

November 17, 2018

**URI MASTER GARDENERS**  
**SOIL TESTING POTENTIAL LEADER'S TRAINING**

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## **(A) PREPARING FOR A SOIL TEST**

Number log in sheets and cups before the day of the event.  
Check your meters --do a calibration. Make sure you have enough distilled water, paper plates, pens.

Check your supply of informational handout material.

## **(B) SETTING UP FOR THE EVENT**

Arrive at least 30 minutes before the start time of the event.  
Set-up table with materials required. (See attachment (c))  
Calibrate meters

## **(C) DURING THE SOIL TESTING EVENT**

Watch for a station on the line that starts to back up. Most likely this will happen at the sifting station and more likely at high volume events. *You may need to balance the line by adding/shifting a person on the line.*

If a meter starts to produce several high readings (Over a pH of 7) recalibrate the meter or check results against a second meter.

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## **(D) CALIBRATING THE METER**

See attachment (b) for calibrating instructions.

A meter will not calibrate - Discussion on possible causes:

✓ COMMENT: A person tells you that they purchased a pH meter online for \$50 and states that it is just as good as our Hanna pH meter.

The Hanna meter we use is used by USDA (United States Department of Agriculture) and is calibrated to two points on the pH scale 4 and 7. This provides us with greater accuracy and confidence in our pH readings.

✓ COMMENT: A person says to you that the Hanna meter does not give accurate reading when the pH is below 4 or above 7.

Hanna meter continues to read in a straight line outside the two calibration points of 4 and 7.

## • (E) QUESTIONS THAT SOMEONE COULD ASK YOU.

1.) QUESTION: What should you ask a person when the pH results show a pH of 7 or above?

*How did you take your sample? When was the last time you limed the area tested? Do you use wood ashes?*

2.) QUESTION: I had my soil tested last year and just retested and I have the same results.

*Did you apply the correct pounds of lime as recommended in last year's test? How did you spread the lime? How did you take your sample?*

3.) QUESTION: When can I apply lime to my soil?

*Any time of the year but Fall is the best time.*

4.) QUESTION: Can I apply lime at the same time as I fertilize?

*Yes, you can.*

5.) QUESTION: What is the pH for growing marijuana?

*The federal government regards the use of marijuana as illegal. URI receives grant money from the federal government. **You cannot answer this question.***

6.) QUESTION: How much lime do I need to apply?

*The formula is on the back of the Log in sheet.*

7.) QUESTION: How long do I have to wait before applying multiple applications of lime if recommended?

*Six months between each application.*

8.) QUESTION: If someone's compost pile test results are high, how do they lower the pH?

*1. Where are you going to use this compost that you want to lower the pH. 2. A mature compost pile is around 6.7. 3. How was the sample taken? Was it just one spot in the pile or several different locations in the pile? 4. What was the actual pH reading that indicated that the compost pile is too high? 5. What meter was used to do the test? 6. What ingredients were used to create this compost pile that has such a high reading? 7. Recommendation on how to lower the pH would be pine needs and peat moss.*

### **Bob Rafka's answer**

The decomposition process goes through a variety of readings on its way to a stable pH 6.7 or so. That said, it is always acidic and never (even briefly) crosses the threshold of neutrality.

The pH of compost can sometimes test high if a significant proportion of manure is used as an incoming raw. I have toured the facility at UConn and their compost tests above pH 7 from start to finish because they process so much cow poop. Their finished product also contains way too much phosphorous for most applications and they must be careful where it goes (not on lawns anymore) because of it.

The second alternative is that someone slipped some wood ashes into the pile. The incorrect) thought is that both compost and ashes will eventually wind up on the garden so why not mix them now and save a latter application. My response to that involves mixing my main course (say... turkey and stuffing) with dessert (pumpkin pie). I much prefer to eat and enjoy them separately, thank you very much.

## (F) ATTACHMENTS

### (a) Soil Test Event Leader responsibilities\*

\*From SOP – MG Soil Testing Handbook – Revision 2/17

### (b) Meter Calibration

### (c) Soil Testing Table – Flow Chart

### (d) List of Master Gardener Program Literature Catalog

### (e) Soil Testing and Kiosk Event Report

## SOP NO. 1.3 SOIL TESTERS

Soil testing events will be staffed by Blue Pin Master Gardeners who have completed the Soil Testing Training Program and other testers-in-training. This training will be supplemented with "on the job coaching" by an experienced Soil Tester for the next event(s) that you participate in. Each soil tester must read and become familiar with the material in the Soil Testing Handbook. Each Soil Testing Event must have an experienced Soil Tester in charge of the event, referred to as the "Soil Test Event Leader".

The Soil Test Event Leader is responsible for:

1. The proper set up of the Soil Test Table
2. Making Available an adequate supply of pre-numbered Soil Test Forms and pre-numbered cups.
3. Ensuring all functions are handled according to protocol and the SOP.
4. Ensuring any less-experienced Soil Testers are given adequate coaching and experience at performing the different functions.



