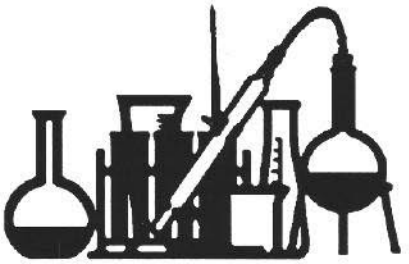

Questions From the Floor

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Q: For the five previous years or so, a hot topic among golf course superintendents was "the black layer". Special symposia were held, articles were written and every educational program from Maine to California had speakers addressing this subject.

Suddenly not a word about the dreaded black layer. What happened? Did the problem go away or wasn't it a problem in the first place? SAUK COUNTY

A: The silence is puzzlinq. As you know, a flurry of research came up with some remedial actions; deep, frequent aerification, use of the nitrate form of fertilizer N and a halt to use of elemental or sulfate-sulfur on putting greens. Nothing much was ever said about preventing black layer.

I can only guess why black layer has not received any press lately. If the basic causes of black layer are being researched for the purpose of learning how to prevent the problem, I can understand the silence. This is long-term research that won't come up with answers quickly. The precursor to black layer is interrupted drainage several inches from the putting green surface. This can result from the layering of topdressing sand over native soil. Once the sand depth is such that aerifier tines no longer break through the sand-soil interface, a saturated layer begins to form at this interface when rainfall is heavy and/or there is persistent overwatering. In sand matrix greens, the most likely cause of impeded drainage is downward migration of silt and clay particles from poor quality construction materials and eventual blockage of sand pores. In either case, these are conditions that require several years to develop.

I feel weather may also have played a role. Even after drainage has been impeded, it takes two to three months or more of water saturation before black layer begins to form. My first encounter with black layer was during a season following a very wet fall and an equally wet spring. Automated irrigation systems seem to have been a contributing factor to black layer in other instances. Another reason we haven't heard much about black layer lately may be because it's not a popular topic among those who heavily promote sand topdressing without regard to the nature of the soil from which putting greens have been constructed.

I personally don't feel that we've heard the last about black layer. The preconditions for its development have been and still are being created. All that's needed is a prolonged period of above normal rainfall.

Q: We have been forced to stop hauling our grass clippings to our local landfill and have decided to compost them. We were almost immediately discouraged, however, by the overwhelmingly bad smell. Neighbors and players are starting to complain. Is there anything we can do to get rid of the barnyard smell or must we abandon composting altogether? DODGE COUNTY.

A: Composting is a little more than microbial oxidation of organic matter. The basic requirements for rapid decomposition are fresh organic matter with a favorable C:N ratio, moisture and oxygen. The problem with grass clippings is the last requirement. Clippings pack so tightly that with the first burst of microbial activity all the oxygen in the pile is consumed and none can enter from the surrounding air. The decomposition process then becomes that of fermentation in which vile smelling organic acids and other aromatic organic compounds form. At this point what you're producing is not compost but grass silage!

The only way you can compost grass clippings is to somehow maintain aerobic conditions in the compost pile. Two things must be done. First, you have to mix the grass clippings with some type of dry material that will prevent compaction in the pile and allow for free interchange between carbon dioxide formed by microbes in the pile and oxygen in the surrounding air. Examples of such materials are dry tree leaves, wood chips and chopped straw. They need to be thoroughly mixed with grass clippings at a ratio of approximately one volume dry material to two volumes grass clippings. Secondly, the compost pile cannot exceed about 125 cu. ft. in volume. This is to ensure adequate oxygen in the center of the pile. Lastly, if you want the composting process to be complete in 2 to 3 months, you'll have to mix the pile a couple of times and make sure it stays continuously moist.

As you can see, composting is not a simple, low-cost disposal method for grass clippings. But don't give up completely on the thought of composting your clippings. As more and more municipalities go to solid waste composting you may be able to enter into a cooperative venture wherein you supply low C:N ratio grass clippings that will hasten the composting process.

Q: There are really a lot of exotic blends of fertilizers coming into our market. They are being sold under the guise of "slow release". Does the blending approach to slow release fertilizer really work? WOOD COUNTY.

A: My answer to this question is based on the assumption that what we're talking about here are blends of soluble and slow release N (SRN) fertilizers developed with the idea that such products give quick greenup followed by fairly uniform color and growth for a period of several weeks. Blends of this type are the industry's effort to come up with the "ideal" turf fertilizer and a competitive advantage in the marketplace.

Surprisingly, there is very little research information regarding the advantages of different combinations of

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soluble and SRN as compared to just soluble or SRN. I've examined this from a theoretical basis and have concluded that in many instances uniformity of turfgrass response is not improved by blending the two together. Hence, the practice seems to be based more on unproven assumptions than actual research.

I have an exchange student from the Netherlands working with me this summer. He's conducting a field trial in which bentgrass responses to urea and IBDU alone and in combination are being recorded. While its too early to present the results of his research, the data do clearly show there are overlapping periods of response to the two N sources and responses to each source are additive. We have just made the third application for the season and are now sorting out the responses to this application from residual responses to the two previous applications. We'll be reporting the results of the study at a later date and will then be in a good position to answer your question.

Regardless of which fertilizer materials are in a blend, there is something that has to be kept in mind when using any blended fertilizer. If the fertilizer materials in the blend are not closely matched with regard to particle size and density there is no way you can achieve uniform application of each of the materials in the blend. Uneven distribution of the various N sources means loss of much of the advantages of the blend. It's quite possible you've seen the consequences of this without realizing it. It takes the form of uneven turfgrass color as you near the time for another application. Areas that were fertilized with primarily soluble N have begun to yellow while areas that received mainly SRN still have good color.

