

SURVEY

Survey information:

We are collecting information for local small farmer's interest in soil health testing. The survey is part of a project funded by the Northeast Sustainable Agriculture Research and Education (SARE) Program conducted by researchers at West Virginia University and the University of Kentucky. The information will be used to identify small farmer's willingness to pay for soil health testing, which can help design soil health tests that are informative yet affordable to the small farmer.

Responses to this survey are strictly confidential. The survey will take approximately 15-20 minutes to complete. We appreciate your help. If you have any questions, please feel free to contact the project's principal investigator (PI) or any of the co-principal investigators (Co-PI).

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Farmer related questions

I voluntarily agree to participate, and I understand that I can stop participating at any time.

☐ Yes

☐ No

Q1. [100] Are you actively engaged in farm operations?

[101] ☐ Yes

[102] ☐ No

Q2. [200] What is your position in the farm? (Mark all that apply)

[201] ☐ Owner

[202] ☐ Owner's Spouse

[203] ☐ Owner's Son/Daughter

[204] ☐ Farm Manager

[205] ☐ Operator

[206] ☐ Employee

[207] ☐ Other

Specify your position: _____

Q3. [300] Do you rent the land you farm on?

[301] ☐ Yes, and my contract stipulates that the soil must be in a certain condition when the contract ends. Indicate percent of land owned: _____

[302] ☐ Yes, my contract DOES NOT require that the soil be in a certain condition when the contract ends. Indicate percent of land owned: _____

[303] ☐ No

Q4. [400] Please indicate the number of years of experience in operating a farm: _____

Q5. [500] Apart from high tunnels or grasslands, do you produce any other crops/livestock?

[501] ☐ Yes

[502] ☐ No

If Yes Specify_____

Q6. [600] Which category best describes the total annual sales for the farm?

[601] ☐ Less than \$10,000

[605] ☐ \$75,000 to \$99,999

[602] ☐ \$10,000 to \$24,999

[606] ☐ \$100,000 to \$149,999

[603] ☐ \$25,000 to \$49,999

[607] ☐ \$150,000 to \$199,999

[604] ☐ \$50,000 to \$74,999

[608] ☐ \$200,000 or more

Q7. [700] What is the percentage contribution of farm sales to total household income? _____%

Q8. [800] What conservation practices do you use on your land? (Mark all that apply)

[801] ☐ Integrated Pest Management

[802] ☐ Cover Crop

[803] ☐ Nutrient Management Plan (Crop Nutrient Management)

[804] ☐ Filter Strips

[805] ☐ Reduced (Conservation) Tillage

[806] ☐ No tillage

[807] ☐ Intensive (Conventional) Tillage

[808] ☐ Precision Agriculture

[809] ☐ Rotational Grazing

[811] ☐ Manure Management

Q9. [900] Are you part of a government program/ receive funding from government (e.g. liming, high tunnels)?

[901] ☐ Yes: Name of the Program:_____ [902] ☐ No

Q10. [1000] Please select the types of soil testing that you currently do (Skip to the next question if you have never done soil testing)

[1002] ☐ Sulfur and Boron Testing (Cost - \$25-\$100)

[1003] ☐ Soil Texture (Cost - \$35-\$80)

- [1004] ☐ Haney Test (Cost - \$55-\$65)
- [1005] ☐ Heavy Metal Screening (Cost - \$70-\$200)
- [1006] ☐ NPK Routine Soil Test (Cost - \$20-\$50)
- [1007] ☐ Compaction (Cost - \$100-\$125)
- [1008] ☐ Percolation or Perc Test (Cost - \$20-\$1000)
- [1009] ☐ Organic Matter (Cost -\$6-\$12)
- [1010] ☐ WVU routine Soil Test Analysis
- [1011] ☐ Aggregate Stability (Cost \$30-\$50)
- [1012] ☐ Active Carbon (Cost \$20)
- [1013] ☐ Respiration (Cost \$25-\$40)
- [1014] ☐ pH (pH, BpH, EC) (Cost \$3-\$6)
- [1015] ☐ PLFA (Cost -\$80)
- [1016] ☐ Other (Please name test and price): _____

Q11. [1100] If you have never tested your soil and you would like to. Do you know where to send soil samples for testing?

