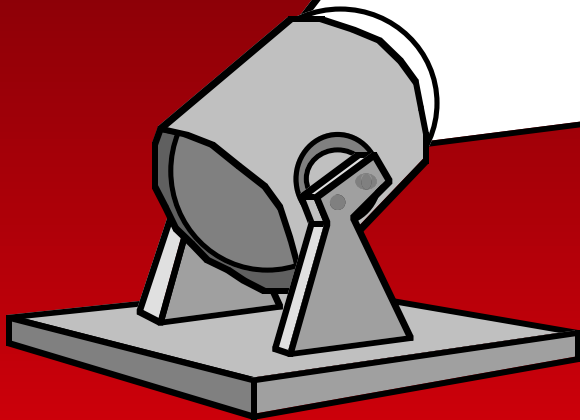


Composts





“Composts”

Current Status

- ▶ Much interest/potential
- ▶ Renewable resource
- ▶ Disease suppression
- ▶ Different nutrient forms
- ▶ Locally produced
- ▶ Highly variable

CAUTION

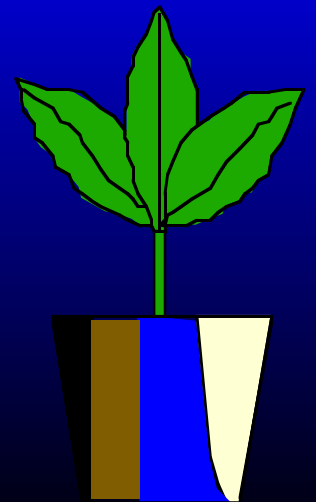
**All composts
are NOT the
same!**

Compost:

Verb...

NOT a

noun





“Composts”

Possible Uses

- ▶ Soil amendment
- ▶ Mulches
- ▶ Boiler fuel
- ▶ Consumer products
- ▶ Component for nursery mixes
- ▶ Component for greenhouse mixes

“Composts”

Source Materials

- ▶ Yard waste
- ▶ Ag. by-products
- ▶ Ag. manures
- ▶ Fish waste
- ▶ Municipal sludge
- ▶ Municipal solid waste

Successful Composting

3 P's

Procurement

Processing

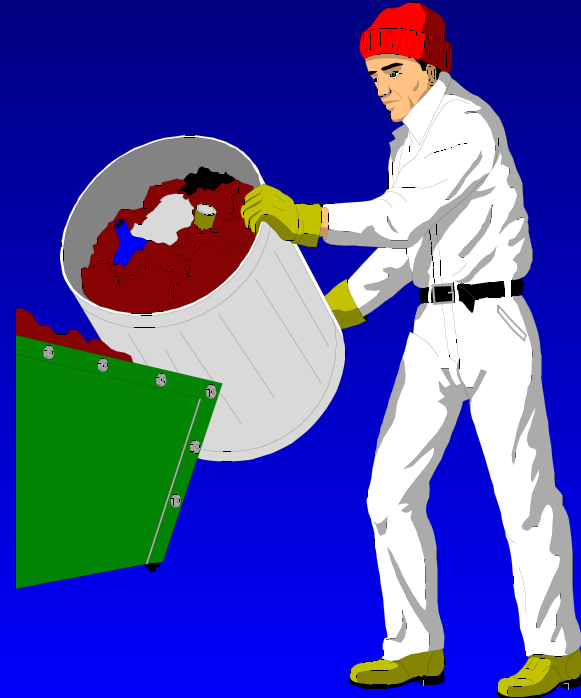
Product



Successful Composting

Obstacles

- ▶ Focus on procurement & processing
- ▶ Product in hands of waste management personnel - NOT end users



Composting

Obstacles

“If it’s dark and smells earthy, it must be good”



- ▶ Municipalities not market sensitive
- ▶ Private contractors make money on tipping fees
NOT composting

Using “Composts”

Obstacles

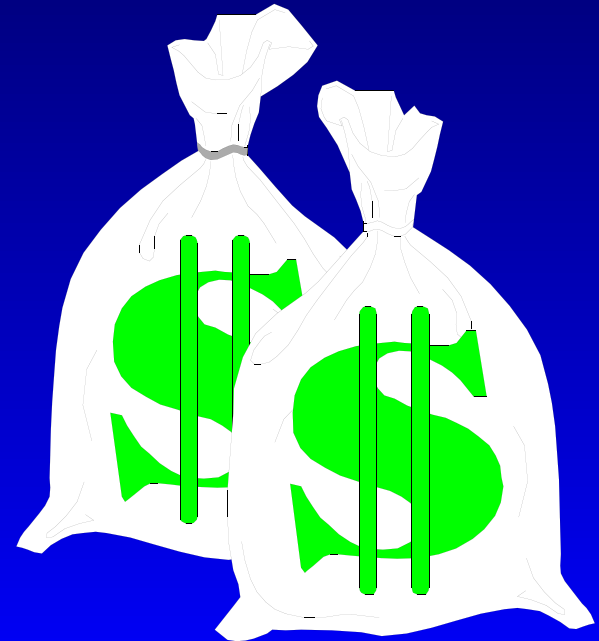
- ▶ Inconsistent supply
- ▶ Very little QC
- ▶ Poor final product specs.
- ▶ Weight
- ▶ Cost



