Yahara Pride Farms Composting Trial

Hoffman Farms | Endres Berryridge Farms | Maier Farms

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Jason Fuller:
Compost pile turner & spreader
Helt Diversified
Nick Viney

On-Farm Composting Fact Sheet

SARE Project Number FNC15-991

Evaluating the Environmental Benefits & Economic Opportunities of
Windrow Composting Solid Dairy Manure

November 12, 2015

- Improve the physical soil properties: water infiltration, aggregate stability, and water-holding capacity.
- Because of its greater water-holding capacity, compost reduces erosion and is less likely to leach nutrients.
- Improve soil chemical properties: nutrient content and cation exchange capacity.
- Improve soil biological properties like disease suppression and nutrient cycling.
- Creation of a value-added product. Compost depending on market and quality can create another revenue stream for farmers.
- Composting reduces the manure weight and volume allowing the compost to be hauled farther and to lands that normally do not have manure spread on them.
- Composting is a method to control or kill weed seed and pathogens.
- An effective way to increase organic percentages in agricultural fields.
- Knowing where your feedstocks are coming from or where they have been is good management. Feedstocks exposed to herbicides like chloropyralid and aminopyralid (pyridine herbicides) can harm plants and remain active in compost.
- Composting does produce leachate. Preventing leachate production is the best way to not have a problem, but if leachate exists filter berms, berms, swales, and filter strips all are good best management practices for cleaning up runoff and leachate.
- On-farm composting can reduce the yield loss for the organic breakdown after field application.
- Compost can reduce the amount of conventional fertilizer used on fields.
- Compost reduces odors and reduces vector presents like flies and rodents.
- Composting does require time and management to make finished, quality product.
- Composting allows farmers another tool to manage manure and to develop an end product that fits their needs or wants: soil amendment, erosion control, heifer bedding, retail product, etc.

Fact sheet provided by:

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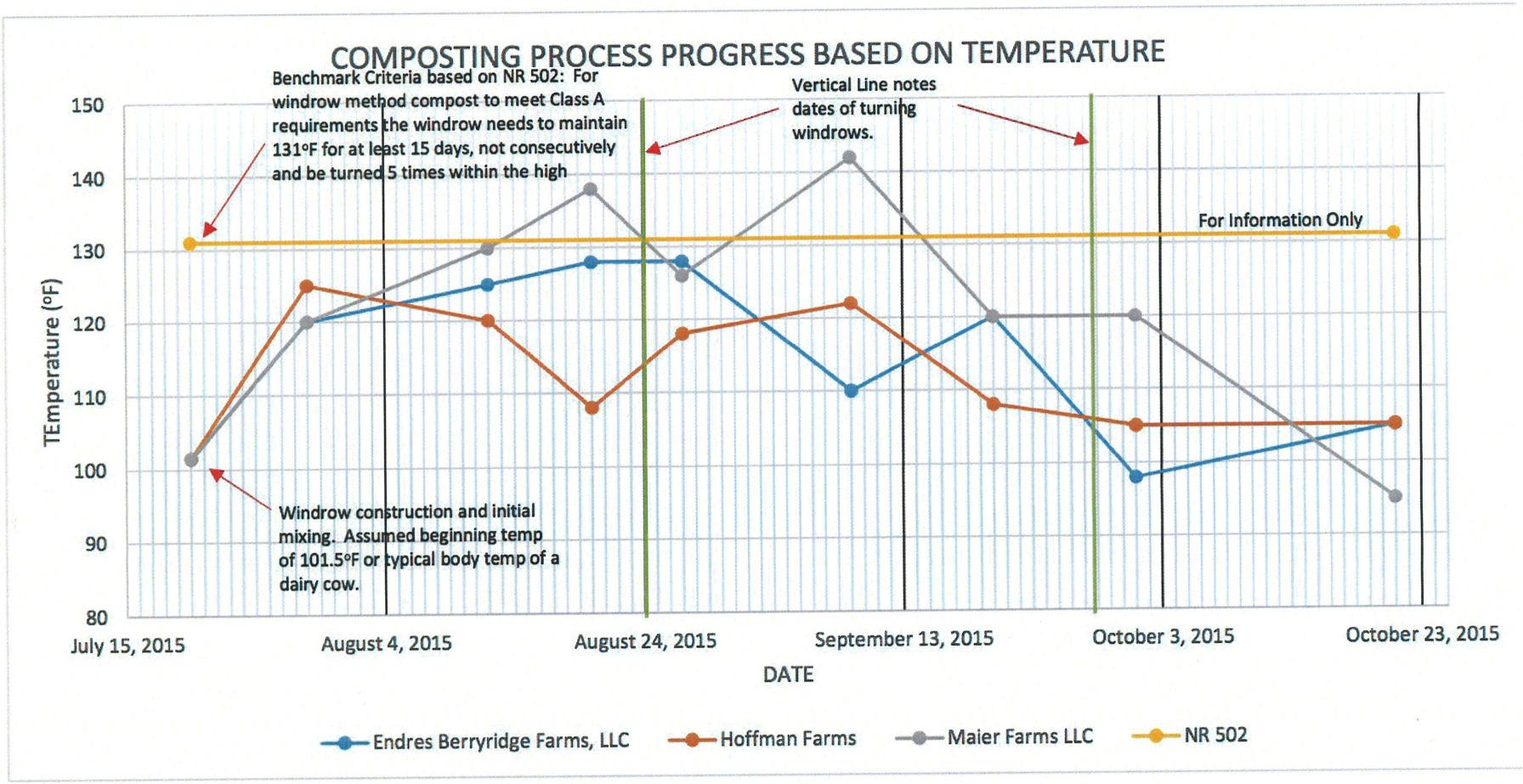

