



Template for Evidence(s) UI GreenMetric Questionnaire

University : Valaya Alongkorn Rajabhat University under the Royal Patronage
Country : Thailand
Web Address : www.vru.ac.th

[3] Waste (WS)

WS3 Organic waste treatment

Description:

Organic waste management in the university is divided into 2 groups: 1) Food waste 2) Plant waste.

Food waste constitutes over 50% of all solid waste, primarily made up of organic materials like food scraps, vegetables, fruits, and garden waste. Converting this organic waste into compost transforms a burden into a valuable resource. This practice not only alleviates challenges within the waste management system but also lowers disposal costs and decreases the volume of waste sent to landfill.

The total volume of organic waste (food waste) generated from the preparation of vegetables and fruits, animal bone scraps, meat scraps, and leftover food from three main locations is as follows:

- 1) Food Centre of Valaya Alongkorn Rajabhat University under Royal Patronage: approximately 53,600 kg/year.
- 2) Canteen of Valaya Alongkorn Rajabhat University Demonstration School under Royal Patronage (primary level): approximately 1,700 kg/year.
- 3) Canteen of Valaya Alongkorn Rajabhat University Demonstration School under Royal Patronage (secondary level): approximately 3,600 kg/year.

Consequently, the total volume of organic waste (food waste) amounts to 58,900 kg/year, or 58.9 tonnes/year.

Additionally, the total volume of organic waste (branch waste) produced is estimated to be 600 kg/day, 52 weeks = 31,200 kg/year, or 31.2 tonnes/year.

Methods for treating food waste

- 1) Using food scraps to make food for animals.

The process begins with the separation of food scraps generated by students, teachers, and cafeteria staff. These scraps are collected in 200-litre plastic buckets and sent to farmers for animal feed, including fish and pigs. Farmers arrive to collect the food waste every Monday to Friday in the afternoon. On average, 350 kg of food waste is sent to feed animals each day when school is in session.





2) Compost and Biogas Generator

The machine processes 100 kg of food waste per day from the food center. It produces liquid fertilizer suitable for plant irrigation and wastewater treatment. Additionally, the methane gas generated can be utilized as fuel for cooking in the food center.



The organic waste collection station for the production of biogas and liquid fertilizer.

3) Eco-friendly composting bins

This involves the straightforward installation of food waste treatment bins on the ground near trees or gardens. The decomposed food waste transforms into compost for nearby plants. Presently, the university has installed these bins in its government housing and social science buildings.





Methods for treating branch waste

1) Composting

The Landscape Management Group at the university utilizes grass clippings, leaves, fallen branches, and tree trimmings to create compost on-site. This composting process relies on natural decomposition and involves watering the material twice a week for 4 to 5 months. Once the compost is ready, any plastic scraps or large branches are removed and mixed into the soil to enhance its quality. This improved soil is then used for cultivating seedlings, flowers, ornamental plants, and trees throughout the university.



2) Combustion to charcoal

Burn wood chips and waste materials to create compressed charcoal. Start by placing the wood chips or waste materials in a kiln to convert them into charcoal. After the charcoal has cooled, remove it and grind it into a fine powder. Next, mix water with cassava flour to help the burned wood chips bind together. Then, press this mixture in a briquette machine. Once the briquettes are formed, lay them out to dry in the sun. After they are completely dry, pack the briquettes into bags.

