NADEP COMPOSTING

Revitalizing soil health holds the key to improving productivity of Indian agriculture. Composting is a process of utilizing and processing solid waste through which its organic component is biologically decomposed to a humus-like state that can be used as fertilizer. Solid wastes usually contain the entire range of micro-organisms in large numbers. Under appropriate conditions, the microbial population grows and in doing so, degrades the organic portion of the waste.

NADEP composting involves the construction of a 3.6 mx1.5 mx1.0 m compost trough, which can produce 1 tonne of composted manure in each cycle. This manure is sufficient to cover 0.25 hectare of agricultural land. The NADEP pit is usually constructed with a lattice brick wall to ensure proper aeration. Inside this trough a series of layers of agricultural waste, dung and soil are successively heaped upon each other. About 100-110 kg of agricultural waste is first placed on the ground in a layer which is about 6 inches high. 4 kg of dung mixed in 125-150 litres of water is applied on top of this layer (the quantity of water used varies with the seasonal temperature, more water being necessary in the summer months). On top of the second layer, cleaned and sifted soil (roughly half the weight of the agricultural waste used, i.e. 50-55 kg) free of stones, glass etc. is spread, on which a little water is also sprinkled. In this manner successive layers are heaped to a height of about 1.5 ft. above the top of the trough. After this the top of the pile is sealed with a 3 inch plastering of soil mixed with dung (400-500 kg). Within 2-3 months dark brown, friable, soft and moist compost, free of all foul odour is ready. It has been generally estimated that by the NADEP method, one head of cattle produces 80 tonnes of manure in a year. The nutrient status of this manure is Nitrogen 0.5-1.5%, Phosphorous 0.5-0.9% and Potassium 1.2-1.4%.

Typical drawing and estimate for NADEP compost pit are given below

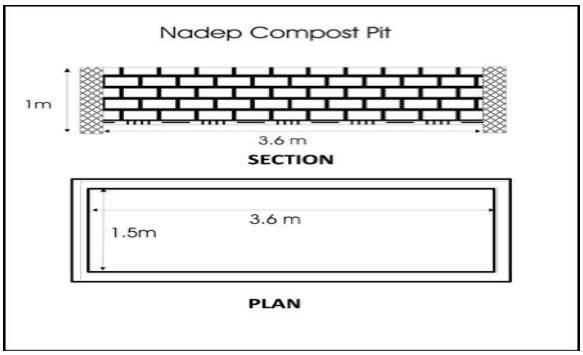

Fig: **Design of NADEP compost pit**

Table : Typical estimate for NADEP compost pit

	Cost estimate of Nadep compost Pit size								
S. No.	Detail	No.	L	W	H/D	Unit	Qty	Rate	Amount
1	Excavation for foundation in Hard Soil								
	Long Wall	2	4.4	0.3	0.3	cum	0.792		
	Short Wall	2	1.5	0.3	0.3	cum	0.27		
	Total					cum	1.0672	67.8	72.0
2	Boulder laying in foundation								
	Long Wall	2	4.4	0.3	0.1	cum	0.264		
	Short Wall	2	1.5	0.3	0.	cum	0.09		
	Total					cum	0.354	358.5	126.9
3	Brick Masonry in 1:4 Cement Mortar up to Ground level								
	Long Wall	2	4	0.2	0.2	cum	0.32		
	Short Wall	2	1.5	0.2	0.2	cum	0.12		
4	Brick Masonry in 1:4 Cement mortar above								
	Long Wall	2	4	0.2	1	cum	1.6		
	Short Wall	2	1.5	0.2	1	cum	0.6		
	Total Brick Masonry						2.64		
	Deduction for Aeration 10% of Masonry work						-0.264		
	Net Masonry work						2.904	2509.2	7286.7
	Plastering at top 1:4 Cement motor								
	Long Wall	2	4	0.2		sqm	1.6		
	Short Wall	2	1.5	0.2		sqm	0.6		
	Total Plastering					sqm	2.2	89.8	197.6
	Cost of Nadep Compost								7683
					Labour			1849	24%
					Material			5834.2	76%

