

SOLVITA BASIC: INTERPRETATION GUIDE

Color 0 - 1 Blue-Gray	1 - 2.5 Gray-Green	2.5 - 3.5 Green	3.5 - 4 Green-Yellow	4 - 5 Yellow
VERY LOW SOIL ACTIVITY Associated with dry sandy soils, and little or no organic matter	MODERATELY LOW SOIL ACTIVITY Soil is marginal in terms of biological activity and organic matter	MEDIUM SOIL ACTIVITY Soil is in a moderately balanced condition and has been receiving organic matter additions	IDEAL SOIL ACTIVITY Soil is well supplied with organic matter and has an active population of microorganisms	UNUSUALLY HIGH SOIL ACTIVITY High/excessive organic matter additions
APPROXIMATE LEVEL OF BASAL CO₂- RESPIRATION^a				
< 300 mg CO ₂ /kg soil/wk	400 (300 - 500)	750 (500 - 1,000)	1,500 (1,000 - 2,000)	> 2,000 mg CO ₂ /kg soil/wk
Estimated quantity of nutrient N released per year (average climate)^a				
< 5 lbs/acre	10-20 lbs/acre	20-30 lbs/acre	30-50 lbs/acre	75-100 lbs/acre

Soil Quality Curve

a. Use of the Digital Color Reader is recommended for actual values

SOLVITA COLOR RESULT #	CONDITION OF SOIL	RECOMMENDED SOIL CARE
> 5	Soil has a very high level of microbial activity and has been recently supplied with a large quantity of either green organic matter or fresh manure, possibly excessively.	Soil is likely to release significant quantities of nitrogen from the organic reserves. Organic matter additions may be restrained.
3.5 - 4	Soil is in an ideal state of biological activity and is receiving adequate organic matter and has an active population of microorganisms.	Soil is likely to provide sufficient nitrogen for medium to heavy feeders and requires only maintenance applications of organic matter.
2.5 - 3.5	Soil is approaching or declining from an ideal state of soil respiration.	Soil may provide adequate nitrogen for light feeders but requires continued applications of microbially active organic matter.
1 - 2.5	Soil is in a somewhat depleted state of organic matter, and biological activity is low.	Soil is not likely to provide adequate nitrogen for most crops and requires medium to heavy applications of organic matter.
0 - 1	Soil is very depleted, has not received adequate organic matter additions, and contains little or no biological activity.	Soil will not provide adequate nitrogen for any crop and requires crop rotations and heavy applications of organic matter.

SOLVITA® QUICK-GUIDE‡

SOIL RESPIRATION TEST

TESTING SOIL RESPIRATION: The evolution of carbon dioxide (CO₂) from soil is a fundamental property that reflects microbial activity in relation to organic matter present in the sample. The CO₂ activity derives from both recently added organic matter and stable (sequestered) soil humus. By evaluating this exchange important indications are possible concerning soil fertility and sufficiency of carbon.

The Solvita Soil Test is a new and revolutionary method to simply and accurately measure soil CO₂ respiration. The test is available in two forms: the simple semi-qualitative (Basic or Basal) and the advanced (Professional-Pulse) procedures.

performing the BASIC SOLVITA TEST

(Solvita items # 2361, 2362, 2366, 2461)



The Basic Soil Solvita Test is performed using freshly sampled moist soil placed in the standard Solvita plastic jars.

1. **SAMPLING:** Soil should be freshly sampled under normal moist conditions shortly before testing. Take several random subsamples from various locations and mix well. Remove large stones, roots and other organic debris by hand or by additional sieving.
2. **PUT SOIL IN SOLVITA JAR:** Carefully put the moist soil in the jar up to the fill line. Tap the jar very gently on the counter to ensure the correct density to the fill line, but do not over-pack.
3. **START THE TEST:** The test requires 24hrs, so consider the start and read time before proceeding. Tear open the foil pack labeled "Low-Level CO₂" and carefully remove the probe from the foil pouch. *Do not touch the gel surface, and don't allow soil to touch it.* At the start of the test the gel should be color #0 (bright blue).
4. **INSERT THE PROBE:** Push the probe-stick point into the soil with the gel facing out to be visible through the side of the jar. Be careful not to jostle or tip the jar. Screw the lid on tightly, and write the time on the lid. Keep the jar at room temperature (68 - 75°F/20-24°C) or in an incubator *out of sunlight* for 24 hours.
5. **READ THE GEL COLOR:** At 24 hrs open the jar and remove the probe to compare the color to the Color Key. An optional Digital Color Reader (DCR) is available (required for the Professional test). For best visual results, read the probe next to the chart in the same plane. Note that the visual color key has two charts — one for fluorescent/daylight, and the other for incandescent lighting. If using the DCR no precautions of lighting are needed.
6. **INTERPRET** the test results using the provided charts.

‡ NOTE: for best results refer to the full instructions provided with the kits.