- [1101] ☐ Yes. Where: _____ [1102] ☐ No

Q12. [1200] If you do not do soil testing, could you share with us why: (Mark all that apply)

- [1201] ☐ I don't know the benefits of soil test
- [1202] ☐ Soil testing is costly
- [1203] ☐ I would like to see a sample report of soil test first
- [1204] ☐ Farmer's I know haven't recommended it
- [1205] ☐ Other: _____

Q13. [1300] If you soil test, how often do have soil organic matter tested? _____

(Indicate frequency in terms of years)

Q14. [1400] If you soil test, do you collect your own soil sample? (Skip if you have never done soil testing)

- [1401] ☐ Yes, and I send it to a private laboratory.

[1403] ☐ No, I do not collect my own soil sample

[1501] Soil health tests are the same as routine soil tests ☐ true ☐ false

[1502] I could use soil health test results to make management decisions ☐ true ☐ false

[1503] Soil health test are only important to organic or small-scale farms ☐ true ☐ false

[1601] ☐ 1 = Yes

[1602] ☐ 0 = No

[illegible]

Information on Soil								
soil and water conservation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
soil conservation practices	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other farm management Information								
dealing with extreme weather (e.g. drought, hail, FLOOD)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Crop/livestock production	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Farm financial management	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Q18. [1800] What could be some of your concerns about making management decisions to adopt soil health practices on your land?

Using soil health practices means using management practices such as no-till, cover cropping and diverse rotations. Soil health practices increase the soil's organic matter and improves microbial activity, increases water infiltration and, may even allow for better yields.

- [1801] ☐ Too costly
- [1802] ☐ No advantages
- [1803] ☐ Lack of knowledge on soil management practices
- [1804] ☐ Adopting them may make me lose participation on certain government programs such as insurance, yield loss
- [1805] ☐ Other reason: _____

Q19. [1900] As a WVU resident, you have access to free-soil routine analysis provided by West Virginia University (a \$10 value). This soil test provides recommendations on the ideal amount of lime and fertilizer to be applied. If you could have a more complete soil health test at a cost, a soil health test that would provide a complete picture of your soil (e.g. organic matter tests, pH test, biological activity, aggregation characteristics), and can help you make decisions on the farm such as: the use of cover crops, rotation, manure applications, and other soil health related practices: What **maximum fee** would you be willing to pay for a soil health test? (Mark One)

- [1901] ☐ \$0- \$25
- [1902] ☐ \$25-\$50
- [1903] ☐ \$50-\$75

[1904] ☐ \$75-\$100

[1905] ☐ Other Specify _____

Demographic Questions

Q1. [100] What is your gender?

[101] ☐ Male

[103] ☐ Other. Specify: _____

[102] ☐ Female

[104] ☐ Prefer not to answer

Q2. [200] What is your race or ethnicity? (Select all that apply)

[201] ☐ White

[202] ☐ Black or African American

[203] ☐ Hispanic or Latino

[204] ☐ American Indian or Alaska Native

[205] ☐ Asian

[206] ☐ Native Hawaiian or Other Pacific Islander

[207] ☐ Other. Specify: _____

[208] ☐ Prefer not to answer

Q3. [300] What is the highest level of education you have completed?

[301] ☐ Less than a high school diploma

[302] ☐ High school graduate or equivalent (e.g., GED)

[303] ☐ Some college, no degree

[304] ☐ Associate's degree (e.g., AA, AS)

[305] ☐ Bachelor's degree (e.g., BA, BS)

[306] ☐ Graduate or professional degree (e.g., MA, MS, DDS, MD, PhD)

Q4. [400] In what year were you born? _____

Field Related Questions

Please answer questions related to this field of grasslands or high-tunnel that is being tested.

Q1. [100] Mark with an X the land use selected (for the interviewer to mark)

☐ GRASSLAND (Circle below the main production objective)

Hay

Pasture

☐ HIGH TUNNEL

Q2. [200] Do you practice:

[201] ☐ Organic Farming, where farm products are labelled as organic and a certification by the USDA is required.

[202] ☐ Regenerative Agriculture: a type of organic agriculture focused on creating and maintaining healthy soils that absorb and store carbon.

[203] ☐ None of the above

Q3. [300] How often or frequent do you soil test? _____(Indicate frequency in years for example every 2 years, twice a year, etc.)

