

1

Soil Health Factors

Microbial and physical traits related to soil biological functions shown numerically and with their categorical rating compared to all past samples tested.

2

Overall Fertility Score

Integrates nutrient sufficiency with the biological health score. High sustainability is indicated by a score close to 100, which is rare.

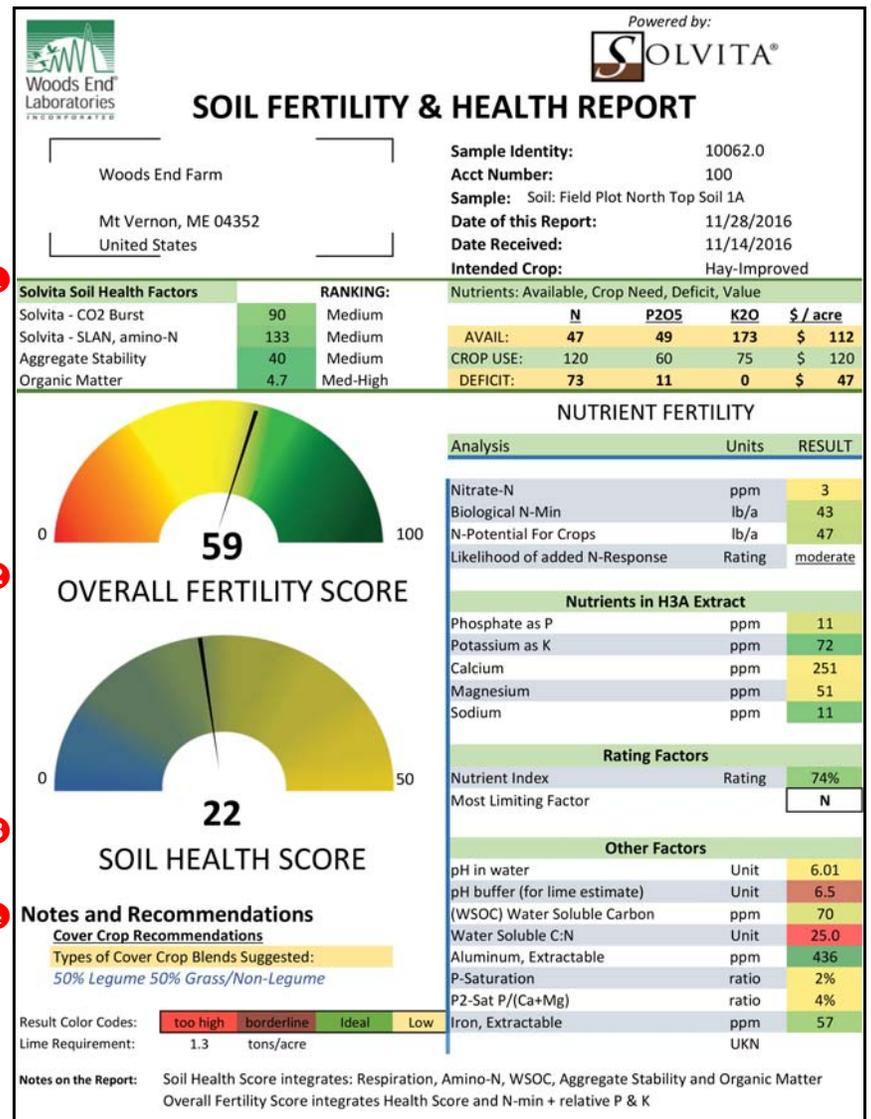
3

Soil Health Score integrates all key biological and physical traits; an ideal score is 50 (see below *How is the health score calculated*).

4

Cover Crop Recommendations provide a very general guide and take into account level of soil health with lowest scores getting highest legume ranking.

Limestone: The needed limestone is calculated from the buffer-pH.