Q: We built a number of new features a few years ago —greens and tees. The surfaces were seeded to Penncross creeping bentgrass and all the surrounds sodded to Kentucky bluegrass. Those surrounds, in many areas, have almost entirely been taken over by the bentgrass. It's a miserable situation— disease, thatch and fluffiness. They are about impossible to mow at 1.5 inches.

Any suggestions? Is there a selective herbicide that will remove bentgrass from other perennial grasses? I cannot bear the thought (or expense) of resodding. JEFFERSON COUNTY.

A. Let's hope someone comes up with that herbicide soon. Until they do, we're going to have to live with the fact that creeping bentgrass becomes very aggressive when mown at the height of other turfgrasses. In my research plots at the Cherokee Country Club creeping bentgrass has almost completely taken over 10 to 12 feet of adjacent Kentucky bluegrass in just four years. In talking with Dr. J.B. Beard last fall about some of the pitfalls to avoid at the O.J. Noer Turfgrass Research and Education Facility, he recommended that all creeping bentgrass plots be separated from other grasses by gravel or paved roads and mowers never be allowed to travel from the bentgrass to other areas without being thoroughly hosed off first.

Thus, the answer to your question is not a pleasant one. In lieu of the magic herbicide, you're going to have to live with the aggressiveness of the creeping bentgrass as long as you can, then resod.

Q: There is a lot of excitement around Wisconsin about the Noer Facility finally coming on line. Are the industry's expectations too high or do you and your faculty colleagues share the same excitement and anticipation? FOND DU LAC COUNTY.

A: If you'd asked this question two months ago my answer would have been very different from today. Completion of the building had been on hold for nearly 8 weeks while the demise of the now infamous barn on the site was resolved. Thanks to some very adroit maneuvering on the part of Tom Harrison, the last two months have seen a flurry of activity at the Noer Facility. All of the farmstead buildings are nowhere to be seen, the entire building site is graded pavement installed, the building landscaped, sub- and topsoil replaced on experimental areas and the demonstration and research areas seeded and mulched. Are we excited and full of enthusiasm? You bet!

There is, however, a deep concern on our part that we will find it difficult to live up to industry expectations. We hope you will be patient. As of this moment, replacements for Gayle Worf and Bob Newman have not been hired. Even when these people do come on board, they'll need time to map out a research program, find financial support for their research and locate topnotch graduate students. I'm just hoping that when they are ready to roll the irrigation system will be installed and operating.

We have taken the opportunity of soil movement to establish plots where we can study the effects of compaction during construction on nutrient and pesticide runoff and leaching losses from turf. Blocks of Kentucky bluegrass, turf-type tall fescue, creeping red fescue and perennial ryegrass have been seeded for testing of new mowing equipment being developed by Prof. Frank Fronzak in the Mechanical Engineering Department here at the UW-Madison. Tom Salaiz and I plan to get started on putting in various demonstrations later on and well be participating in the National Tall Fescue Trials.

Just in case anyone is wondering, management of the Noer Facility is in very capable hands. Tom Salaiz has demonstrated time and time again over the past couple of months what a capable young man he is. On some days he's had to deal with as many as four different contractors simultaneously. He has had to make many on-the-spot decisions, coordinate all the work going on and make sure everything is being done as we want it. He, like the rest of us, is looking forward to the day when research becomes the number one priority of the Noer Facility.

Finally, let me share with you something that happened at the Noer Facility earlier this summer. I gave a visitor from Penn State a tour of the place at a time when everything was at a standstill. After the tour and a sharing of our plans with him, he declared the Noer Facility to be "state- of-the-art and second to none in the country".

Q: The pH of the fairway soil on our golf course is slowly rising—a tenth of a pH unit every 5 years or so. Someone suggested it was the hard water we use for irrigation. Could that be true? VERNON COUNTY

A: Definitely. I'm surprised the pH hasn't risen faster. Home lawns in the Madison area commonly have pH values of 7.5 to 7.8 within 5 years or so after establishment. If you draw a line on a state map from approximately Marinette to Baraboo and then back up to St. Croix Falls, the area to the south is underlain by limestone. Consequently, the ground water in the area is loaded with calcium and magnesium. In essence, everytime turf in the area is irrigated with well water the soil is being limed.

Q: For some reason, my fairway fertilizer requirements for the 1991 season have dropped dramatically. I'm going to end up using 1.0 to 1.5 #N/M less than my average for previous years.

I'm on a heavy aerification program. Could it be that the soil that I've been bringing up to the surface is nutrient rich and reducing the N requirement? Or could it be the greatly improved rooting I've noticed? DANE COUNTY.

A: Aerification and better rooting may well be involved. Anytime soil is disturbed, there is a temporary flush of microbial release of N from organic matter. Aerification may also be reducing fertilizer N loss via denitrification. However, I'd venture to say that weather has had as much to do with the better fertilizer N response as anything else. First, we had June weather in May. This greatly increased response to the dormant Milorganite you applied last season. Then we had July weather in June. The high temperatures greatly slowed turf-grass growth rates and, consequently, the amount of fertilizer N used. The net result has been longer term response to fertilizer than you're accustomed to seeing.

To back up my answer, I've seen the same thing in my unaerified research plots. Creeping bentgrass last fertilized with fall IBDU or dormant Milorganite still has acceptible color. In fact, where I did apply some N two weeks ago, the color improvement was barely noticeable. In another experiment, this time with Kentucky bluegrass, I simply skipped the normal July N application because it wasn't needed.