

The Business of Composting

14th Better Composting School

October 25 - 27, 2006

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How much does it cost to compost?
It depends on the situation

Can you make money composting?
Maybe



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Types of Costs



Operating Costs:

- Moving Materials
- Monitoring Windrows/Piles
- Site Maintenance
- Equipment
- Equipment Maintenance
- Pad Cost

Administrative Costs:

- Record Keeping
- Public Relations
- Securing Feedstocks
- Marketing Product

Account for everything

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How to Determine Costs

Need to know:

- Hours of productivity in a work day
- Labor rate
- Type of equipment required to meet needs of operation
- Equipment rate
- Pad rate

Maintain a Log for Every Task:

- Include labor, equipment and supplies

Enterprise Accounting:

- Compost production, mulch manufacturing, soil blending

Estimate Future Costs

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Labor Productivity

Scenario:

8 Hour work day:

- Travel to site – 15 minutes
- Morning break – 15 minutes
- Lunch – 30 minutes – (unpaid)
- Afternoon break – 15 minutes
- Return travel – 15 minutes
- Start up and end day – 30 minutes



Available Hours for Productive Work – 6.5 hours

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Establish Labor Cost

Labor Rate	\$15.00/ hour
Fringe Benefit (28.2%)	4.23/ hour
– health insurance, retirement...	
Breaks	.94/ hour
Vacation/Sick Leave	1.15/ hour
– 4 weeks/year	
Travel Time	.94/ hour
Labor Cost/ Hour	\$22.26

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Equipment Needs

Consider:

- Feedstocks Processed
 - required preprocessing and quantities
- Method of Composting
 - static pile, windrow, in-vessel
- Method of Turning
 - loader, turner
- Available Space
 - pad and stockpile area



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Determine Equipment Rate

- Cost**
- Financing**
- Routine Maintenance**
 - frequency and cost of oil change, greasing...
- Repairs**
 - tires, engine overhaul...
- Hours of Operation**
- Fuel**



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Loader

Cost:	\$100,000.00
Interest:	\$27,278.00
- finance 10 years @ 5%	
Oil Change: (per service)	\$150.00
Grease:	\$12.50
- .5 hour/ every 10 hours of operation	
Hours of Operation/ year:	500
Fuel: (gallons/hour)	1.5
Repairs and Maintenance:	??

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Potential Loader Costs

Engine Overhaul	\$5000.00
Tire Puncture (/tire)	\$450.00
Transmission	\$10,000.00
Hydraulic System	\$1,700.00
Key (overnight shipping \$45)	\$52.00
	\$17,202.00

Average cost/hour = \$1.72
(Life of loader = 10,000 hours)



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Loader Cost/ Hour

Scenario: Life of loader 10,000 hours

- Principal and Interest	\$127,278
- Routine Maintenance	\$20,500
• oil change 40 @ \$150/, greasing 1,000 @ \$12.50/, cutting edge 10 @ \$200/	
- Tires	\$3,200
• 2 sets @ \$1800/	
- Fuel	\$41,250
• 15,000 gallons @ \$2.75/	
- Repairs	\$20,000
	\$212,228.

Cost/ hour \$21.22

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Determine Cost/ Windrow

Need to know:

- Labor and equipment required for each step
 - Construction
 - Monitoring and site maintenance
 - Turning
 - Screening
 - Pad surface area



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Cost in 10 years

Present Cost/ windrow = \$2,458.00

Inflation = 2.75%

$$FC = PC(1 + i)^n$$

$$FC = \$2,458(1+.0275)^{10}$$

$$FC = \$2,458(1.3117)$$

Cost/ Windrow in 10 years = \$3,224.04



Additional Factors

Weather
Odor
Quality
Down time
Skill of operator
Opportunity Cost



Remember



Account for everything
Product has value
Receive a tipping fee for feedstocks
Be a good neighbor



Costs are specific to operation
apply cost analysis methods to each situation

**Cost information is essential to
determining profitable endeavors**

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Calculate the Cost of a Windrow

Calculate:

- Hours of labor and equipment required for windrow
- Total cost of production associated with windrow

Given:

Tons/ windrow: ~200
Length of time to construct: 5 days
Number of times turned: 5
Length of active composting: 10 weeks



Labor and Equipment

Rates:

Labor: \$23.00
Tractor: \$25.00
Mixer: \$15.00
Turner: \$50.00
Screen: \$30.00
Truck: \$20.00
Loader: \$27.00

Time and Equipment:

Mixing: 3 hours labor, tractor and mixer/ day
2 hours loader/day
Monitoring and maintenance: 0.25 hours 3x/week
Turning: .75 hours labor/ turn
.5 turner/ turn
.25 hours loader/ turn
Screening: 5 hours labor, loader, screen and truck



Steps

1. Determine total hours for labor and each piece of equipment for mixing, monitoring, turning and screening
2. Add individual totals to get total cost of production



Solution

Task	Labor & Equipment						
	Labor	Loader	Tractor	Mixer	Turner	Screen	Truck
Mixing	15	10	15	15			
Monitoring...	7.5						
Turning	3.75	1.25			2.5		
Screening	5	5				5	5
Total Hours	31.25	16.25	15	15	2.5	5	5
Rate/hour	\$23.00	\$27.00	\$25.00	\$15.00	\$50.00	\$30.00	\$20.00
	\$718.75	\$438.75	\$375.00	\$225.00	\$125.00	\$150.00	\$100.00
Total Cost of Production	\$2,132.50						