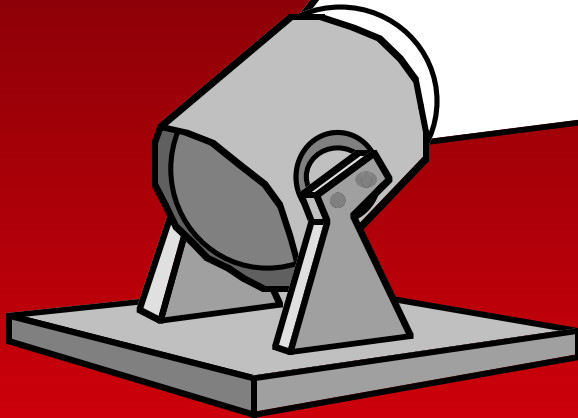
“Composts” Cost



- ▶ Yardwaste: \$20 - \$50 per ton
 - \$0.75 - \$1.85 per cubic foot
 - Peat: \$0.70 cu ft
 - Bark: \$ 0.35 cu ft
- ▶ Higher transportation costs



Compost Processing



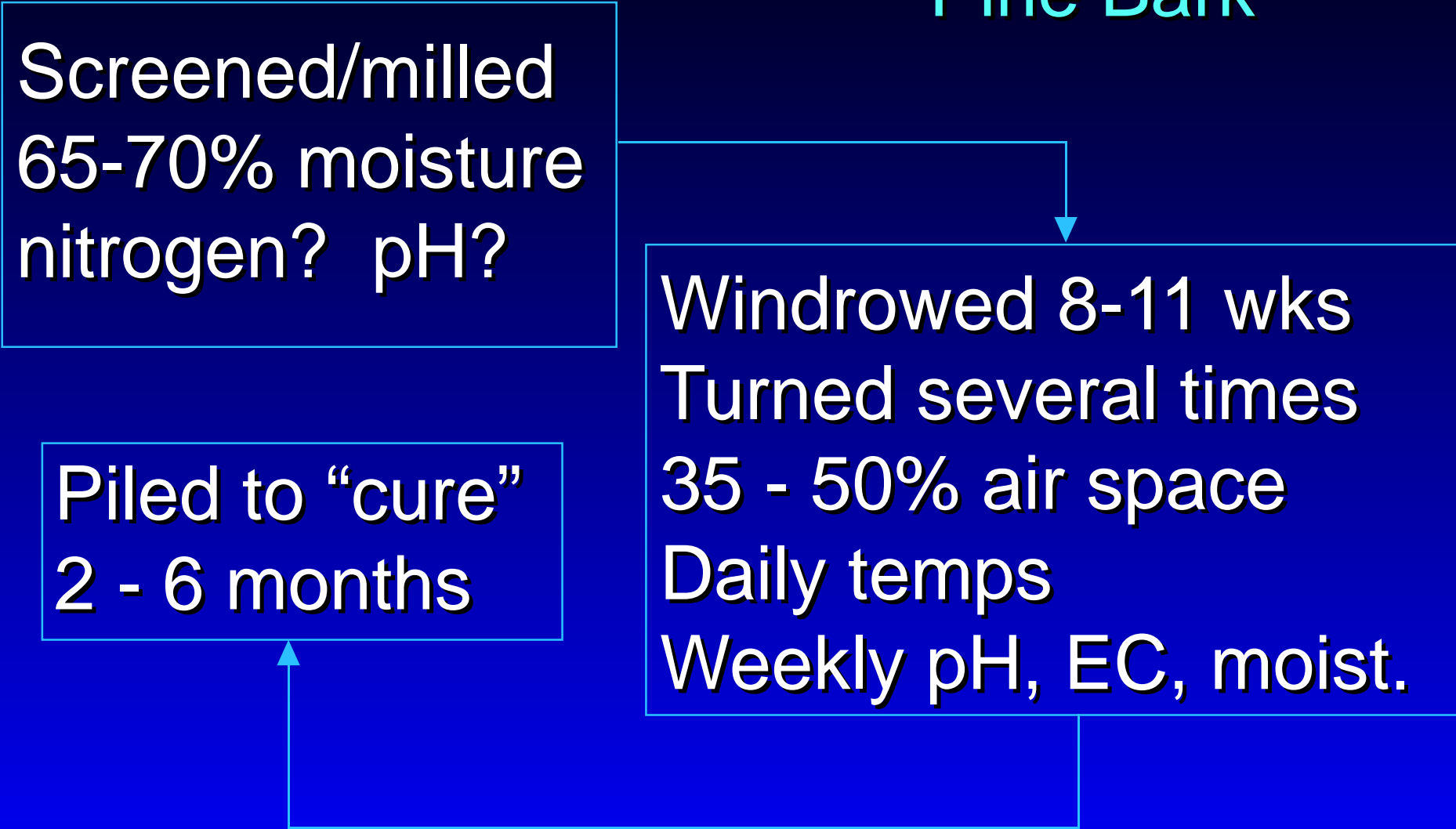
Composting

Process for Pine Bark

Screened/milled
65-70% moisture
nitrogen? pH?

