



Fertilizer Workgroup - Second Meeting Notes – Manufacturers

These notes capture, to the best of our ability, the statements made and opinions voiced at this meeting. The purpose of posting these notes is to ensure transparency in the LINAP workgroup process. These notes should not be used as a reference document. The statements in this document are not necessarily supported or endorsed by NYSDEC or LIRPC.

Date: Wednesday, June 21, 2017
Location: Offices of the NYS Department of Environmental Conservation, Stony Brook, NY
Purpose: Review the results of the Fertilizer Workgroup questionnaires; Review role of manufacturers in reducing fertilizer nitrogen use.

Attendees: Table with columns Name and Representing. Includes Charlie Grace, David Beaudreau Jr., Ann Aquillo, Phil Dwyer, Bob Mangan, Mark Miller, Jeremy Campbell, Marshall Brown, Kevin McDonald, Lorraine Holdridge, Maria Isaacson, Kristin Kraseski, Susan Van Patten, David Berg.

Distribution: All Attendees

❖ Introductions, Overview of LINAP, Meeting Purpose

- Importance of getting coefficients correct regarding typical application rates and loads
➤ Subwatersheds - 189 in Suffolk County; less detail in Nassau County. About 50

❖ Formulation & Applications

- There is a perception that opportunities exist to change formulations to help address the nitrogen problem
➤ Carolina (Charlie)
- There are always ways to decrease nitrogen
- First and simplest is addressing homeowner use
- Industry has progressed a lot with slow release formulations; dozens of products available
- Homeowners - seed studies show that blue grass is not the best species for Long Island use; tall fescue requires half the nitrogen



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- He believes that lawn care companies are very good at educating
- Applicators in some states have licenses and go to yearly meetings to get updates on products
- Leaving grass clippings on lawn could lower blue grass requirements from 4 lbs. to 2.5 lbs. nitrogen/1000SF, but don't think homeowner will want companies to leave the clippings
- Lawn care companies know the products and will use any allowed products that work
- Homeowner can also go into stores and buy whatever they want
- Comes down to economics and homeowner education - how to find the type of lawn consumers want that is best for the environment
- *Scotts (Ann)*
  - The idea that homeowners don't want to do the right thing is not correct
  - Always great opportunity for more education
  - Scotts works with NGOs across the country through the *Water Positive Network*
  - Minimize over application
  - Making it easier for consumer to do the right thing
  - Go through regulatory process with products and work through application rates
- *Scotts (Phil)*
  - Homeowners still apply 1.5 lbs. nitrogen/year of fertilizer regardless of grass type
  - Most people feed once a year
  - Half of homeowners don't use fertilizer at all
  - Generally, 0.8 lbs. nitrogen/1000 sq. ft. per application; building slow release into products
  - Education is on package, on spreader, on website
  - Happy to engage in all efforts possible to help homeowners understand how to properly apply a product and sweep off hard surfaces
- ❖ **More on Formulations and Applications**
  - Do companies manufacturer different products around different state's regulations or are all the same across the northeast?
  - *Scotts (Phil)*
    - Product is the same, but the label messaging may be specific to other states like NJ
    - Almost everything is close to 0.8 lbs. nitrogen/1000SF per application
    - Only product that exceeds NJ rate of 0.9 lbs. nitrogen/1000SF is *Greenmax* (specific application language on that bag for NJ residents). Product is solely for extra greening; dose of iron as well; sell fewer units than base *Turf Builder* formulations - if bought in NJ would apply at lower rate to meet regulations
  - *Carolina (Charlie)*
    - Do not sell retail to homeowners
    - Only blend and supply to registered lawn care companies
    - Homeowner doesn't use their product
    - Companies like *TruGreen* buy from them
    - Lawn care companies don't want to put down more than necessary because they get paid per application - doesn't make sense economically



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- *Scotts (Phil)*
  - *Stepline* sold through hardware stores – four applications based on university recommendations
  - 3.0 lbs. nitrogen/1000 sq. ft. per year
  - Most homeowners do 1 - 2 applications a year - about 1.5 lbs. nitrogen/1000 sq. ft. per yr. (based on average sales per person)
  - Half of homeowners don't apply fertilizer at all
- *TNC (Kevin)*
  - The public will be asked to spend hundreds of millions of dollars in wastewater treatment infrastructure upgrades across LI in the upcoming years to remove nitrogen
  - Why aren't we better managing the easiest sources of nitrogen - generally fertilizers used in landscape maintenance
  - There are a few towns (such as Southampton) that do not allow for the disposal of grass clippings, thus grass clippings are required to be left on the lawns
  - This results in less fertilizer needed since clippings are added nutrient
  - Is there a lower nitrogen product that helps enhance the soil but is targeted towards those who leave grass clippings in place?
  - Such a product could be a much lower N since you could take the grass clipping contribution into account
  - Could the bag labelling detail how much to spread if grass clippings are retained?
  - For established lawns, isn't adequate nitrogen provided by retained grass clippings plus atmospheric deposition (0.5 lbs. nitrogen/1000SF)?
  - Suggest pushing the maximum application rate down to 0.5 lbs. nitrogen/1000SF and decreasing the water-soluble component so leaching is lessened
  - Kentucky blue grass commonly preferred – requires much more fertilizer than other grasses
- *Industry reaction*
  - Don't disagree about Kentucky Blue Grass needing more fertilizer, but the general desire of people who have strong feeling about their lawns is that they like Kentucky Blue.
  - *Scotts (Phil)* – depends on the quality of turf desired
  - Turf has the benefit of keeping soil in place and reducing erosion
  - Grass clippings should absolutely be left in place; atmospheric deposition is minimal
  - Grass clipping and atmospheric deposition inadequate for optimal grass health and density
  - That's what they do for highway roadsides – results in very low quality turf
  - Using 0.5 lbs. nitrogen/1000SF is at the cusp of not seeing a response; response starts to be seen at 0.6 or 0.7 lbs. nitrogen/1000SF. Using 0.8 lbs. nitrogen/1000SF generates a consistent response (reason for recommendations)
  - *Scotts (Phil)* – no need to have separate labelling for retention of clippings; any fertilizer would work. Will think about that



