

NITROGEN AND THE 1994 CORN CROP

In the July *Farm Report* we noted that the pre-sidedress nitrate tests (PSNT) we did on five of our corn fields showed surprisingly low nitrate levels. Levels ranged from 3 to 13 ppm; supplemental N is recommended if the concentration is under 21 ppm. Since research has shown a high confidence level in PSNT results, we applied sidedress N in several cases where Cornell soil analyses indicated a need for none.

In response to our article we got a letter from Jean-Louis Bolduc, an agronome in Ste. Hyacinthe, Quebec indicating that he too was finding unusually low PSNT readings, even where plenty of manure was used the previous fall, and he sees a lot more of these analyses than we do. We called the UVM lab which did our tests and yes, they were finding very low PSNTs.

We have a theory why PSNT levels were low this past spring. The winter of 1993-1994 was almost perfect for alfalfa: Snow cover came early and stayed late, very little frost in the ground except where the wind blew the snow away (a fellow doing some late winter digging reported only a few inches of frost beneath snow-covered fields), and spring snowmelt that was so gradual that we saw little ponding of water in fields as the water went *through* the soil profile rather than *off* it. However, as the water went down, so did some of the nitrogen. This theory hasn't been universally embraced; a couple of agronomist friends think that the problem was due to slow warming of the soils this spring, thus delaying nitrate release. Therefore, when we did our tests, they think the soil was too cold to give a true indication.

Chazy weather data doesn't back up their theory, though. Cornell maintains a weather station here at the Institute and continually records soil temperatures at 4" and 8" depth. We soil sampled (to a depth of 12") on June 16 and 21, midway in the hottest June in over 30 years, and on those dates the soil temperatures at 4" and 8" ranged from 70-76 F, considerably warmer than the same dates in June 1993.

The icing on the cake appeared in October when Paul Sirois, manager of the NEDHI forage lab, ran an item on the DAIRY-L computer bulletin board reporting a lot of corn silage testing in the 5-6% crude protein range, far below the normal 7-8% CP. About 10-20% of corn silage samples are testing low. If we entered the growing season with low soil nitrate levels, and if farmers didn't increase fertilizer N rates accordingly, then we could expect N-deficient corn and low protein corn silage.

The evidence is mostly circumstantial, but until a better explanation comes along, we like this one. (By the way, our corn silage averaged over 8% CP on three fresh chopped samples.)

Ev Thomas

CROP NEWS FROM CORNELL

Cornell held its annual Field Crop Dealer meeting in Canton in October. This is always an excellent meeting, too bad more agribusiness reps don't attend. A couple of highlights:

Seed supplies are the best in years, with adequate supplies of just about everything, even reed canarygrass. Timothy and canarygrass prices should be down a bit. **Corn plant populations** are too low on many farms. Cornell has enough recent research on this to have increased their recommended plant population. You should