Piled to "cure"
2 - 6 months

Windrowed 8-11 wks
Turned several times
35 - 50% air space
Daily temps
Weekly pH, EC, moist.



Organic Matter Aging

Different from Composting

▶ Aging

- Screen, windrow, turn infrequently
- Monitor temp, pH EC??

▶ Composting

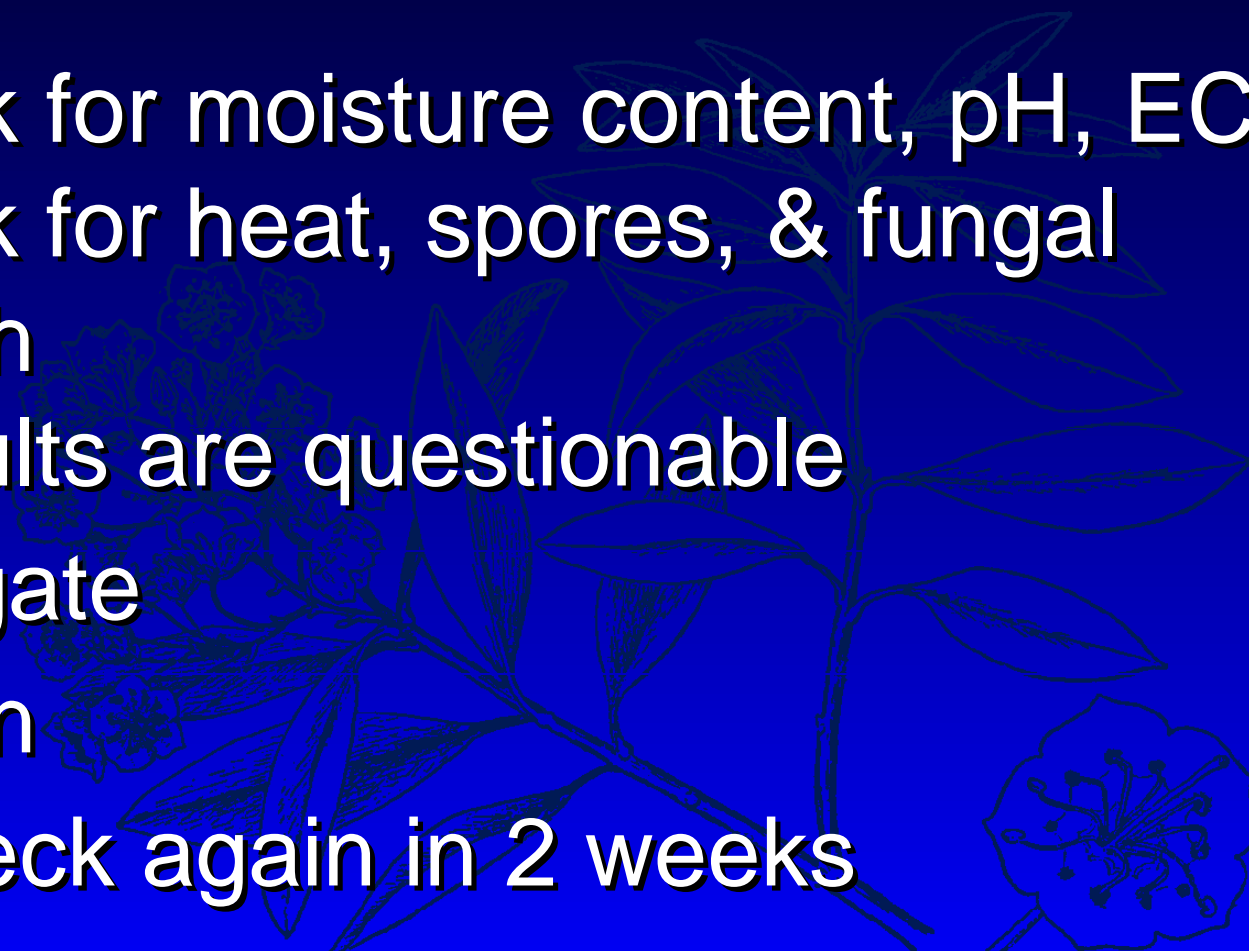
- Adjust C/N & moisture
- Turn frequently
- Monitor



