



How to Develop Maryland Nutrient Management Recommendations Using Saturated Media Extract Results (11/12/2020)

Introduction This document describes how to develop recommendations for crops grown in organic materials using results from saturated media extract (SME) analysis.

What is a Saturated Media Extract? A saturated media extract is an analysis conducted by agricultural testing laboratories when plants are grown in:

- Soil/organic mixture made with greater than 50% organic materials by volume (e.g. peat, coir, compost, woodchips, etc.)
- Potting mix or artificial media (commercial growing media)

Samples should be:

- taken in the same fashion as soil analyses according to the guidance here: go.umd.edu/soil_testing
- sent to labs according to the “Growing Media Lab Comparison” guidance here: go.umd.edu/lab_comp

How to write a NMP using Saturated Media Extract Analysis Results The following table describes the process for using results from a saturated media extract analysis:

Stage	Description																																								
Convert results to media test category	<ul style="list-style-type: none"> • From the results on your SME, use the table below to determine the interpretive category for each nutrient: 																																								
<table border="1"> <thead> <tr> <th></th> <th colspan="4">SME Interpretive Categories</th> </tr> <tr> <th>Analysis</th> <th>Low</th> <th>Medium</th> <th>Optimum</th> <th>Excessive</th> </tr> </thead> <tbody> <tr> <td>Soluble salt, dS/m</td> <td>0-0.75</td> <td>0.75-2.0</td> <td>2.0-3.5</td> <td>3.5+</td> </tr> <tr> <td>Nitrate-N mg/L</td> <td>0-39</td> <td>40-99</td> <td>100-199</td> <td>200+</td> </tr> <tr> <td>Phosphorus mg/L</td> <td>0-2</td> <td>3-5</td> <td>6-10</td> <td>11+</td> </tr> <tr> <td>Potassium mg/L</td> <td>0-59</td> <td>60-149</td> <td>150-249</td> <td>250+</td> </tr> <tr> <td>Calcium mg/L</td> <td>0-79</td> <td>80-199</td> <td>200+</td> <td>-</td> </tr> <tr> <td>Magnesium mg/L</td> <td>0-29</td> <td>30-69</td> <td>70+</td> <td>-</td> </tr> </tbody> </table>			SME Interpretive Categories				Analysis	Low	Medium	Optimum	Excessive	Soluble salt, dS/m	0-0.75	0.75-2.0	2.0-3.5	3.5+	Nitrate-N mg/L	0-39	40-99	100-199	200+	Phosphorus mg/L	0-2	3-5	6-10	11+	Potassium mg/L	0-59	60-149	150-249	250+	Calcium mg/L	0-79	80-199	200+	-	Magnesium mg/L	0-29	30-69	70+	-
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<ul style="list-style-type: none"> • *These guidelines are suitable for use with results obtained by either water or DPTA extraction (Table adapted from: <i>Warnke, Daryl. Chapter 13: Recommended Test Procedures for Greenhouse Growth Media. Recommended Soil Testing Procedures for the Northeastern United States. Northeastern Regional Publication No. 493, 3rd Edition</i>) 																																									

Compare results to Fertility Index Value (FIV)	SME Interpretative Categories	FIV Range	
	Low	0-25	
	Medium	26-50	
	Optimum	51-100	
	Excessive	>100	
Enter in <i>NuMan Pro 5.0</i> Software	<ul style="list-style-type: none"> • Enter farmer/consultant and field information, then click on soil tab • Select “U. of Maryland” as the lab (annotate the actual lab on the NuMan soil printout) and enter test date and test number from the SME analysis • Select “Organic Matter” as the soil texture • Enter an FIV value that corresponds with the SME interpretative category for each nutrient from the analysis (except nitrogen) • Example: Phosphorus on the SME analysis was 4 mg/L. This corresponds with a SME Category of “Medium” and falls in the middle of the SME range. Select a value in the middle of the medium FIV range and enter that value into the data entry box for phosphorus (P) in the <i>NuMan Pro</i> software. The medium FIV range is 26-50, therefore 38 might be an appropriate selection. 		
Print Recommendations	<ul style="list-style-type: none"> • Print the recommendations and use as normal 		

Not using NuMan Pro Software?

Follow the directions as above, except consult the Maryland Nutrient Management Manual (link below) for specific recommendations for each crop by FIV category instead of entering in *NuMan Pro* software.

Resources and contacts

Contact University of Maryland Nutrient Management Specialists with specific questions: <https://extension.umd.edu/anmp/college-park-staff-nutrient-management-specialists>

Topic	Links
Fertility Index Values (SFM-4: Converting Among Soil Test Analyses Frequently Used in Maryland)	https://extension.umd.edu/sites/extension.umd.edu/files/_images/programs/anmp/SFM-4.pdf
Maryland Nutrient Management Manual	https://mda.maryland.gov/resource_conservation/Pages/nm_manual.aspx
Recommended Soil Testing Procedures for the Northeastern United States	https://www.udel.edu/academics/colleges/canr/cooperative-extension/fact-sheets/soil-testing-procedures-northeastern-US/