

COMMUNITY – BASED PLANNING AWARD



SHAH ALAM COMPOST



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Introduction

The landscape maintenance in Shah Alam has produced tons of garden waste which has largely being discarded into landfills. An estimated 30 tonnes of garden waste are produced daily by the Department of Parks and Recreation contractor. This is a huge waste of resources that can be reused to produce something that is beneficial to humans. The `Kompos Shah Alam` is a response to saving the cost of disposing the garden waste.

Transportation to landfill and tipping fee on a daily basis are estimated to cost at RM18,000. Purchasing of agricultural materials such as topsoil, sand, rice husk and processed coconut husk for planting medium involves a high cost as well which amount to RM200,000 per year. Shah Alam Compost will not only reduce cost but also provide a better and cheaper soil mixture yet environmentally friendly for Shah Alam.

The Shah Alam Composting project was started in September 2011 with a worker, a shredder and grinder machine. The unit is managed by an Assistant Agriculture Officer. To date (from 2011 – 2013), a total of 30 tonnes of compost was produced from average 100 tonnes of garden waste per year.

Objectives

1. To reduce the cost for waste disposal to landfills.
2. To reduce the cost of purchasing fertilizer and agricultural materials.



What is compost? Compost is decomposed organic material such as leaves, shredded twigs, grass clippings and other garden waste that can be composted and use as a planting medium that may repair soil structure and adds nutrients. Composting is a technique used to accelerate the natural decay process. The technique converts organic wastes to a mulch which is used to fertilize and condition soil. Leaf waste decomposes naturally in about two years. Composting can take as long as a year or as little as 14 days, depending upon the amount of human control.

SHAH ALAM COMPOST

Shah Alam Compost content analysis.

The following are the analysis results of the Shah Alam Compost.

a) First result (February 2013)

Our ref	Your ref	pH	EC ($\mu\text{S}/\text{cm}$)	MC (%)	%					$\mu\text{g}/\text{g}$			
					N	P	K	Ca	Mg	Fe	Cu	Zn	Mn
339/13	Compost A	7.65	152.0	4.97	0.37	0.06	0.11	0.56	0.006	4117.40	25.20	65.52	57.54

b) Second result (November 2013)

Our ref	Your ref	pH	EC ($\mu\text{S}/\text{cm}$)	MC (%)	%					$\mu\text{g}/\text{g}$			
					N	P	K	Ca	Mg	Fe	Cu	Zn	Mn
1411/13	Compost	7.73	136.0	3.85	0.49	0.09	0.40	1.18	0.07	2834.0	11.20	3.60	56.40

c) Guidelines of nutrient content (General nutrient properties of composts :
Nutrient content (dry weight basis) :

Type	% nutrient content		
	N	P	K
Poultry manure	2 - 4	1 - 3	1 - 3
Feedlot manure	2 - 3	1 - 1.5	1 - 2
Dairy manure	1 - 2	0.5 - 1.5	1 - 2
Urban yard waste	1 - 1.5	0.2 - 0.5	0.5 - 1.5
Crop residue	1.5 - 2.5	0.2 - 0.5	1 - 2

Forms of N present :
Organic N > 90%
Mineral N ($\text{NH}_4\text{-N}$, $\text{NO}_3\text{-N}$) < 10%

Reference : Tim Hartz (2009)
UC Organic Soil Fertility Management Symposium
UC Davis, Department of Plant Sciences

Improvements have been made to increase the rate of macronutrient.

The main element of N increased by 0.12%, P- 0.03%, K- 0.29% and other elements such as Ca increased by 0.62% and Mg- 0.064%.

Based from the general nutrient properties of composts, the Shah Alam Compost is still below. This is in view of us using dry leaves (brown element) as our main ingredient. To compensate the lacking of green element, 100 grams of chicken manure is added to every 100 kg of garden waste. We are starting to diversify sources of green element with fruit and vegetable waste to enrich the Shah Alam Compost content.

SHAH ALAM COMPOST

The Shah Alam Compost Centre at Section 17, Shah Alam.

Google earth view



SHAH ALAM COMPOST CENTRE



Store



Site office



Compost pile



Turning process



The new chipper and shredder machine for Shah Alam Compost 2014

SHAH ALAM COMPOST

Shah Alam Compost – The process of saving the earth

Compost unit workflow is as follows :



Garden waste delivered to centre



Waste segregation



Shredding process



Making compost pile



Turning compost pile.



Pile inspection



sift and weigh



Bulk packaging



Retail packaging

Composting requirements.

SHREDDED ORGANIC WASTES. Shredding, chopping or even bruising organic materials hastens decay.

GOOD LOCATION. The compost pile should be located in a warm area and protected from overexposure to wind. While heat and air facilitate composting. The location should not offend neighbours.

Shah Alam Compost Centre located far from residents and surrounded by buffer zone.

NITROGEN. Nitrogen accelerates composting. Good sources include fresh grass clippings, manure, and nitrogenous fertilizer.

WATER. Materials in the compost pile should be kept as moist as a squeezed sponge. Too little or too much water retards decomposition. Overwatering causes odors and loss of nutrients.

We inspect our compost piles once a week including temperature and moisture level to make sure it is in the right track.

SHAH ALAM COMPOST

Shah Alam Compost innovation and expansion



**Participation in Konvensyen KIK
Piala Datuk Bandar 2013.**

**Project title : High cost of purchasing
fertilizer and agricultural materials.**



**Compost sifter
Dimension : 5' L x 3' W
Mechanism : Manual rotation
Capacity : 150kg per hour**

In 2012 and 2013, a total of 175 tonnes of garden waste has been sent to the Shah Alam Composting Centre to be made into compost. This means a reduction of 24% per annum of garden waste being dumped into landfills.

By using compost, we have succeeded in reducing chemical fertilizer costs by 17% (KIK Convention 2013).

COMPARATIVE BETWEEN COMPOST AND CHEMICAL FERTILIZER

Compost	Chemical fertilizer
Low cost RM 0.44 per kg	High cost RM 2.40 per kg (NPK)
Reduce garden waste to landfills	Does not use garden waste or any organic matters
Environmental friendly	Can cause pollution
contain many plant nutrients in low concentrations	contain only a few nutrients in a concentrated form
Can improve soil structure	May harm your plants if overuse

Shah Alam compost has been widely used in the Shah Alam greening initiative and also given out as gift to visiting residents.

Shah Alam greening initiative programmes are :

a) Perintis Hijau

Introduction to compost and how to make your own compost.



b) Zon Bersih 2013

Making compost from garden waste



c) Trees for life

Using compost as one of the planting medium

