



Recycling Food Residuals via On-Farm Composting

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March 31, 2010





Answers & Examples



WHY?

Why Composting?

- Capture the nutrients and *some* of the organic matter
- Reduce methane emissions



- Reduce transportation cost and energy
- Moisture for dry feedstocks
- Make *some* compost

Why *On-Farm* Composting?



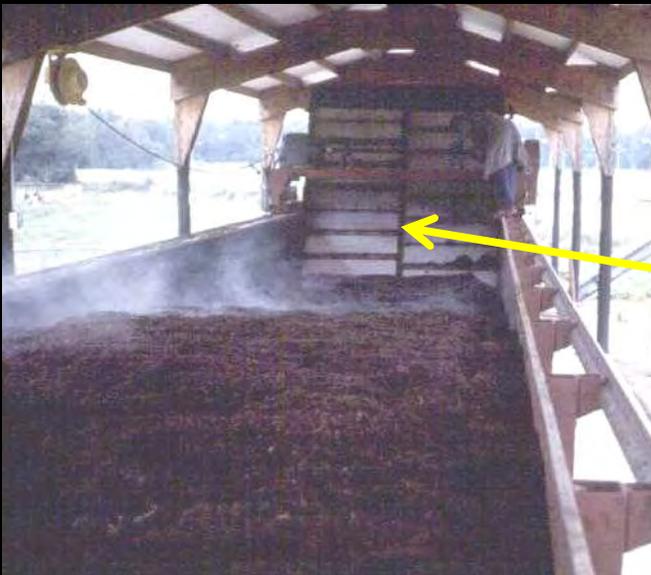
Photo source: Bruce Fulford (I think)



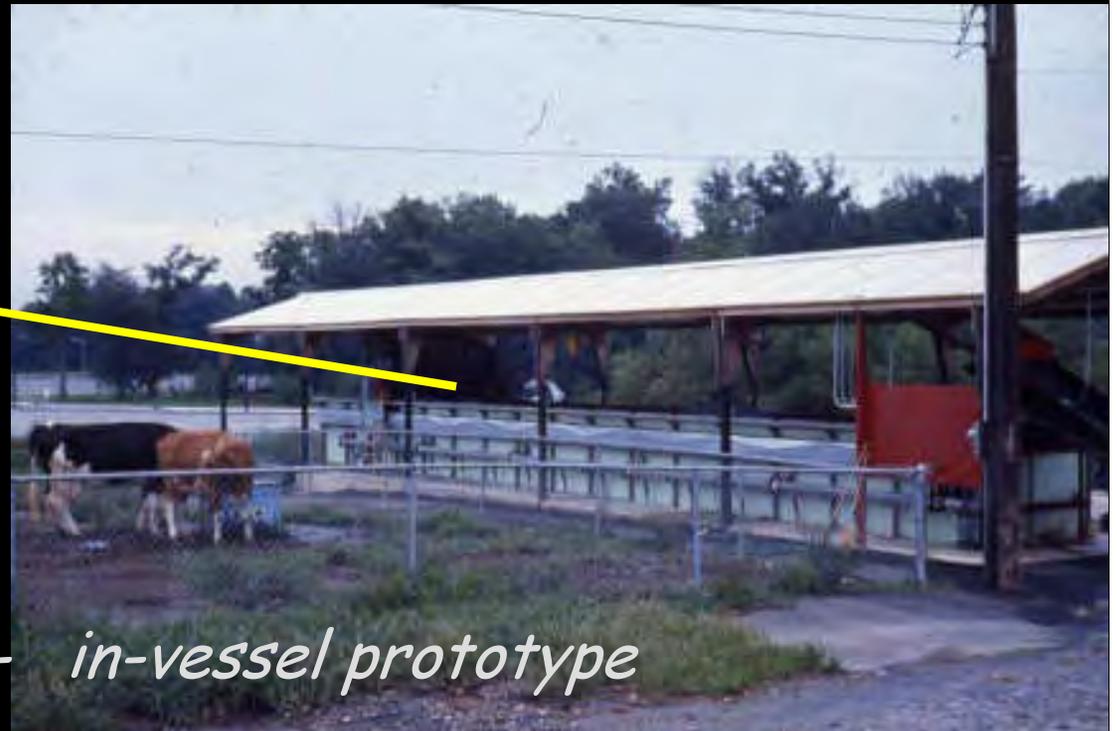
Ohio Feedlot

*Long composting
history on farms*

*Examples from
the early 1970's*



Univ. of Maryland farm -- in-vessel prototype





*Farmers
familiar with
food*



Relatively relaxed regulations



Available equipment and "know-how"



