Do You Know How Healthy Your Soil Is?

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Most farmers appreciate the need to promote healthy soils on their farm. They realize that the quality and health of their soils play important roles in the quality and health of their crops and the profitability and sustainability of their farming operations. But what *is* soil health, and how do I know if I am improving the health f my soil?

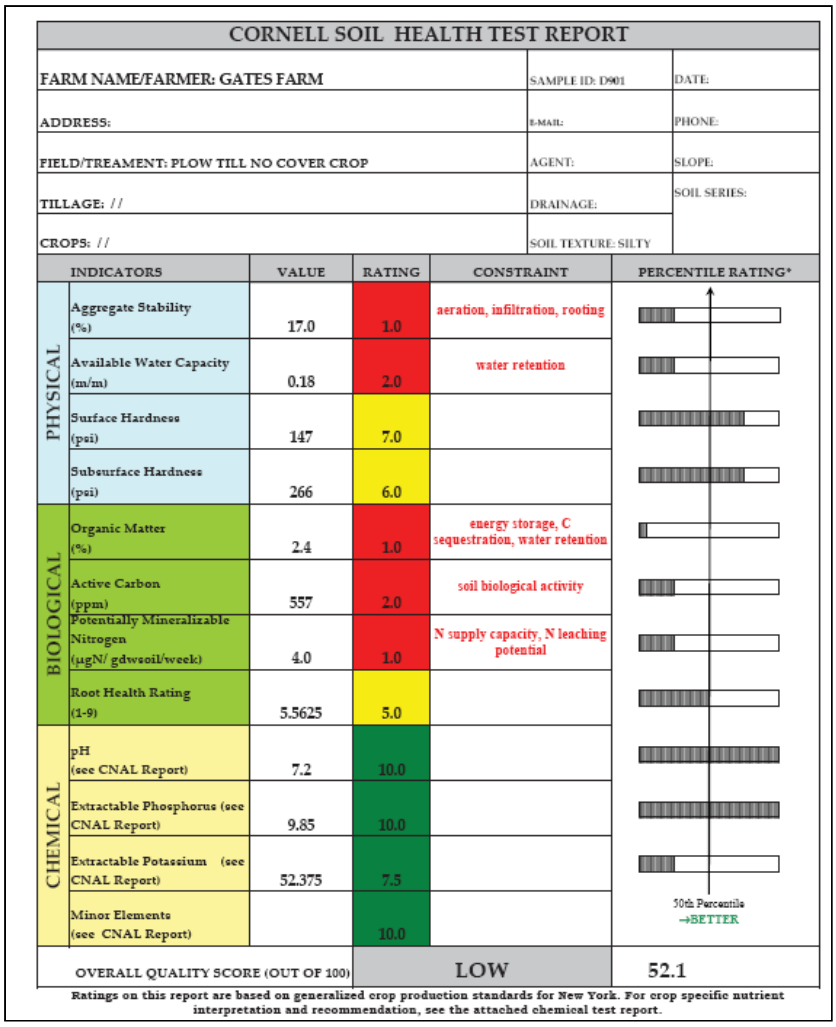
A healthy soil is one that is well balanced, resilient, recovers from disturbance or stress, and functions efficiently to growth healthy crops and protect water quality. Measuring soil health, like measuring human health, is a complex undertaking that involves chemical, biological and physical properties. Having a way to measure soil health would help us to objectively assess our soil and our soil management. Soil health measurement could point out possible problem areas that might be hurting productivity or suggest improved management strategies.

Soil scientists led by Dr. Ray Weil at the University of Maryland have recently teamed up with researchers at Cornell University (Ithaca, NY) in developing and testing a reliable, convenient, and cost-effective method of soil health assessment. The Soil Health lab at Cornell University is offering a "beta version" of the soil health analysis that measures physical, biological, and chemical indicators to provide an overall score soil health, as well as individual scores for a variety of soil health properties. If you send in a soil sample obtained using the proper collection procedures, you can receive a Soil Health Assessment Report that goes far beyond the standard chemical soil test results. The soil health assessment measures the following indicators:

Physical	**Biological**	**Chemical**
Aggregate Stability	Organic Matter	Soil pH
Available Water Capacity	Active Carbon	Plant Macro Nutrients (4)
Surface Hardness	Potentially Mineralizable Nitrogen	Plant Micro Nutrients (4)
Subsurface Hardness	Root Pathogen Pressure	Toxic Elements (4)
	Good & bad nematodes (special)	

The Soil Health Assessment has been tested with hundreds of New York farmers, mainly on clayey, high organic matter, glaciated soils. Up to now, soils characteristic of the mid-Atlantic Region have been poorly represented in the development of the Soil Health Assessment. However, with Maryland joining the effort, the team is looking to work with soils in this area – especially the more coarse-textured soils from warmer climates. This will help us refine our procedures and make better interpretations and management suggestions.

If you would like to be a collaborating farmer, you could receive free information about your soil, including a soil health assessment with mangement recommendations. Soil scientists from the University of Maryland will come to your farm and collect the soil samples, themselves. They can also show you how the sampling is done so you can follow-up with additional samples or sample other fields in the future. Your participation in this study will provide you with test results that can help you farm more effectively as well as help us improve the soil health assessment system for soils like those on the lower Eastern Shore.



CORNELL SOIL HEALTH TEST REPORT

FARM NAME/FARMER: GATES FARM	SAMPLE ID: D901	DATE:
ADDRESS:	E-MAIL:	PHONE:
FIELD/TREAMENT: PLOW TILL NO COVER CROP	AGENT:	SLOPE:
TILLAGE: //	DRAINAGE:	SOIL SERIES:
CROPS: //	SOIL TEXTURE: SILTY	

	INDICATORS	VALUE	RATING	CONSTRAINT	PERCENTILE RATING*
PHYSICAL	Aggregate Stability (%)	17.0	1.0	aeration, infiltration, rooting	
	Available Water Capacity (m/m)	0.18	2.0	water retention	
	Surface Hardness (psi)	147	7.0		
	Subsurface Hardness (psi)	266	6.0		
BIOLOGICAL	Organic Matter (%)	2.4	1.0	energy storage, C sequestration, water retention	
	Active Carbon (ppm)	557	2.0	soil biological activity	
	Potentially Mineralizable Nitrogen (µgN/ gdwsoil/week)	4.0	1.0	N supply capacity, N leaching potential	
	Root Health Rating (1-9)	5.5625	5.0		
CHEMICAL	pH (see CNAL Report)	7.2	10.0		
	Extractable Phosphorus (see CNAL Report)	9.85	10.0		
	Extractable Potassium (see CNAL Report)	52.375	7.5		
	Minor Elements (see CNAL Report)		10.0		
	OVERALL QUALITY SCORE (OUT OF 100)		LOW		52.1

50th Percentile →BETTER

Ratings on this report are based on generalized crop production standards for New York. For crop specific nutrient interpretation and recommendation, see the attached chemical test report.

To arrange to have your soil sampled this spring or next spring, contact Ray Weil or Charlie White at the University of Maryland:

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301-405-1314

The Assessment works *best* if we can sample your field ***before*** any spring tillage is performed. If you use no-till techniques, we can sample any time until the crop is too large. If you call and miss us, just leave a message with your name, contact numbers, address, the kind of crops you grow, and the kind of soils you have. We'll get right back to you to discuss sampling plans.

You can learn more about soil health assessment from the Cornell Soil Health Assessment Training Manual at http://soilhealth.cals.cornell.edu/ .