

Feasibility, usability and cost of biodegradable single-use meal tray: A pilot study in Hospital Sultanah Bahiyah, Alor Setar

Mohd Suan Mohd Azri¹, Mohammed Noor Syahireen¹, Chan Huan Keat², Ismail Ibtisam¹, Abu Talib Norain³, Mat Nayan Khairul Nizam³, Safirol Shahida⁴, Parasuraman Ramaness⁴, Noor Batcha Mohamad Faizal⁵, Abu Hassan Muhammad Radzi²

¹Clinical Research Center, Hospital Sultanah Bahiyah, Kedah, ²Office of Director General, Ministry of Health Malaysia, Putrajaya, ³Dietetic and Food Service Department, Hospital Sultanah Bahiyah, Kedah, ⁴Free the Seed Sdn. Bhd., Gurun Industrial Park, Gurun, Kedah, ⁵Malaysian Bioeconomy Development Corporation Sdn. Bhd., Kuala Lumpur

ABSTRACT

Introduction: As the need for sustainable practices in healthcare settings becomes increasingly recognized, the use of biodegradable meal trays has gained attention as a potential solution to reduce the environmental impact of meal service in hospitals. This study aims to assess the feasibility, usability and cost of single-use biodegradable meal trays made from paddy straw. **Methods:** A workflow was developed and compared between the current practice and the use of single-use meal trays based on investigator observations of the processes and approved after focused-group discussions. Staff handling the meal trays at various work processes were interviewed to capture their feedback and improvement suggestions. The components of direct cost analysis were identified based on previous literature. The resulting costs are compared between reusable and single-use biodegradable meal trays. **Results:** Compared to conventional meal trays, the use of biodegradable meal trays is able to eliminate the dishwashing and drying process and thus streamline the work process. More than 120 minutes can be saved to complete meal-serving activities when using biodegradable trays. It also has an ergonomics advantage and reduces total cost by up to RM 0.59 per patient over four meals in a day. It is estimated that a 12.86% cost reduction can be achieved over a 5-year period if biodegradable meal trays were used in hospital settings. **Conclusion:** Utilization of biodegradable meal trays in a hospital setting is feasible and has numerous advantages to the operating cost and staff involved.