Space



Composting in fallow fields



*Composting in corners of
center-pivot irrigation*



Fields planted after composting

Farms can use the compost





Yard
trimmings
already
coming



Ample co-feedstocks and amendments



Why On-Farm Composting?

- Local
- Available land
- Inconspicuous land
- Odor-insulated
- Expertise
- Equipment
- Truck-ready
- Suitable amendments
- Sufficient volume of other feedstocks
- Decentralized
- Food returns to farm
- *A good place to do composting*

Good



Better



Anaerobic digestion (on-farm)
a good/preferred alternative



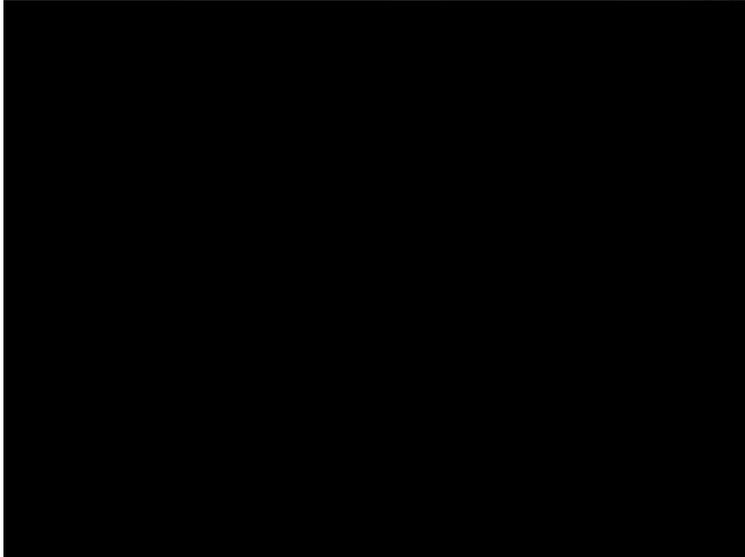
WHAT?