Compost

Opening an Inventory Pile

- ▶ Check for moisture content, pH, EC
- ▶ Check for heat, spores, & fungal growth
- ▶ If results are questionable
 - Irrigate
 - Turn
 - Check again in 2 weeks



Compost Pile Height

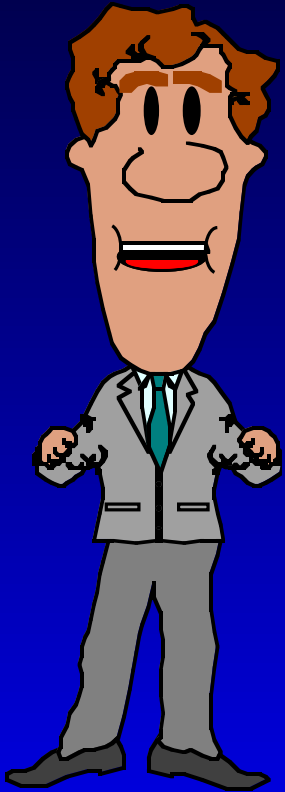
- ▶ Up to 8 feet with front-end loader
- ▶ Up to 15 feet with stacking conveyor

**NO DRIVING
ON PILES!!!**

**REDUCES
AERATION!!!**

Organic Matter

Low aeration in piles

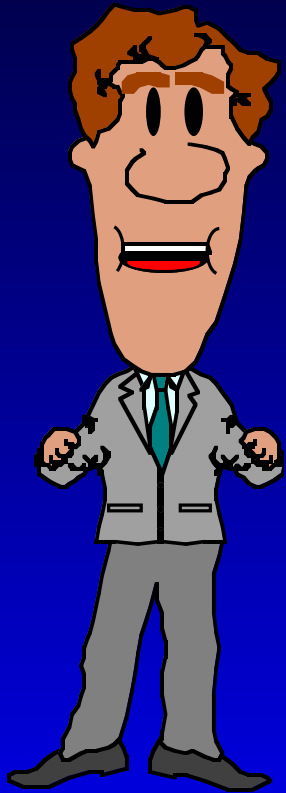


- ▶ Reduces air exchange
- ▶ Temps can reach $> 180^{\circ}\text{F}$
- ▶ Can lead to fires within piles
- ▶ Can cause “flash” fires
 - Fresh air infusion when pile is disturbed

Pine Bark

Low Moisture Content

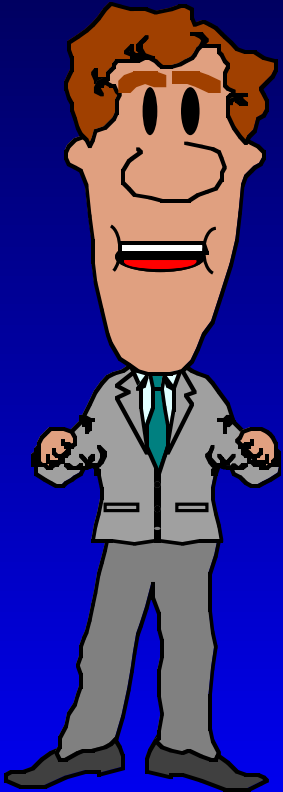
- ▶ Steam rising from piles indicates moisture loss
- ▶ Look for dry bands in the piles
- ▶ < 34% moisture, bark is very difficult to rewet
- ▶ Plants in dry bark may die from inadequate moisture retention
- ▶ Areas below dry bands may become “anaerobic”



