15 Years of Composting Adds Profit and Stewardship to Tabb Farm

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Tom Basden
Extension Specialist
Nutrient Management

Craig Yohn
Extension Agent
Ag. and Natural Resources

West Virginia University.

Tabb Farm, Jefferson Co. WV- 2001

- Third generation farm located in the Shenandoah limestone valley
- Reduced Ayrshire dairy herd from 300 to 150.
- Added 150 Angus cattle to enterprise
- The two brothers farm 2,300 acres; 1,400 acres in corn, soybean and wheat. The balance in hay and pasture.

Why add composting to a busy life?

- Karst Terrain, a sensitive area to farm
- Stabilize nutrients in manure
- Neighbor odor complaints with raw manure
- Rapid population growth near Wash. D.C; extra neighbors
- Early efforts showed reduction of wear on spreading equipment

Composting System Method, 2001

- Carbon source, Charles Town thoroughbred race track- 2000 tons/year
- Material handling system, roll-off dumpster bed truck
- Separation of liquid and solid manure
- Compost turner, loader
- Site development of windrow area

Front end loader, compost turner

Picket dam, solids in front, lagoon in back

Windrows close to manure storage and farm house

Initial mixing site to reduce moisture in manure

Addition of fresh manure to established pile

Wheat straw round bales used for bedding

Round bale grinder next to free stalls

Deep bedding, chopped wheat straw

Municipal leaves used as a sponge in the pit

Round bales of corn stover

County agent next to finished windrow

Hand full of worms from compost windrow

Innovative Method to Collect Compost Constituents

- The farm is NOT a waste hauler !!!
- Each container is rented to the organic materials generator, horsemen or home builders
- Container charge determined by hauling distance and contents of container. $250 for building materials; $300 for tree stumps
- The materials received by the farm are purchased for a nominal fee = $2.50 per container
- Tabb Farm is providing a service and paying for a commodity

Composting System - 2005

- Dairy herd sold, beef cattle enterprise retained
- Addition of stumps, tree debris, and lumber scraps from wooded lots and new construction sites
- This new material is chipped (tub grinder added) into bedding material for the horse and livestock industry.
- Trommel Screen added to produce horticultural grade compost and topsoil
- Additional roll on / roll off containers in circulation, over 100 at this time

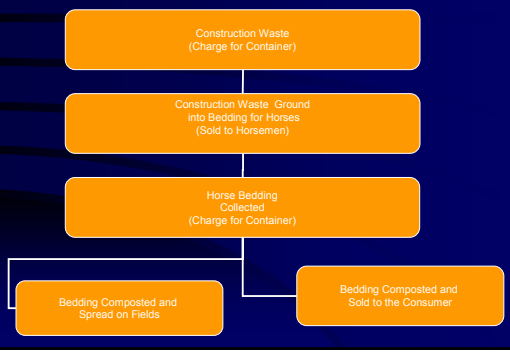
Composting System, 2005

Composting System, 2005

Organic Products Generated on Farm

- Horticultural mulch from tree debris and stumps
- Top soil screened from tree debris and stumps before they are ground
- Bedding material from lumber scraps
- Screened compost, horticultural grade
- Field compost, applied to crop fields

Nutrient/Carbon and Income stream



Utilization of finished compost

Thin layer of compost applied to fallow ground

Side delivery spreaders apply all compost

Pile of finished compost stored in the crop field

Conclusions

- Compost system emerging as the major enterprise of a livestock and crop farm
- Reduced threat of nitrogen runoff
- No neighbor odor complaints, and no spills on public roads
- Compost applied to all acres, before manure only applied to acres close to pit
- Windrows used to compost farm mortality; before animals were buried in the ground
- More material moved and handled with one additional full time family member and two other part time workers hired with heavy equipment\farm experience.
- 3 family members are drivers/ materials handlers

Conclusions

- Reduced lime applications raw manure has pH 4-5, compost pH of 6.8-7
- Reduced herbicide application rates due to destruction of weed seeds during compost process
- Compost used to meet Phosphorus needs of the crop, 9-12-15 per ton, then additional liquid N is side-dressed.
- P based planning
- Expensive equipment and maintenance added to the farm operation as the composting system has evolved.
- Steady source of cheap carbon, lumber scrapes, trees/stumps, sawdust, hay and horse manure from racetrack makes it work

What Next?

- Tabb Farms are capturing 20 cu. yards of wood from each new town house, 30 from each two story house.
- Need to quantify the reduction of organics going to the landfill using this resource recovery system.
- Need to quantify the application rates of compost to crop fields and determine the changes in stable carbon or OM of the amended soils on the farm.
- Can this system be transferred to other Mid Atlantic areas with similar development pressure?