Culled produce





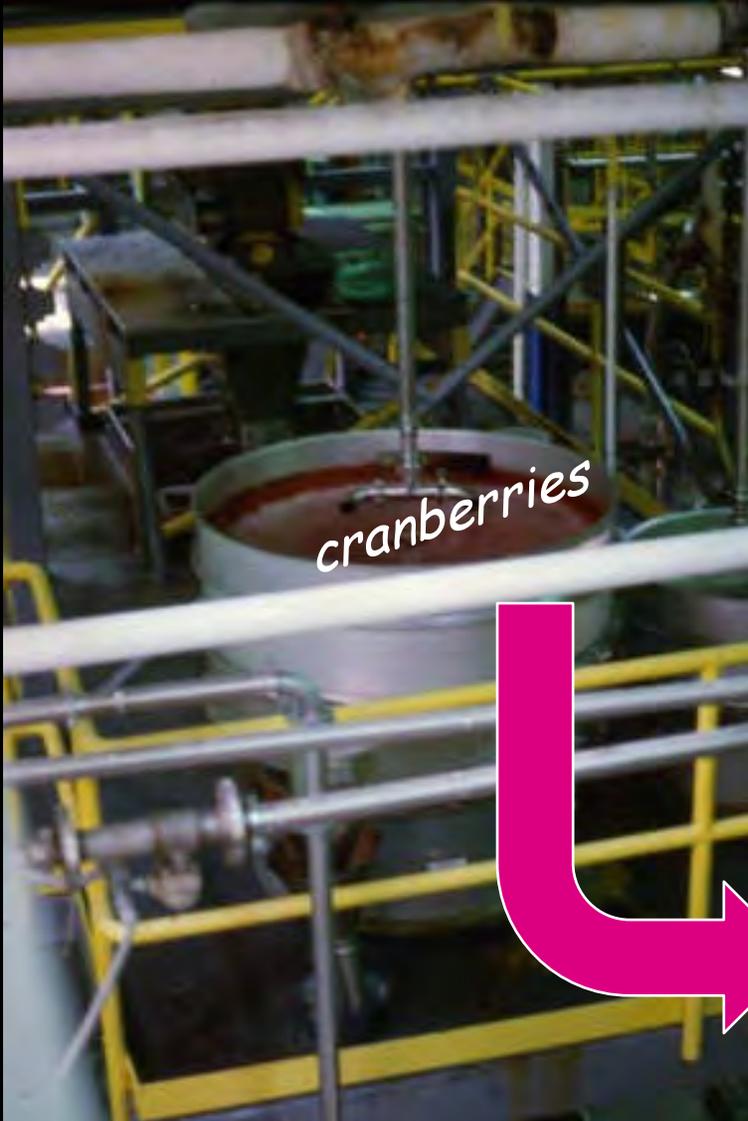
Pre-
consumer
produce



Post-
consumer
produce
plus



Processed produce



cranberries



Broccoli
from Pres. Bush (Senior) inaugural dinner





Ice cream



Real tomato paste

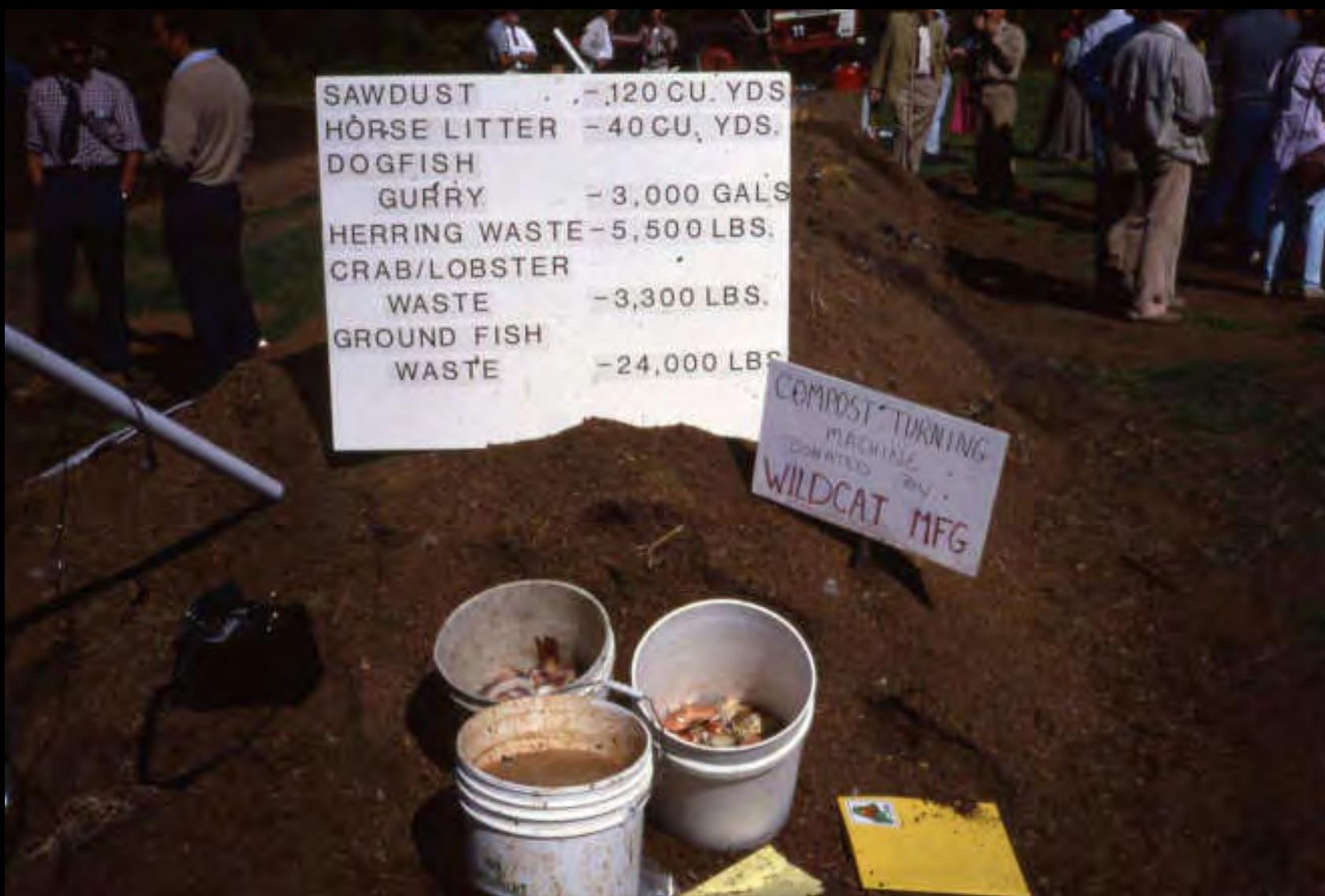
Sloppy
"produce"

