

SUBMITTED BY:

OHIO UNIVERSITY
SCOTT BLOWER/FACIL.MGMT
1 RIVERSIDE DRIVE
ATHENS, OH 45701-2979
ACCOUNT NO.: T5302

SUBMITTED FOR:

REPORT DATE: MARCH 31, 2010
REPORT REF.: 2036.022

COMPOST ANALYSIS REPORT

LAB NO.: 571010

SAMPLE ID: IN VESSEL FACILITY COMPOST

TEST PACKAGE: OHIO EPA COMPOST TESTS (OEPA 3745-27-46)

TEST	RESULTS	UNITS
pH	8.7	SU
Salinity	1.2	mS/cm
Total Nitrogen	1.96	% dw
Total Organic Carbon	14.7	% dw
Total Phosphorus	3,620	mg/kg dw
Total Potassium	8,270	mg/kg dw
Total Boron	48.6	mg/kg dw
Foreign Matter	0.35	% dw

TEST METHOD: Conforms to Ohio EPA Analytical Methods given in Table 4 and Table 5.

*Note: this
test cost ou
about \$500*

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TYPE OF ANALYSIS: MICROBIAL (40 CFR 503 PFRP)

TEST PARAMETER	RESULTS	ALLOWABLE LIMIT	UNITS
FECAL COLIFORMS (MPN)	12	< 1,000	Org/gm TSDW
SALMONELLA (MPN)	< 0.24	< 3.0	Org/4gm TSDW

Analysis performed by Superior Laboratories, Inc., Columbus, OH. (OEPA Coliform Lab Approval No.890). Methods of analysis conform to those described for Class A-Alternative 5 PFRP (40 CFR 503 PFRP) and Ohio EPA Table 3, SM-9221E and 9260D. Results expressed as Most Probable Number (MPN) of organisms per gram total solids dry weight (TSDW) for fecal coliforms and as Most Probable Number (MPN) of organisms per 4 grams total solids dry weight (TSDW) for salmonella.

THE COMPOST MATURITY INDEX

The *Maturity Index* of any compost sample may be judged in Table I below, using both color test results from paddle A and C. This Index number is later used for the interpretations in Tables 2, 3, 4, and 8.

For composts with low ammonia (color chart numbers 4 or 5), the Maturity Index is the same as the CO₂-color chart number. However, with high ammonia levels the Maturity Index may be less than it appears from the CO₂ result. The reason is that ammonia can inhibit microbial activity, interfere with the CO₂ test and by itself is dangerous for compost use on plants.

Table 2 presents a visual overview of how the two tests together tell something about the nature of the compost and the process.

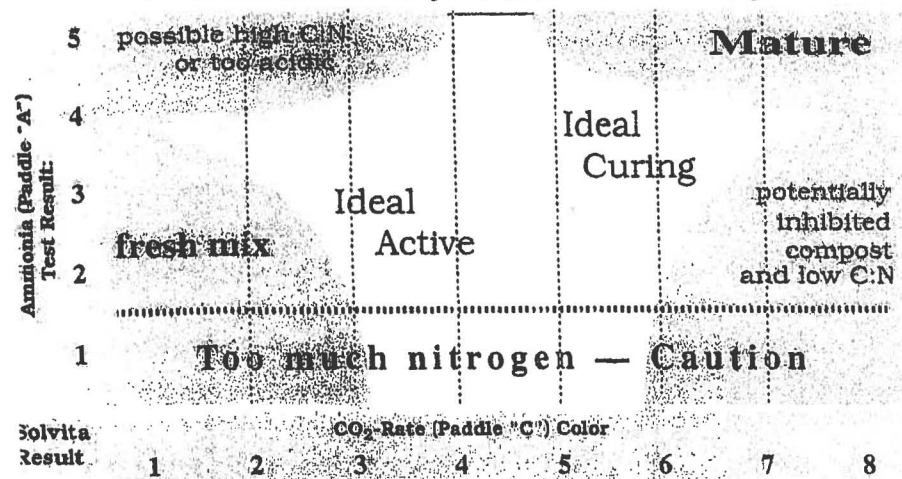
TABLE #1: Compost Maturity Index Computation Table^a

use the A and C paddle color numbers and read across and down to where the columns meet

		CO ₂ -Rate (Paddle "C") Test Result is:								
		1	2	3	4	5	6	7	8	
Ammonia (Paddle "A") Test Result is:	5	Very-Low NH ₃	1	2	3	4	5	6	7	8
	4	Low NH ₃	1	2	3	4	5	6	7	8
	3	Medium NH ₃	1	1	2	3	4	5	6	7
	2	High NH ₃	1	1	1	2	3	4	5	6
	1	Very-High NH ₃	1	1	1	1	1	2	3	4

a. Example: If the NH₃ result is 2, and the CO₂ result 6, then the Maturity Index is 4

TABLE #2: Overview of Compost Condition and Solvita Ratings



INTERPRETING SOLVITA® MATURITY INDEX RESULTS

As compost ages, it normally goes from a fresh condition (Solvita Index #1-2) to a mature state (Solvita Index #7-8). The changes may take weeks to several months. The actual time depends on the materials and prevailing conditions during composting. The Maturity Index is determined from both Solvita tests and normally increases as both the CO₂-rate and ammonia levels decline and/or disappear. These factors in turn influence how compost is perceived and ultimately how it behaves when used.

TABLE #3: Solvita® Compost Maturity Index and Other Indexes

IF SOLVITA MATURITY INDEX IS:	THE STAGE OF THE COMPOSTING PROCESS IS:	Correlation with other maturity indicators ^a			
		DEWAR (b)	CO ₂ Rate (c)	O ₂ -Rate (d)	
8.	Inactive, highly matured compost, very well aged, possibly over-aged, like soil; no limitations for usage	"FINISHED" COMPOST	V	1	<3
				2	5
7.	Well matured, aged compost, cured; few limitations for usage	"ACTIVE" COMPOST		4	11
6.	Curing; aeration requirement reduced; compost ready for piling; significantly reduced management requirements		IV	6	16
5.	Compost is moving past the active phase of decomposition and ready for curing; reduced need for intensive handling		III	8	21
4.	Compost in medium or moderately active stage of decomposition; needs on-going management	"RAW" COMPOST	II	10	27
3.	Active compost; fresh ingredients, still needs intensive oversight and management		I	12	32
2.	Very active, putrescible fresh compost; high-respiration rate; needs very intensive aeration and/or turning	"RAW" COMPOST		>15	>40
1.	Fresh, raw compost; typical of new mixes; extremely high rate of decomposition; putrescible or very odorous material				

a. Approximate correspondence based on average organic matter and density.

b. DEWAR = Dewar self-heating test, a standard procedure in the U.S., Europe & Australia

c. CO₂ Rate = total mg CO₂-C evolved per g VS per day

d. O₂ Rate = mg oxygen (O₂) consumed per g VS per day