## ATTACHMENT (a)

### SOIL TESTING WITH THE HANNA pHep5 METER

#### Simplified Instructions

#### **Calibration:**

1. Turn on meter (Left Button, MODE) until the instrument powers up. Again, depress the MODE button until the meter turns off and keep holding until the meter reads "CAL".
2. Place the meter in pH 7 buffer. It will read "REC" and the small "CAL" on the left will blink. Leave in the pH 7 solution until the small "CAL" on the left stops blinking and the meter's screen signals "pH 4.01 USE".
3. *Immediately remove* the meter, dip the probe in de-ionized water, blot on a clean paper towel, then place the meter in pH 4 buffer. It will again read "REC" and "CAL" will blink as it attempts to find and log this pH reference point.
4. After about a minute, the meter will display "OK 2" and "CAL" will stop blinking and it is now calibrated.
5. Remove pH 4 buffer by dipping in de-ionized water before testing samples.

#### **Testing:**

1. Beware of debris in sample that **could damage the probe.**
2. If a sample produces a pH reading that is significantly below ca. 6.2, it is likely that that the pH will need to be raised. Recommend 50 lbs. of limestone per 1,000 square feet. This amount will raise the pH 0.5

units within about 6 months. If the pH needs to be raised further, an additional application of 50 lbs./1,000 square feet can be applied within a few months.

3. Recommend repeated testing.

**End of testing:**

1. Thoroughly rinse meter with de-ionized water and dry with clean paper towel.
2. Place a couple of drops of pH 7 buffer in the cup area of the cap.
3. Replace the cap and store the meter upright.

ATTACHMENT (b)

SOIL TESTING TABLE - FLOW CHART

STATION 1: *PROCESS*

STATION 2: *PROCESS IDENTICAL NUMBER ASSIGNED TO FORM & CUP*

STATION 3: *PROCESS Ph METER IS PLACED IN CUP OF PREPARED SOIL SAMPLE*

STATION 4: *PROCESS FORM IS REVIEWED AND ADDITIONAL COMMENTS NOTES MADE IF NECESSARY.*

*SAMPLES ARE RECEIVED.*

*INFORMATIONAL FORM IS FILLED OUT.*

*SIFT SOIL SAMPLE TO REMOVE STONES.*

*A READING IS TAKEN WHEN DISPLAY SETTLES DOWN AND BARELY MOVES.*

*COMPLETED FORM FILED IN NUMERICAL ORDER FOR PICK UP ENTER pH READING ON FORM.*

*PLACE A TEASPOON OF SOIL IN TO CUP AND ADD A SMALL AMOUNT OF DISTILLED WATER. STIR TO A PASTY MIX.*

*METER IS RINSED WITH DISTILLED WATER.*

MATERIALS:

SOIL TESTING FORMS

SMALL PAPER CUPS PRE-NUMBERED

CALIBRATED PH METER

CONTAINER FOR COMPLETED FORMS

PEN/PENCILS

SIFTER

CONTAINER OF DISTILLED WATER FOR RINSING METER

SOIL SAMPLES

DISTILLED WATER

PLASTIC TEASPOONS

PAPER TOWELS

Activities of each station can be combined depending on the number of soil test expected. Meters should be calibrated before testing starts.

Follow procedure for calibrating pH meter.

## ATTACHMENT (C)

### Master Gardener Program Literature Catalog

THE  
UNIVERSITY  
OF RHODE ISLAND



### **URI MASTER GARDENERS**

Cultivating the Future Program

Cooperative Extension MASTER GARDENER PROGRAM  
LITERATURE CATALOG

- A. Best Practices
- B. Composting
- C. 2018 Dated Material
- D. Diseases
- E. Garden to Table (Food Safety)
- F. Forms
- G. Water Related
- H. Gardening with Youth

I. Health Fairs

J. Insects

K. Lawn Care

L. Native Plants

M. Ornamentals Perennials Trees

N. Pollinators

O. Soil

P. Vegetables

Q. Ticks and Mosquitoes

<https://web.uri.edu/mastergardener/master-gardener-program-catalog/>

ATTACHMENT (d)  
**Soil Testing Event Report**

2/2019

Event Location:

Host:

Event Date:

Leader:

Master Gardener Volunteers:

Soil Testing Only #People \_\_\_\_\_ - # of Tests \_\_\_\_\_

Should this event be attended again: Yes \_\_\_\_\_ No \_\_\_\_\_

Was this a diversified group?

Any unusual occurrences or weather conditions:

Any advertising by host?

Comments/Questions:

Please submit report within 2 days after event to: Melissa Hughes -  
[mhughes30@cox.net](mailto:mhughes30@cox.net)

CC-[Stephanielovesplants@gmail.com](mailto:Stephanielovesplants@gmail.com)