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### ❖ Slow Release and Nitrogen Leaching

- *Scotts (Phil)*
  - All products sold have a slow release component; On average, 25-30% of nitrogen in all products is slow release
  - Also, have slow release *Summerguard* product
  - Think about all plant functions - nothing that can match turf grass in terms of above ground and root density
  - Will share data from leaching trials that shows amount of nitrogen that gets past roots

### ❖ Particle Size Information

- (SGN – *Size Guide Number* – The diameter expressed as millimeters x 100 of fertilizer granules based on the median size within the batch)
- *Scotts (Phil)*
  - All products formulated with small particle size (could be applied to golf course and not picked up by mower)
  - In agriculture want larger particle size for applications
  - In lawns want smaller particle size to match density of turf
- *Carolina (Charlie)*
  - *TruGreen* requires 190-240 SGN size depending on product
  - Urea manufacturers (*Koch, Agriam*) make many sizes - 90 SGN (small - greens grade) to 190 SGN and larger
- *TruGreen (Mark)*
  - 190 SGN is a large particle size
  - Doesn't think particle size has any impact on runoff - amount of nitrogen applied is all that matters - *Charlie (Carolina)* agrees
  - Easier to blow larger particles off impermeable areas (smaller gets trapped and runs off)
  - Uses a spec of 190-200 – what their spreaders are calibrated for
- *Carolina (Charlie)*
  - 90 SGN is the size of table salt; 150 SGN is the size of ground pepper; 190 - 240 SGN is considered medium size; 300 SGN (for agriculture) is like the top part of a ball point pen

### ❖ Why Use Various Particle Sizes?

- *Carolina (Charlie)*
  - Particle size is 85-95% on target for 240SGN.
  - Doesn't do residential but reason their customers want that size is the more screening you have to do the more cost is involved
  - Our customers are lawn care. They require 240SGN. Their spreaders are calibrated for that particle size.
  - Difficulties such as sweeping
  - Only golf courses really use tiny size



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- *TruGreen (Mark)*
  - 'Spreadability' and ability of spreader to calibrate
  - Might end up putting more out with smaller particle size
- *Scotts (Phil)*
  - Smaller particles are more forgiving for the homeowner - more uniform application
  - Better weed control
  - They use range of 150
  - Their spreaders are smaller and don't throw as far
  - More even coverage
- ❖ **Tightening Application Date Window**
  - *TNC (Kevin)*
    - Reaction to tightening window of fertilizer applications dates? Later in spring, earlier in fall?
  - *TruGreen (Mark)*
    - Not the direction they want to go – Long Island already one of strictest in the country
    - Can't go any further and still manage lawns to quality the customers expect
  - First application In early spring - don't apply until start mowing
- ❖ **Fall Applications**
  - *Carolina (Charlie)*
    - Turf should be fed before late fall dormancy; fall has always been shown by university research to be the optimal time for feeding
  - How does a fall application work with slow release fertilizer?
    - *Carolina (Charlie)* - would guess that someone who spread in early fall would see a lot of weed/undesirable growth and not be happy
    - Professionals do a lot better than homeowners
    - Slow release would still be valid in late fall because plant is actively growing (still mowing)
  - Sell fall fertilizer in early September then drops off quickly as retailers switch seasonal products
- ❖ **Number Applications and Timing**
  - Chart from UMass Extension Service
    - Shows number of applications per year and application timing
  - One application per year
    - If one application per year – late summer/early fall is best
    - *Scotts (Phil)* - would make sense; don't have a product that delivers at a rate that high (2lbs);
- ❖ **Enhanced Efficiency Fertilizers (EEF)**
  - EEF are slow release - protects component of fertilizer from immediate release
- ❖ EEF include inhibitors that do certain things (e.g. make N more available form)



