Lawn Care: Soil Testing and Nutrient Management for the 2008 Season

A new understanding of the nutrient requirement of lawns is growing out of research conducted at Cornell University under the leadership of Dr. Marty Petrovic. We anticipate some changes in recommendation in 2009 but one more year of research is need. So for this in between time Dr. Petrovic offers this guidance about soil testing and nutrient management for the 2008 season for our Cornell Cooperative Extension staff.

Nitrogen

Don't use a soil test to figure out nitrogen (N) needs. Ignore the N recommendation on the report you get back from the Cornell Nutrient Analysis Lab. It will always say the lawn needs 3lbs per square 1,000 square foot. Consider this for nitrogen:

Amount for the <u>whole season</u>

- For most situations 2lbs per 1,000 square foot for the whole season will be sufficient.
- Initial research finding indicate:
    - Application rates in shady and non-irrigated lawns can be reduced in half.
    - Little added benefit when application rates of N are increased from 2 to 4 lbs/1,000 sq ft.
    - Newly established lawns with less than 2% organic matter could benefit with > 2 lbs/1,000 sq ft.
- If the lawn owner has high expectation with a lawn that is Kentucky bluegrass, in full sun, irrigated and clippings are collected it could require 4lbs/1,000 sq ft.

Timing

- The holiday schedule is an effective easy approach (Memorial Day, Labor Day and Thanksgiving*) *Long Island restrictions don't allow for this last application so lawn owner there need to focus on the first two. And remember it is 2lbs/1,000 sq ft. divide over the whole season.

Submitting Cornell Nutrient Analysis Lab form H

- The current outputs from the soil test might be most useful for those trying to diagnosis a problem.
- Collect the soil sample for testing either prior to fertilizing or a couple weeks after.
- These of the form might be useful to the educator trying to help a lawn owner but in 2008 they do not factor into the recommendation results (so don't worry too much about them being correct): **Environment, Topography, Crop Grown, Grass species, Irrigation**.
- **Texture** and **Drainage** are currently factored into the equation for determining the **Potassium** recommendations.
- **Recommendations required for** (establishment is pre-plant) is factored into **Phosphorus** recommendation equation.
- If you are trying to diagnosis a problem adding the soluble salts test could be useful. But if they have collected the soil for sample very soon after fertilizing it might not tell much.

Interpreting the Cornell Nutrient Analysis Lab soil test results

- **pH** of 6.5 is good. Low pH is of greater concern than high pH. If pH is less than 6 apply lime according to the recommendation section to increase the pH.
- Worry about **Phosphorus** only if the number next to (P#/A) is less than 5. If less than 5 follow the **Phosphate (P205…)** line in the recommendations section**.**
- Worry about **Potassium** only if the number next to (K#/A) is less than 100. If less than 100 follow the **Potash (K20…)** line in the recommendations section**.**
- We don't really recommendation for magnesium or calcium so for now just ignore these soil test results regardless if they say high or low. Dolomite lime does have both of these nutrients.
- Ditto the above on the micronutirents/minor elements. We might not report on them in the future.
- Organic matter below 2% is low, 2% to 6% is fine and > 6% is high. Note that as the organic matter content goes up, less nitrogen needs to be applied.
- If soluble salts are high comments will appear; if no comments about salts, no worries.
- In the client comments section ignore #2 and #9 about nitrogen and follow the suggestions above.