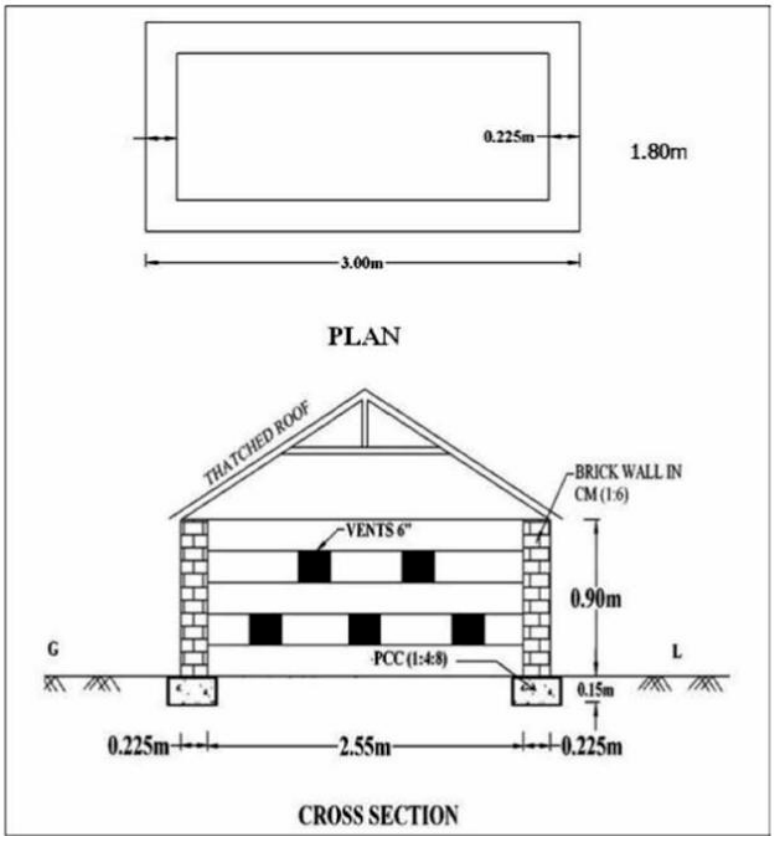

Figure : Design of NADEP compost pit

Table 5-8: Estimate for NADEP compost pit, Op-2:

Sl.No.	Item	No	L (m)	B (m)	H/D (m)	Volume/Area
1	Unskilled Labour Charges for earth work excavation to compost pit brick work foundation	1x1	3.00	1.80	0.15	0.81 cum
2	Plain Cement Concrete C C (1:4:8) with 40mm HBG metal for brick work foundation including cost and conveyance of 40mm metal, sand, cement and water for mortar and	1x2	(3.00+1.80)/ 2	0.30	0.15	0.432 cum
3	Country brick masonry with red earth/ cement blocks in cement mortar 1:6 including cost and conveyance of bricks, sand, cement and water for mortar and curing and masonry charges					
	Long Wall	1x2	3.00	0.225	0.90	1.22
	Short wall	1x2	1.35	0.225	0.90	0.55
Total Qty						**1.761 cum**

Sl. No.	Item	No	L (m)	B (m)	H/D (m)	Volume/Area
4	Plastering with CM 1:5 including Cost and conveyance of Sand, Cement and water for mortar and curing and masonry charges					
	1) Out of the compost pit	1x1	9.60		0.90	8.64 sqm
	2) Inner side of the compost pit	1x1	7.80	....	0.90	7.02 sqm
	3) Top of the compost pit	1x1	3.00	0.225		1.35 sqm
	4) Top of the short wall	1x1	1.35	0.225		0.60 sqm
	Total Qty					**17.61 sqm**