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### ❖ Public Education

- *Save the Great South Bay (Marshall)*
  - 12,000 + signed up
  - The bay looked like chocolate milk yesterday; we have lost the shellfishing industry; real estate prices are dropping due to decline in apparent bay health
  - Homeowner education a sound approach
  - Would welcome coordinated public education campaign with Scotts & TruGreen
- *Scotts (Ann)*
  - That's why Scotts works with NGOs across the country; did PSAs on radio; worked with Great Lakes group; believe in getting out there to talk to people; a conversation they would want to pursue

### ❖ Regulatory Reporting

- *Carolina (Charlie)*
  - Company complies with state requirements to report sales data (sales to landscaping companies)
  - Applicators working in lawn care have to be licensed.
  - Some states require lawn care companies to ID what they put down; not in NY, which is difficulty encountered by LINAP

### ❖ Responsibility for Improvements

- 'Manufacturers' were number one response from questionnaire '*Who should fund research into improving fertilizer formulas to minimize nitrogen losses?*'
- Companies *are* funding research to improve formulations
- How would we go about doing / getting research regarding developing a fertilizer for lawns with mulched clippings?
  - *Scotts (Phil)* - can start to build as a concept and vet out at Scotts

### ❖ Potential Water Quality Certification

- May be a market for product labeled with a '*Water Quality Certification*'
  - Product would have lower nitrogen content and higher percent of slow release nitrogen
  - *Scotts (Phil)*
    - Would need to think about how to structure such a thing
    - Products already formulated for slow release to show results after one application
    - Open to considering all ideas, including a specialized product for consumers that want lower-input lawns
    - Want all their products to be part of water quality solution
  - *Scotts (Ann)*
    - Suggestions on what can be done to increase reporting
    - Lots of good ideas that require more conversation
  - *Save the Great South Bay (Marshall)*
    - *I Love Long Island* campaign includes more than 30 organizations
- ❖ A place to find landscapers ready to adopt organic products and bay-friendly techniques



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### ❖ Nutrient Recycling

- *Carolina (Charlie)*
  - Don't have a lot of input into creating a facility on Long Island, but if there's money in it someone will probably do it
- At least two companies on Long Island are processing wastewater sludge
- Use of seaweeds
  - Looking at seaweeds (markets for them) through a separate LINAP initiative
  - There were early discussions with Scotts about use of seaweeds
  - *RISE* - at least a few members looking into it - will follow up on that
- Is there a market in the industry for fertilizers manufactured with recycled nutrients?
  - *Scotts (Phil)* - always looking for alternative nutrient sources; not economically feasible to build a local manufacturing facility or to source local materials; have not found a fit for alternative nutrient sources; products manufactured in a single facility in Ohio
  - *Carolina (Charlie)* - facilities located in Massachusetts and New York; they blend ingredients manufactured by others to required specifications; would look at any product that could be incorporated on a cost per unit basis
- Use of biosolids
  - *Carolina (Charlie)* - biosolids usually 4-2-0; already used when requested; in some areas biosolids contain heavy metals that although below limits accumulate in the soil if used repeatedly
  - *Scotts* – is a manufacturer; heavy metals in biosolids keep them away from it; have an organic option rich in carbs and proteins; no biosolids
- Use of separated urine
  - No one aware of current use
- Use of yeast
  - *Carolina (Charlie)* - yeast products can boost plant growth and health

### ❖ Urea Nitrogen Sources

- Primarily manufactured from natural gas; sourced from various commodities markets
- *Carolina (Charlie)*
  - In most cases imported into terminal ports by brokers;
  - In a few years, the U.S. will become independent of foreign urea as Agria and Koch Brothers plants coming online from increase in domestic natural gas production
  - U.S. cost today to manufacture urea is \$133/ton at plant; about \$80/ton freight charge
  - Costs rise when start enhancing products

### ❖ Irrigation and Fertilizer

- *TNC*
  - Excessive or poorly design irrigation can increase fertilizer runoff and leaching
  - Do landscapers adjust applications for heavily irrigated properties?
  - Are fertilizers designed to handle excessive irrigation?
  - Should application rate labelling account for irrigation?



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- *Scotts (Phil)*
  - Can't control irrigation or heavy rain impacts, but can control recommended application rates designed to match ability of plants to take up
  - Rates are such that majority of fertilizer will be absorbed and used by plants in the coming month, then the remainder would be absorbed more slowly
  - Would not use different formulation for irrigated vs non-irrigated lawns
  - More heavily irrigated turf would have a greater density and therefore an increased nitrogen requirement and uptake capacity
- *SSER*
  - Talking more about companies or homeowners? Two different users that need to be considered separately
- ❖ **Water Quality Management**
  - *Scotts (Phil)*
    - Created *Water Positive Network* with NGOs and academics to learn how to protect water quality in the consumer landscape; company made major moves into water management
    - Working on developing products that improve control of irrigation system - new products will be launched to help conserve water, protect water quality, improve water use efficiency
- ❖ **Suggested Next Steps:**
  - LINAP to send spreadsheet with coefficients and link to questionnaire summaries to meeting list
  - Request group to email us with any useful data / studies they come across