Graph provided by:

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Rock River Laboratory
P.O. Box 169
Watertown, WI 53094-0169
920-261-0446 Phone
office@rockriverlab.com

Manure Analysis Report

Account No. 992
Frontier-Servco FS Conven
9119 HWY 19
Mazomanie, WI 53560

Report for:
Endres Berryridge

LAB #: M-9406

2015 Manure Anaylsis Proficiency Program — MINNESOTA DEPARTMENT OF AGRICULTURE

2015 Certified Manure Testing Program — MINNESOTA DEPARTMENT OF AGRICULTURE

Date 7/22/2015

Sample #1 - West End South Pile Compost [Dairy (Solid)]

Moisture 54.54% **Dry Matter** 45.46%

All Values Reported in Pounds Per Ton on an As Is Basis

		Estimated Available Nutrient Credits for Manure		
	Total Nutrients	In 1st Year of Application	If Applied 2 Consecutive Years	If Applied 3 Consecutive Years
Total Nitrogen (Incorporated after 72 hours or not incorporated)	13.98	3.50	4.89	5.59
Total Nitrogen (Incorporated in 1 to 72 hours)	13.98	4.19	5.59	6.29
Total Nitrogen (Incorporated within 1 hour or injected)	13.98	4.89	6.29	6.99
Total Phosphorus as P2O5	11.47	9.18	9.18	9.18
Total Potassium as K2O	25.68	20.55	20.55	20.55
Sulfur	2.22	1.22	1.44	1.55

Ammonium Pounds Per Ton =0.02
Ammonium % of Total N =0.13

Manure Analysis and Nitrate Reports provided by:

INSIGHT FS

Samples Analyzed By:

UW Soil & Plant Analysis Laboratory
8452 Mineral Point Road
Verona, WI 53593
Phone 608-262-4364

PRE-SIDEDRESS SOIL NITRATE REPORT

COOPERATIVE EXTENSION
University of Wisconsin-Extension
University of Wisconsin-Madison
Soils Department, Madison, WI

Lab Number: 6393 **Date received:** 8/26/2015 **Account:** 555419 **Client:** ENDRES BERRY RIDGE

County: Dane **Date processed:** 9/10/2015

Send to:

Frontier FS Cooperative (Mazomanie) -
9119 Hwy 19
Mazomanie, WI 53560

LABORATORY ANALYSIS

Field ID	Sample ID	NO_3-N ppm
Blwg-nxt t	1	9.25
Blwg-nxt t	2	5.05
Blwg-undr	1-1	37.75
Blwg-undr	1-2	4.41
Blwg-undr	2-1	24.05
Blwg-undr	2-2	3.85
Blwg-undr	3-1	11.4
Blwg-undr	3-2	2.98

RECOMMENDATIONS

Nitrogen Credits for Corn[1]

PSNT Result ppm N	Soil Yield Potential[2] High — N Credit, lb/a	Medium — N Credit, lb/a
≥ 21	No additional N is needed.	
18-20	100	80
15-17	60	80
13-14	35	40
11-12	10	40
≤ 10	0	0

1 Subtract these N credits from the target N application rate. The target N application rate can be determined using the Maximum Return to N (MRTN) approach outlined in Table 6.1 on page 38 of UWEX publication "Nutrient Application Guidelines for Field, Vegetable, and Fruit Crops in Wisconsin" (A2809).

2 To determine a soil's yield potential, consult Table 4.1 in UWEX publication "Nutrient Application Guidelines for Field, Vegetable, and Fruit Crops in Wisconsin" (A2809), or contact your agronomist or county agent.

Notes:

Interpretations assume a 0-12 inch sampling depth was used.

This test may underestimate the N contributions from organic N sources such as manures and previous legume crops when temperatures during the six weeks before sampling are below the long term average.

For first year corn following alfalfa, no more than 40 lb N/a should be applied for all PSNT results less than 21 ppm N.

PSNT cannot be interpreted on sand and loamy sand soils.

Wisconsin research with the PSNT shows that optimum N rates for corn are sometimes overestimated when average temperatures in May-June are more than 1 degree F below the long-term average (Andraski and Bundy, 2002). Where the PSNT is used to adjust N rates for N contributions from organic N sources in growing seasons with below normal average temperatures for May and June, users should consider the book value N credit for the manure applications or the previous legume crop together with the PSNT N credit in arriving at an N application rate decision.

SAMPLE 1 West End South Pile Compost 2015

1) Nitrogen (Compared to Urea 46-0-0)
   a. 2000 * .46= 920lbs N
   b. $325 per Ton / 920lbs N= .35 Cents/ Unit
   c. .35 cents * 13.98 lbs =**$4.89/TON**

2) Phosphorus (Compared to 0-44-0, Triple Super Phosphate)
   a. **Converted 11.47 P205**
      i. $465 per ton / 880.00 = .528 Cents per LB * 11.47 LBs = **$6.06/ Ton of Compost**
      ii. Equivalent to spreading

3) Potassium (Compared to 0-0-60)
   a. **Converted 25.68 K20**
      i. 2000# *.60 = 1200 of Potassium
      ii. $340/Ton / 1200# = $.283 per unit
      iii. $.283 per unit * 25.68 # K20 **= $7.27 per Ton of Compost**

- Total Value of Compost per Ton**= $18.22 per Ton**
  - **(Does not include labor or machinery use)**

- Value per acre= **14N-11.5P-26K or $4.89/$6.06/$7.27**

- **TO equal One ton of Compost, you would have to spread**
  - **30# Urea**
  - **26# Triple Super Phosphate**
  - **43# Potash**

Jacob Getz (Crops Specialist) and Scott Evans (Nutrient Management) Frontier-Servco FS