid waste (MSW) in the residential college in Universiti Teknologi Mara Samarahan (UiTMCS). UiTMCS is one of the branch campuses for the biggest university ever known in Malaysia, the Universiti Teknologi Mara Malaysia. It is located in the state of Sarawak in which the enrolment is 4000 for full time students and 800 for part time students (UiTMCS, 2011). Out of the 4000 full time students, 80% are residential, staying at three of its residential college namely Seri Gading, Seri Serapi and Seri Mulu which may houses up to a total of 4270 residential students at one time (UiTMCS, 2011). The life styles of the students in the campus have contributed to the generation of MSW.

Proper characterization of MSW is important in order to determine the best method for the disposal of MSW. Not all MSW is suitable for landfill disposal. Likewise, not all MSW is fit to be incinerated. Physical analyze is important to characterize and classify the MSW for its proper solid waste management. The MSW composition that we are focusing in this study is more onto institutional sourced solid waste.