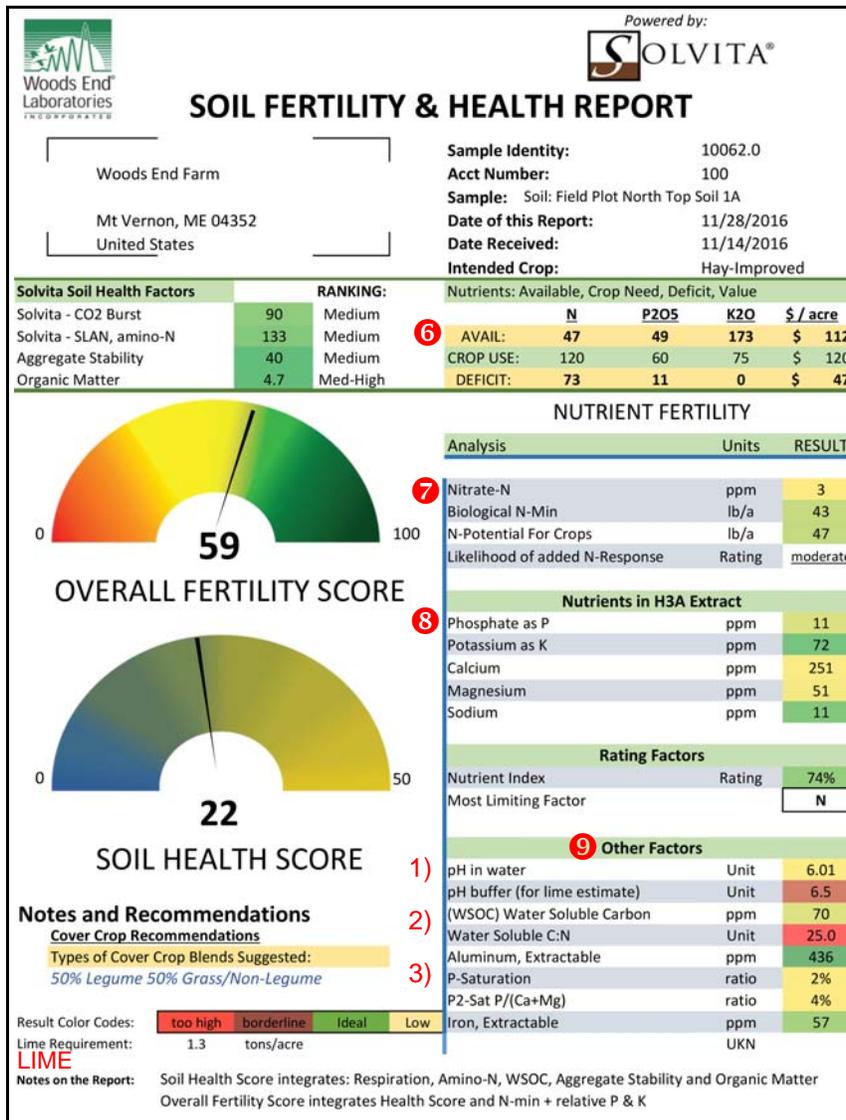


How is the soil health score calculated?

Five independent factors (see 1 + 5) are used to determine the potential health score by the matrix shown below. The final result is even-weighted average of results.

Factor Measured	Actual	Highest Expected	Score if at Highest Value	Result
Solvita CO ₂ Burst (Respiration)	90	200ppm	50	23
Solvita SLAN (Amino-N)	133	300ppm	50	22
Aggregate Stability	40	80%	50	25
Organic Matter	4.7	7.0%	50	9
WSOC (see other factors)	25.0	400ppm	50	34
Total Soil Health Score - averaged for 5 factors:				22

* a full interpretation guide comes with every soil test



Sample identity, date sample received and date results reported. The intended crop used to estimate nutrient requirements is listed, - this can be changed.

6 AVAIL: the available + biological nutrients your crops will have access to.
CROP USE: the nutrients your crop is expected to use based on yield factors.
DEFICIT: What you need to provide.

7 Nitrogen Factors: Nitrate-N and Biologically available N (calculated from microbe rate) are shown. Likelihood of N-response is based on the quantity of soil amino-N (SLAN).

8 Nutrients expected available. This is not a total exchangeable cation test but an estimate of biological availability.

Phosphate as P availability is indicated by several traits including free aluminum (an acidity measure) and the amount of bases (Ca+Mg) that may also temporarily hold phosphate. If P is sufficient (see most limiting factor) and the P-saturation ratios are normal (>5) it is *very unlikely* that additional phosphate is required.
Nutrient Index (0 - 100 on sufficiency scale)
Most Limiting Factor will be either N, P or K is here identified as N.

9 Supplemental factors:

1) **pH and buffer-pH** are common tests (water extract and Woodruff buffer) used to estimate the overall soil reaction and need, if any, for limestone supplementation. **Lime** is shown under the ratings scale on the left, if any needed.

2) **Water Soluble Carbon** indicates amount of *microbial food* from recent

root exudates, organic matter, manures, etc.

Water Soluble C:N shows the ratio of the available carbon to available N- an indicator of potential immobilization of N if C:N is high (>20) or net loss of Carbon if C:N is low (< 10). A high ratio can mean accumulation of carbon.

3) **P Saturation** indicates likelihood of phosphorus being partly tied up by Al+Fe at low pH and P2-saturation indicates if Ca+Mg may tie up phosphorus at higher pHs.

NOTE:

CEC and Cations: The soil test shows *biologically active* nutrients (K, P, Ca, Mg, Na) based on a method using plant-based organic acids. This extraction removes cations believed to be readily available and not the total amount commonly used for CEC and base saturation calculations. Therefore CEC is *not shown*.

\$ Value of N-P-K: The values used in the nutrient tables (6) are based on USDA estimated N-P-K costs and are used purely to indicate potential value of nutrients already present in soil vs what additional amounts may be required. The actual cost of fertilizer will depend on markets; manure and organic nutrients may carry different pricing mechanisms.

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