



## Get ready to meet the sidedress N needs of corn

by Janet B. Fallon, CCA

In life, timing is everything - so is nitrogen analysis. Why? Well, it has a problem staying put. Nitrogen is very mobile in the soil, so losses can be high if there is a lot of rainfall to leach it out of the rooting zone. That's not good for the crop or for ground water. It's not good for your wallet either! If there is standing water, nitrogen gas can be lost through denitrification plus surface applied N is also subject to gaseous losses to the atmosphere. And if that is not enough, the price of N fertilizer is directly related to the price of natural gas (methane) which is used directly or indirectly to manufacture most forms of commercial N fertilizer. To add insult to injury, demand is very high and supplies are generally inadequate, thus nitrogen can be pricey.

So what is a corn grower to do? Well, it is probably a good idea to take a hard look at a few things to see where you can tighten up on your management. There are several tests used to evaluate nitrogen sidedress requirements on corn but the pre-sidedress nitrogen test (PSNT) is the one used most often. Below are guidelines for taking & interpreting PSNT tests.

PSNT's should be run on corn fields two or more years after a sod where the manure rate is uncertain or may not meet the N requirements of the crop. A PSNT should also be run if N mineralization rates are expected to be higher than average (warm moist spring, etc).

PSNT's should not be run on corn fields that had broadcast N applications pre plant or early post plant since nitrate picked up from broadcast fertilizer could overestimate true N mineralization potential.

PSNT's should not be run on first year corn after a grass sod with starter N since a response to sidedressed N is very unlikely unless the soil has a very high yield potential.

PSNT is not needed for first year corn following an alfalfa grass mixture since a response to sidedressed N is highly unlikely.

Dairy One offers PSNT services with a 1 - 2 day turn around time. Below are some guidelines for taking and sending samples.

### Sampling Guidelines

- Limit the sample area to < 15 acres.
- Take a separate sample for areas that are different
  - hybrid, population, growth stage, history, management, etc.
- Sample when corn is 6 - 12 inches tall.
- Wait 2-3 days after significant rainfall (due to nitrate leaching).
- Sample between rows taking care to avoid the starter band.
- Sample to a depth of 12 inches.
- Dry the sample immediately to stop mineralization.

### Shipping Guidelines

- If you are near a Dairy One pick-up point, free sample transportation is available.
- To find out if there is a pickup point near you, call 800.344.2697 ext. 2172.
- If samples arrive Monday through Friday, results are available within 24 hours. Samples received on Friday will be analyzed the following Monday.
- Send samples to **The Dairy One Soils Lab, 730 Warren Road, Ithaca NY 14850.**

### PSNT Interpretation

PSNT ppm Nitrate-N	Likelihood of an economic response to sidedressed N	N Guidelines
> 25	Low	No additional N needed
21-24	About 10%	Consider 25-50 lbs N/Acre if you expect a yield response
<21	High	Apply sidedress N per Cornell N guidelines for corn

- When the PSNT is < 21
  - a. Add extra N if you expected to need sidedress N (i.e. field received less manure than needed to meet crop N requirement).
  - b. Check field history & manure applications if you didn't expect to need sidedressed N.
    1. Low mineralization of organic -N early in the season may be off set when warm moist soil conditions resume.
      - No additional N may be needed.
      - Double check N requirements and only apply extra N if needed.
    2. PSNT may help identify those fields that did not receive the planned for amount of manure.

This is a year when soil testing and PSNT's are key to getting the most out of crop input and investments. Remember that timing is critical when trying to determine corn nitrogen needs. As always, please consult with your Agronomy advisor when implementing soil recommendations. If you have questions or would like additional information, contact us at [www.dairyone.com](http://www.dairyone.com) or call 607.257.1272, ext 2179.

**Additional Resources;** NYS Corn N Calculator [www.nmsp.css.cornell.edu/nutrient.guidelines](http://www.nmsp.css.cornell.edu/nutrient.guidelines)

## Good Milk Starts with Good Water

Are your cows drinking “Good” Water? Spring is a great time to evaluate your water supply. Dairy One offers 4 packages to help you determine water quality on your dairy.

- A. Basic test – measures for a general overview of water quality, and gives you the coliform count, total dissolved solids (TDS), PH, hardness, Ca and Mg. (\$20.00).
- B. Elemental test – a summarization of common elements when biological contamination is not a concern. Results provided include total dissolved solids (TDS), pH, hardness, Ca, Mg, Na, Fe, sulfates and nitrates. (\$23.00).
- C. Health and Nutrition test – a water suitability test when animal health and nutrition are a concern. It is of particular suitability for dry cows when DCAD is of major concern. Other analyses include coliform, pH, hardness, Ca, Mg, Na, Chlorides, sulfates, nitrates. (\$33.00).
- D. Complete test – this test provides a broad spectrum of water analyses including trace elements coliform, total dissolved solids (TDS), pH, hardness, Ca, P, Mg, K, Na, Fe, Zn, Cu, Mn, Mo, chlorides, sulfates and nitrates. (\$38.00).

