Recycling Food Residuals via On-Farm Composting

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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)*
Long composting history on farms

Examples from the early 1970's

Ohio Feedlot

Univ. of Maryland farm -- in-vessel prototype
Farmers familiar with food
Relatively relaxed regulations
Available equipment and “know-how”
Composting in fallow fields

Fields planted after composting

Composting in corners of center-pivot irrigation
Farms can use the compost
Yard trimmings already coming
Ample co-feedstocks and amendments
### Why *On-Farm Composting*?

<table>
<thead>
<tr>
<th>Local</th>
<th>Truck-ready</th>
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<tbody>
<tr>
<td>Available land</td>
<td>Suitable amendments</td>
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<tr>
<td>Inconspicuous land</td>
<td>Sufficient volume of other feedstocks</td>
</tr>
<tr>
<td>Odor-insulated</td>
<td>Decentralized</td>
</tr>
<tr>
<td>Expertise</td>
<td>Food returns to farm</td>
</tr>
<tr>
<td>Equipment</td>
<td><em>A good place to do composting</em></td>
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</tbody>
</table>
Anaerobic digestion (on-farm) a good/preferred alternative
WHAT?
Culled produce
Pre-consumer produce
Post-consumer produce plus
Processed produce

Broccoli from Pres. Bush (Senior) inaugural dinner

cranberries
Sloppy "produce"

Real tomato paste

Ice cream
Not-so produce
SAWDUST  - 120 CU. YDS.
HORSE LITTER  - 40 CU. YDS.
DOGFISH
GUTS  - 3,000 GALS
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
Turned windrows w/ covers
Tractor-powered straddle-type windrow turner

manure + food + yard trimmings + vegetation
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”

Containment may be required

Gore System

semi-permeable cover

Photo source: David Riggle
Mixing
A necessity with static systems
Size reduction
Often helpful
Sometimes necessary

Shredding bucket
- grocery produce
and cardboard

Vertical auger shredder/mixer -
dead livestock

Photo Courtesy of Roc Rutledge,
Ace Compost, LLC.
Farm-scale rotating drum
WHY NOT?
good
"YES" to
composting.
It's good farming.
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Fini

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