



Dairy One

Forage Laboratory

July 2015 Newsletter

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Introducing the Solvita® CO2 Burst and SLAN Soil Tests

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In June, the Agro-One lab added the Solvita® CO2 Burst and SLAN soil health monitoring tests to our lineup of test offerings.

The Solvita® CO2 Burst Test

This test measures the amount of CO2 released from the soil after it is rewetted as an indicator of the level of microbial activity in the soil. The rate of CO2 release is generally regarded as an indicator of soil health, which can be favorably improved with practices such as cover cropping, manure application, and reduced tillage.

Results reported as:

Very Low Biological Activity (0 - 20 mg/kg CO2-C): Low in microbes and microbial activity, associated with depleted and dry sandy soils, and little or no organic matter

Moderate Biological Activity (21 - 60 mg/kg CO2-C): Moderate microbial life and activity, soil is moderately balanced and has likely been receiving organic matter additions

High Biological Activity (61 - 20 mg/kg CO2-C): High microbial life and activity, soil will range from well supplied to excessive amounts of organic matter

The SLAN Test

SLAN can reveal soil quality factors by revealing forms of organic nitrogen that are held in root and plant debris. This indicates recent biological activity and potentially mineralizable nitrogen.

Results reported as:

Results will be reported at mg/kg of Amino-N and usually range from 75 to 400 mg/kg.

Low: < 100 mg/kg NH3-N

Moderate: 101 - 200 mg/kg NH3-N

High: >200 mg/kg NH3-N

Sampling Needs and Timing

One or both tests can be run on the same sample as is submitted for standard soil nutrient analysis. The most activity for the tests is seen in July and August; however, the most important part of using the test is to be consistent with the time of year when samples are taken so that results can be compared across years.

2015 Results

We have been working with the University of Vermont Extension Champlain Valley Crop, Soil, and Pasture Team to look at test results on fields with known management histories (Table 1).

5/1/2015				
	CO ₂ Burst	CO ₂ Burst Interpretation	SLAN mg/kg Amino-N	SLAN Interpretation
Field	6 in. Sample Depth			
1	179.08	High	240.0	High
2	155.57	High	215.0	High
3	162.49	High	227.5	High
4	179.08	High	247.5	High
5				
6				

6/5/2015				
SLAN mg/kg Amino-N	SLAN Interpretation	SLAN mg/kg Amino-N	SLAN Interpretation	PSNT-Nitrate-N ppm
6 in. Sample Depth		12 in. Sample Depth		12 in. Depth
155.0	Moderate	135.0	Moderate	5.4
137.5	Moderate	137.0	Moderate	5.4
165.0	Moderate	152.5	Moderate	15.4
157.5	Moderate	157.5	Moderate	19.0
95.0	Low	75.0	Low	19.9
47.5	Low	102.5	Moderate	9.0

Field Descriptions:

Field 1

Vergennes clay (with some Covington Panton silty clay) - tile drained, Fall injected manure with 7" wide sweeps on injector, Winter cover crop, and reduced till corn

Field 2

Vergennes clay (undrained), Fall injected manure with 2" wide sweeps on injector, Winter cover crop, reduced till corn

Field 3

Vergennes clay (with some Livingston clay) - tile drained, Broadcast fall manure, Winter cover crop, and No-till corn

Field 4

Vergennes clay (with some Livingston clay) - tile drained, Injected late fall manure after cover crop established, Winter cover crop (reduced yields due to later injection through established plants), reduced till corn

Field 5

Elmwood Fine Sandy Loam, Spring injected manure, and no-till corn

Field 6

Elmwood Fine Sandy Loam, Spring broadcast manure, no-till corn

On the six fields in VT, it was found that the no-till fields generally had higher PSNT values and that the clay fields generally had higher SLAN values. Field 2, the only undrained clay field, and had generally lower values on all tests.

In June, when SLAN was measured on clay and sandy fields the clay fields had higher SLAN values than the sandy. There was no difference between the 6" and 12" depth samples for SLAN in the clay and sandy soils. The lower values of SLAN in the clay could be indicative of N losses early in the season from rainfall, and also related to the organic matter in the soil. The difference in the SLAN values in the sandy soil at the different depths may also be related to the method of manure application, injected vs. surface applied. However, more data to compare these manure application methods is needed.

There does not seem to be any relationship between the SLAN results and the PSNT results. All PSNT results call for N application, and SLAN numbers are not lower where more N side dress is called for from the PSNT.

The Dairy One Summer 2015 Measurement to Management Farm Tour!

There are only 2 dates left! Join us on July 21st at Bergen Farms in Odessa, NY or on July 23rd at Hidden View Farm in Champlain, NY to learn more about all of the services Dairy One has to offer and how we can help you measure it so you can manage it!

Tour Dates and Locations:

Tuesday, July 21st - Bergen Farms - Odessa, NY. The farm is currently milking about 2600 cows.

Thursday, July 23rd - Hidden View Farm - Champlain, NY. The farm is moving into new dry cow and calving facilities this summer.

Pre-registration is strongly encouraged so we can anticipate the number of visitors for each site.

If you are interested in attending, please contact Kayla Turcsik at Dairy One by phone 800-344-2697, or e-mail

kayla.turcsik@dairyone.com. Include the site and number of people attending.



NY State Fair Hay Contest

REMINDER! The New York State Fair is August 27th to September 7th and the entry deadline for the 2015 Hay and Silage Contest is rapidly approaching. **ENTRY DEADLINE: 4:30 p.m. on July 31, 2015.** The *Exhibitor Fee* is \$10.00 and includes an analysis from the Dairy One Forage Lab. Entries for the contest must be delivered on **Wednesday, August 26 from 11:00 a.m. - 9:00 p.m.** The hay exhibit is right next to the immensely popular baked potato stand.

Detailed entry information and rules are available on the [NY State Fair website](#). Hope to see your feed at the NY State Fair!

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