



Anaheim Office
May 3, 2021
Report 21-112-0030

Zanker Landscape Materials
675 Los Esteros Road
San Jose, CA 95134

Attn: Marin

RE: Rototiller Mix processed on 4/22/2021

The first sheet is the actual test data and the second sheet is a calculated table showing the percent of each required nutrient that is now readily available compared to the total present. Further decomposition of the organic fraction will release many of these nutrients as available for plant utilization. The third sheet evaluates the potential rate limiting factors in the top table and in this case, there are no chemical characteristics that would limit the rate to less than normally employed for amendments. The only rate limiting factor for this material **when used for direct planting** would be boron which is slightly elevated. The bottom table on that sheet uses an example rate of 33%. At the example rate, the degree to which the compost would satisfy the immediate requirement for each nutrient is indicated.

Approximately 98% of the amendment passes the 6.4 mm (1/4 inch) screen and 81% passes the 2.36 mm (about 1/8 inch). The amount of very fine material present indicates this material will have potential for issues with dustiness at the low as-received moisture level. Actual organic matter content is favorable at 299 pounds per cubic yard. Organic matter comprises 30% of the material by dry weight.

The carbon to nitrogen ratio of 32 it is favorable and there should not be much in the way of nitrogen draw as this material further decomposes. The initial level of available nitrogen is favorable.

At the example rate of 33% volume this amendment would provide a favorable amount of organic matter to benefit soil structure and satisfy the organic matter need for most soil types. At this rate the amendment would also provide a significant nutrient contribution of immediately available potassium, magnesium, manganese and sulfate. These contributions at the example rate are noted on the last page. This volume rate is equivalent to 6.2 cubic yards per 1000 square feet for blending to 6 inches depth. This would be adding 1854 pounds organic matter, which would increase organic content of a sandy loam soil by about 5.8% on a dry weight basis.

Reaction is slightly alkaline at a pH of 7.4. Salinity and soluble levels of sodium, chloride and boron are safely low for use at the recommended rate of incorporation. If this material will be used for direct planting it should receive a thorough initial irrigation with good quality water in order to decrease the boron level to a safer range.

The table that follows the data page shows what nutrients are present in total amounts as well as what portion is immediately available. For convenience these results are expressed both on a cubic yard basis and as weight of nutrient and organic matter per as-received ton of Rototiller Mix. Further release from the organic complex will continue to help satisfy plant needs for many of the nutrients.



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If we can be of any further assistance, please feel free to contact us.

A handwritten signature in black ink that reads "William Darlington". The signature is written in a cursive, flowing style.

William Darlington, M.S., CCA

wdarlington@wpacorp.com

COMPOST / AMENDMENT EVALUATION

Send To : Zanker Landscape Materials 675 Los Esteros Road San Jose CA 95134	Project : Rototiller Mix	Report Number : 21-112-0030 Customer Number : 01002 Date printed : 04/27/2021 Date received : 04/22/2021 Page : 1 of 3 Lab Number : 90540
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Sample Id : **Rototiller Mix**

Nutrient	Total - Dry Weight	Extractable - Dry Weight	Saturation Extract	Sufficiency Factor
Nitrogen (N)	0.56 %	97 ppm		1.1
NH ₄ -N		55 ppm		
NO ₃ -N		42 ppm		
Phosphorus (P)	0.1 %	85 ppm		1.6
Phosphorus (P ₂ O ₅)	0.23 %	195 ppm		
Potassium (K)	0.32 %	1411 ppm	12.5 meq/L	4.9
Potassium (K ₂ O)	0.39 %	1707 ppm		
Calcium (Ca)	2.26 %	1514 ppm	5.8 meq/L	0.6
Magnesium (Mg)	1.67 %	501 ppm	4.3 meq/L	1.5
Sodium (Na)	0.11 %		13.4 meq/L	
Sulfur (S)	0.05 %			
Sulfate (SO ₄)			8.3 meq/L	2.8
Chloride (Cl)			13.6 meq/L	
Copper (Cu)	48.2 ppm	0.5 ppm		0.2
Zinc (Zn)	88.4 ppm	5 ppm		0.7
Manganese (Mn)	460 ppm	9 ppm		0.6
Iron (Fe)	37700 ppm	15 ppm		0.2
Dilute Acid Fe		0.28 %		
Boron (B)	48.9 ppm		1.15 ppm	3.8