SOIL HEALTH SCORE CARD (complete one per area where soil samples are collected)

Descriptive Properties (Circle one):

1) EARTHWORMS

- 0 Little sign of worm activity (less than 2 in a square feet)
- 2 Few worm holes or castings (more 5 and less than 10 in a square feet)
- 4 Worm holes and castings numerous (more than 10 in a square feet)

2) EROSION

- 0 Severe erosion, considerable topsoil moved, gullies formed
- 2 Moderate erosion, signs of soil erosion, some topsoil is thinning
- 4 Little erosion evident, topsoil resists erosion by water or wind; no visible signs of soil

lost.

3) TILLAGE EASE

- 0 Plow scours hard, soil never works down
- 2 Soil grabs and slows plowing, difficult to work, needs extra passes
- 4 Plow field in higher gear, soil flows and falls apart, mellow

4) SOIL STRUCTURE

- 0 Soil is cloddy with big and hard chunks, or dusty and powdery
- 2 Soil is lumpy or will not hold together
- 4 Soil is crumbly, granular

5) COLOR (MOIST)

- 0 Soil color is lighter color: tan, light yellow, orange, or light gray
- 2 Soil color is brown, gray, or reddish
- 4 Soil color is dark: black, dark brown, or dark gray

6) COMPACTION: common problem faced by farms using heavy machinery that can create persistent subsoil compaction.

- 0 Soil is tight, compacted, cannot get into it, thick hardpan (brick like)
- 2 Soil packs down, thin hardpan or plow layer
- 4 Soil stays loose, does not pack, no hardpan

7) INFILTRATION or surface water entering the soil

- 0 Water does not soak in, sits on top or runs off

- 2. Water soaks in slowly, some runoff or puddling after a heavy rain
 - 4. Water soaks right in, soil is spongy, no ponding
- 8) WETNESS or how easy the soil dries.
- 0. Soil dries the same day (24 hrs) after a heavy rain.
 - 2. Soil dries pone to two days after a heavy rain.
 - 4. Soil dries pone to two days after a heavy rain.
- 9) ROOT GROWTH/FERTILITY/YIELD OR PLANT HEALTH
- 0. Roots are weak and thin, and most are concentrated at the surface when crop is mature (no growth below 2 inches)
 - 2. Roots are strong, and healthy, and most are concentrated at the surface when crop is mature (no growth below 4 inches).
 - 4. Roots are strong, healthy, and grow deep into the soil when crop is mature (growth can be observed below 4 inches)..
- 10) SMELL OF SOIL WHEN MOIST
- 0. Compared to dry soil, no smell is evident when soil is moistened for 5 minutes.
 - 2. Compared to dry soil, slight smell is evident when soil is moistened for 5 minutes.
 - 4. Compared to dry soil, distinguished smell is evident when soil is moistened for 5 minutes.

Soil Health Scorecard:

SOIL– Questions refer primarily to the plow layer	
<i>Descriptive Properties</i>	SCORE
1. EARTHWORMS 0 Little sign of worm activity 2 Few worm holes or castings 4 Worm holes and castings numerous	<input type="text"/>
2. EROSION 0 Severe erosion, considerable topsoil moved, gullies formed 2 Moderate erosion, signs of sheet and rill erosion, some topsoil blows 4 Little erosion evident, topsoil resists erosion by water or wind	<input type="text"/>
3. TILLAGE EASE 0 Plow scours hard, soil never works down 2 Soil grabs plow, difficult to work, needs extra passes 4 Plow field in higher gear, soil flows & falls apart, mellow	<input type="text"/>
4. SOIL STRUCTURE 0 Soil is cloddy with big chunks, or dusty and powdery 2 Soil is lumpy or will not hold together 4 Soil is crumbly, granular	<input type="text"/>
5. COLOR (MOIST) 0 Soil color is tan, light yellow, orange, or light gray 2 Soil color is brown, gray, or reddish 4 Soil color is black, dark brown, or dark gray	<input type="text"/>
6. COMPACTION 0 Soil is tight, compacted, cannot get into it, thick hardpan 2 Soil packs down, thin hardpan or plow layer 4 Soil stays loose, does not pack, no hardpan	<input type="text"/>
7. INFILTRATION 0 Water does not soak in, sits on top or runs off 2 Water soaks in slowly, some runoff or puddling after a heavy rain 4 Water soaks right in, soil is spongy, no ponding	<input type="text"/>