Not-so
produce

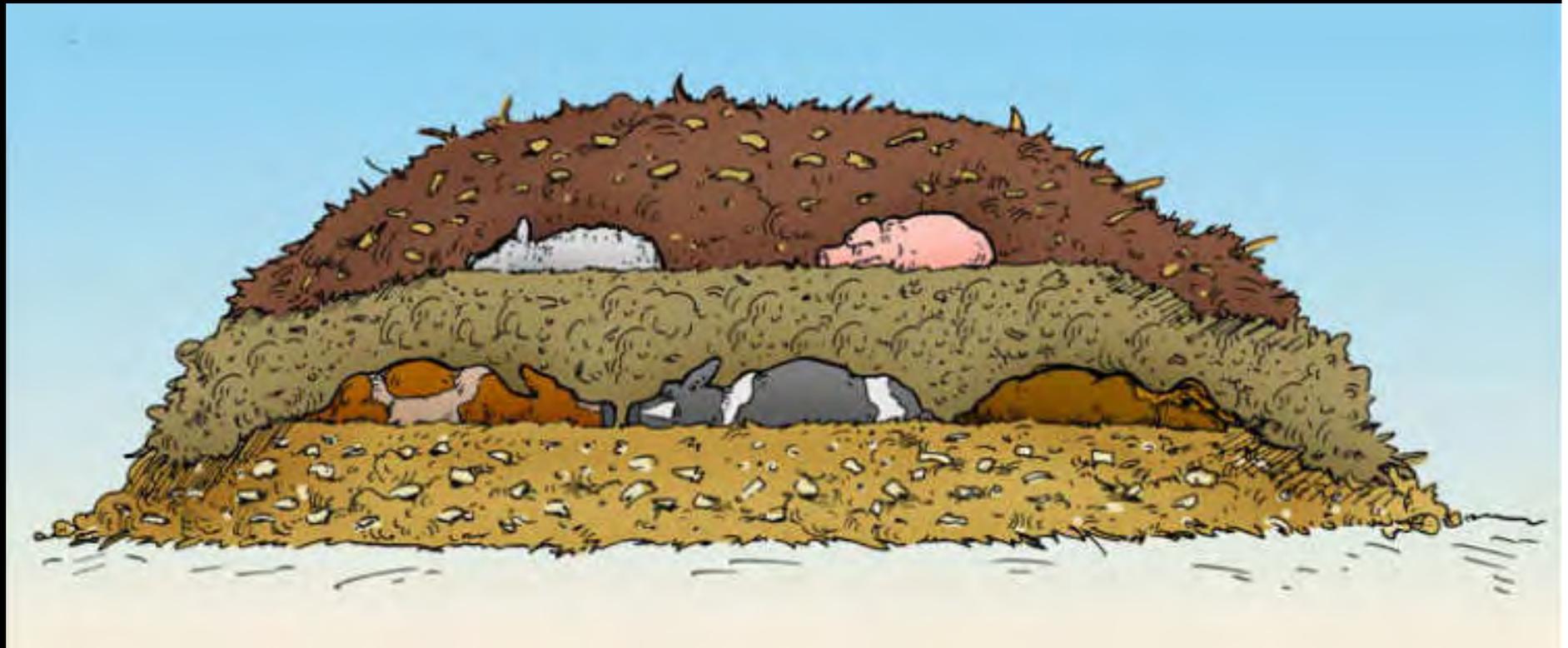


SAWDUST . . . -120 CU. YDS
HORSE LITTER -40 CU. YDS.
DOGFISH
GURRY - 3,000 GAL'S
HERRING WASTE -5,500 LBS.
CRAB/LOBSTER
WASTE -3,300 LBS.
GROUND FISH
WASTE -24,000 LBS.