Test	Result
pH (sat paste)	7.4 s.u.
% Half Sat.	45
TEC	149 meq/kg
Qualitative Lime	Low
Salinity (EC of sat ext.)	2.6 dS/m
SAR (Sodium adsorption ratio)	5.99
Sodium as % of ECe	46 %
Bulk Density - Dry	999 lbs/yd ³
Bulk Density - As Received	1146 lbs/yd ³
Moisture - As Received	12.8 %
Organic	29.9 %
Weight of organic / yd ³	299 lbs/yd ³
Weight of mineral / yd ³	701 lbs/yd ³
C/N Ratio	32.0

Gradation	
Wt Percent Retained 1"	0.0 %
Wt Percent Retained 1/2"	0.4 %
Fraction Passing 1/2 inch Screen - Dry Weight Basis	
Screen Opening	% Passing
Passing 9.5mm	100.0 %
Passing 6.4mm (1/4")	98.2 %
Passing 4.75mm	94.3 %
Passing 2.36mm	81.0 %
Passing 1.00mm	62.7 %
Passing 0.50mm	28.6 %

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NUTRIENT SUMMARY

Test	Amount Per Cubic Yard				Amount Per Ton, As Rec'd				Available as a % Of Total
	Total		Available		Total		Available		
Nitrogen	5.59	lbs	0.1	lbs	9.77	lbs	0.17	lbs	2
Phosphorus (P)	0.97	lbs	0.08	lbs	1.69	lbs	0.15	lbs	9
Phosphorus (P ₂ O ₅)	2.21	lbs	0.19	lbs	3.86	lbs	0.34	lbs	9
Potassium (K)	3.21	lbs	1.41	lbs	5.6	lbs	2.46	lbs	44
Potassium (K ₂ O)	3.88	lbs	1.71	lbs	6.78	lbs	2.98	lbs	44
Calcium	22.56	lbs	1.51	lbs	39.39	lbs	2.64	lbs	7
Magnesium	16.71	lbs	0.5	lbs	29.18	lbs	0.87	lbs	3
Sulfur	0.54	lbs	0.12	lbs	0.94	lbs	0.21	lbs	22
Copper	0.77	ozs	0.01	ozs	1.34	ozs	0.01	ozs	1
Zinc	1.41	ozs	0.09	ozs	2.47	ozs	0.15	ozs	6
Manganese	7.35	ozs	0.14	ozs	12.84	ozs	0.25	ozs	2
Iron	602.6	ozs	0.24	ozs	1051.98	ozs	0.42	ozs	0
Boron	0.78	ozs	0.02	ozs	1.36	ozs	0.03	ozs	2
Organic Matter	299	lbs			521	lbs			

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POTENTIAL RATE LIMIT FACTORS

Test	% Volume rate limit	Cubic yard amendment per 1000 sf to 6"							
		1	2	3	4	5	6	7	8
		Volume % amendment blend with sandy loam							
		5	11	16	22	27	32	38	43
EC sat. ext.	100 %								
Sodium sol.	No Limit								
Chloride sol.	No Limit								
Boron sol.	76 %								
NH ₄ -N	No Limit								
Available									
Nitrogen	No Limit								
PO ₄ P	No Limit								
Copper	No Limit								
Zinc	No Limit								

Rate limit estimates based on amending a non-problematic sandy loam

RELATIVE IMMEDIATE NUTRIENT AND ORGANIC VALUE

* Example Rate 33 %	Slight	Moderate	Abundant
Nitrogen			
Phosphorus			
Potassium			
Calcium			
Magnesium			
Copper			
Zinc			
Manganese			
Iron			
Sulfate			
Organic Matter			

* If no chemical characteristics are rate limiting, the example rate is based on organic content of the amendment (up to a max of 43%).

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