Composts

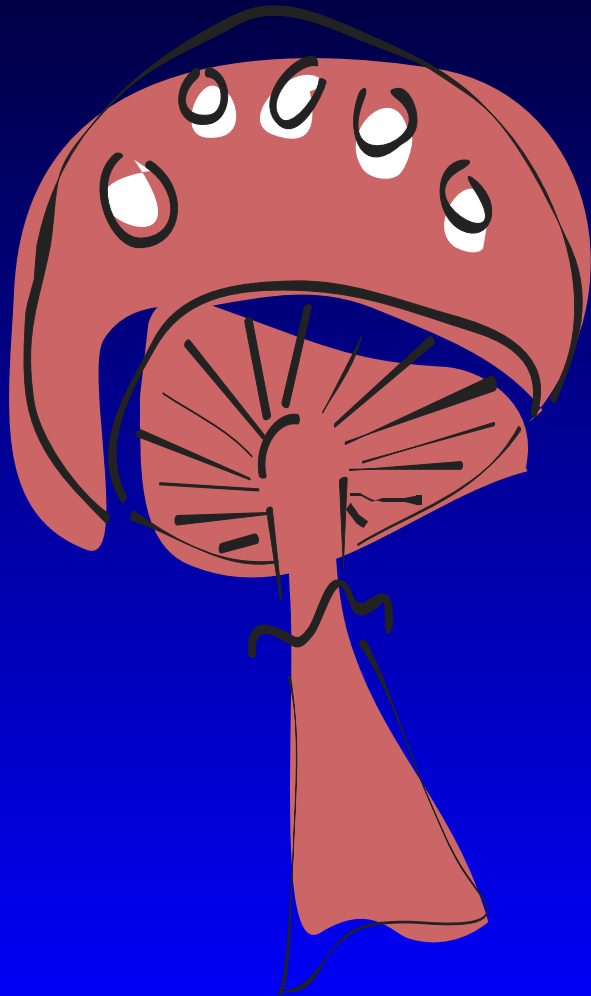
Anaerobic conditions create...

- ▶ Low pH (< 3.5)
- ▶ High EC (2.5 mmhos/cm)
- ▶ Cure
 - Turn pile
 - Irrigate
 - Check again in 2 weeks



Organic Matter

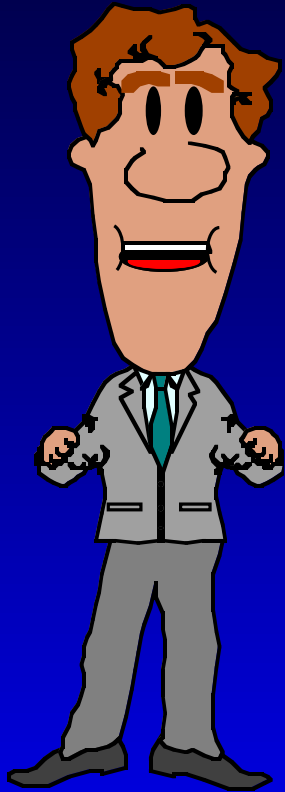
Unturned Piles



- ▶ May develop high fungal populations
 - Clouds of spores
 - Mycelial bands
- ▶ May develop more fungal growth in pots
 - Difficult to rewet!!

Organic Matter

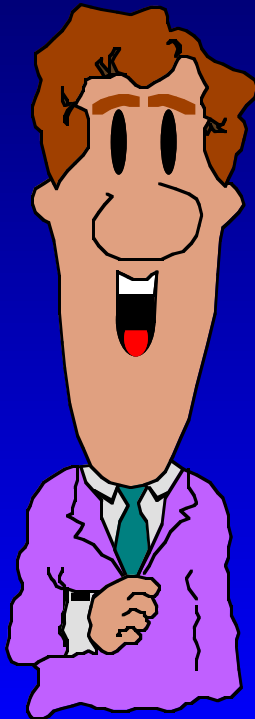
When new inventory is delivered..



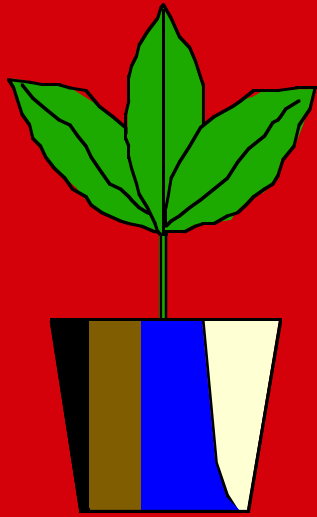
- ▶ Check loads as they arrive
- ▶ If hot, steamy, or has spores
 - Moisten new inventory
 - Check pH, EC
 - Observe for a few days for suitability

“Composts”

in
containers



Be very careful!
Make small trial first
Know your costs before
Know specific benefits



HORTICULTURAL SUBSTRATES LABORATORY

William C. Fonteno

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