COMPOST TURNING
MACHINE
DONATED BY
WILDCAT MFG



Passively aerated static pile for animal mortalities -- a success story



PhS: Cornell Waste Management Institute

Not all "food" is compostable





HOW?



Start off on
the RIGHT
footing





The WRONG
footing

Keep amendments
on hand



PhS: Doug Pinkerton, BioCycle



Potential for Pests

It is food





Liquids



Composting food
might include
collection



And cleaning

Plastic → the principal pest

*And
picking*



Table Manners

smart food practices

- Handle it promptly
- Keep it covered
- Contain it, as needed
- Watch the water
- Add porosity



Composting Methods

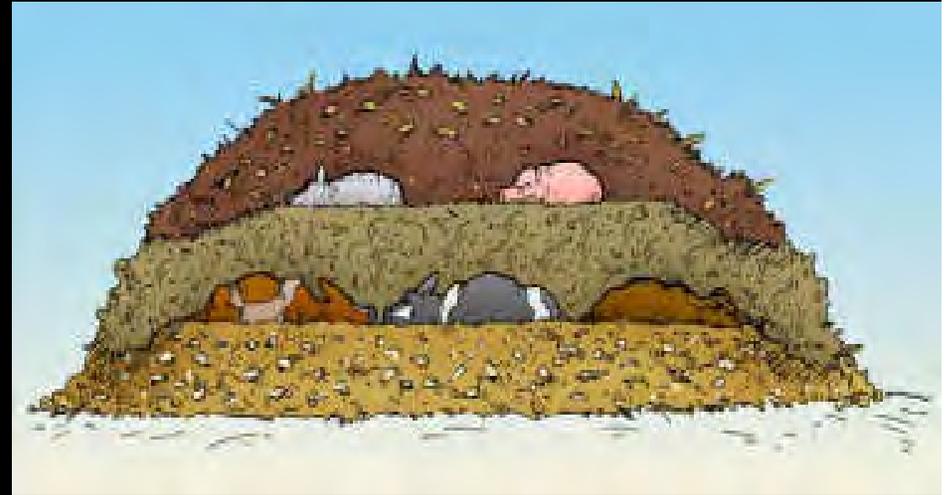
Open or enclosed
Passive or forced aeration
Turned or static



Open Passive Aeration turned or static

- passive static piles*
- assisted passive aeration*
- turned windrows*

Source: Cornell Waste Mgt. Institute





*manure + food + yard
trimmings + vegetation*

Turned windrows w/ covers

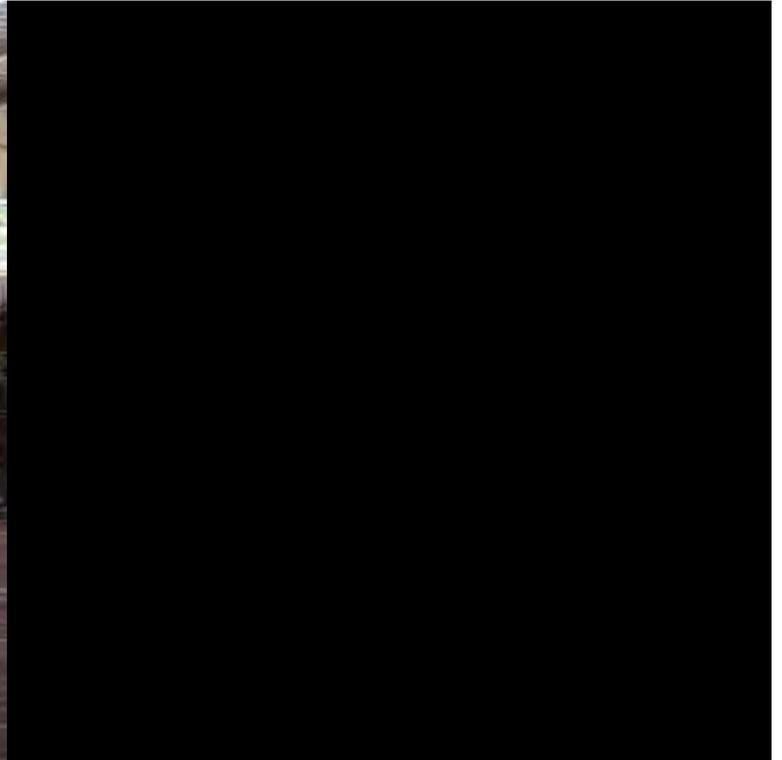
Tractor-powered straddle-type windrow turner

*Open Forced Aeration
- aerated static pile*



Enclosed Forced Aeration





*Aerated static pile
in bins*



Aerated bags (e.g. "Ag-bag")

plastic tube w/ outlet holes



Aerated & static
BUT
"contained"

Gore System

*Containment
may be required*



semi-permeable cover

Designed so that when hot air hits the fabric, it condenses and drips back in and helps control odors.

No biofiltration.

Cedar Grove Composting
Seattle, WA region

GORE covered systems
Aerated static piles

Photo source: David Riggle



Mixing
A necessity with
static systems





Size reduction
Often helpful
Sometimes necessary

Shredding bucket
- grocery produce
and cardboard

*Photo Courtesy of Roc Rutledge,
Ace Compost, LLC.*



*Vertical auger shredder/mixer -
dead livestock*

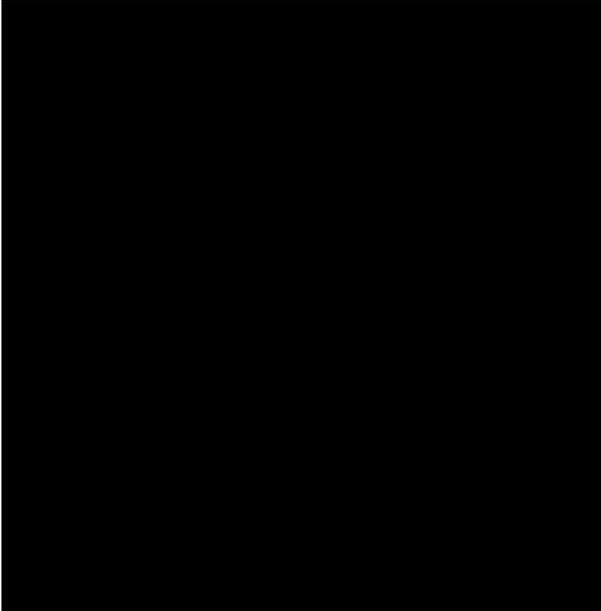
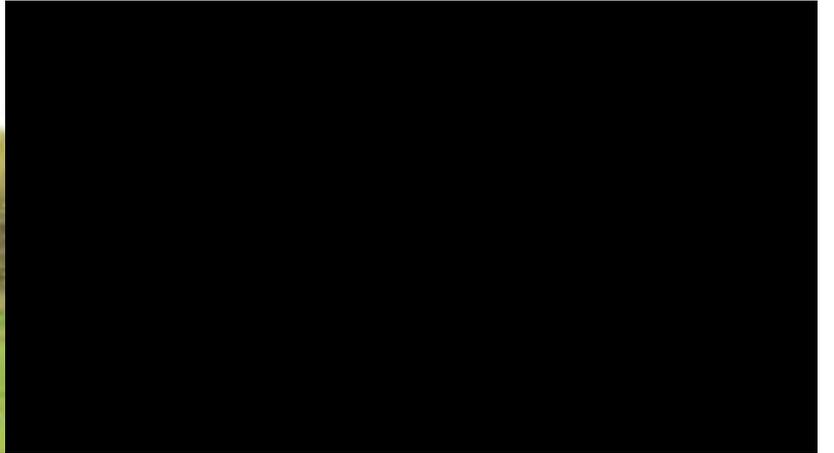
Farm-scale rotating drum



WHY NOT?









SAY "YES" to
COMPOSTING. ITS
good FARMING

CARROLL
CONCRETE
810-770-0147



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Fini

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