



From The World of Turfgrass Education

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The early November snowstorm in Minneapolis was the site of the 1992 joint annual meeting of the American Society of Agronomy, the Crop Science Society of America and the Soil Science Society of America. University and industry researchers from throughout the country assembled to share ideas and the results of their latest research. Division C-5 of the Crop Science Society is devoted entirely to turfgrass. A number of research reports given are of interest here.

Golf putting greens seem to be receiving increasing attention by researchers, perhaps because of recent publicity that has focussed on USGA-type greens. Researchers at the University of Tennessee are conducting a long-term study on the use of geotextile fabrics in place of the course sand ("choker or blinder") layer in USGA greens. Over four years they have observed extensive downward migration of silt and clay particles in all rootzones, irrespective of whether or not the choker layer was present or was replaced with geotextile fabrics. However, the percolation rates have yet to decline to the *upper* limits specified by the USGA for compacted greens. While these results bode well for use of a geotextile fabric in place of the coarse sand layer, USGA Green Section staff have seen numerous green

failures where the fabrics have been used and continue to advise against their use. One can't help wonder what role silt and clay content of the rootzone sands had to do with these failures.

Have you ever wondered if heavy fungicide use on a putting green can have adverse effects on the bentgrass? According to researchers at Purdue University the negative impacts of heavy fungicide use on turfgrass are very minimal. Three systemic fungicides applied a total of 32 times over a 2-year period occasionally reduced bentgrass visual quality for short periods of time.

Alternatives to peat as the organic amendment in rootzone mixes continue to receive the attention of Cornell University researchers. Choice of organic amendment has proved to have an effect on disease incidence in bentgrass. When plots were inoculated with *Pythium*, rootzones containing sludge compost or brewery waste compost had 80% less damage than occurred with a pure sand rootzone or one containing a granulated seaweed product. Rates of decomposition of the organic amendments tested were in the order sludge compost > reed sedge peat > brewery waste compost > granulated seaweed.

New and novel uses of the Hydroject water injection aerator are being

explored by Michigan State University. Injection rather than surface application of wetting agent reduced the impact absorption value of a putting green by 28% for up to two weeks and increased water retention after a heavy rainfall by 60%. Injection rather than surface application of late season N resulted in more uniform greenup and increased bentgrass recovery of the fertilizer N by 34%.

Pressures to reduce pesticide use and to implement IPM programs have prompted investigation of cultural practice influences on turfgrass disease and weed control. At Southern Illinois University, simply by mowing at 2.25 inches rather than 1.5 inches the incidence of brown patch in a new seeding of tall fescue was reduced 46%. Nitrogen carrier and rate effects on brown patch were relatively minor. None were evident when the N rate at seeding was 1.0 lb/M. At the 2.0 lb/M nitrogen rate there was a non-significant tendency for greater incidence of brown patch the slower the N release rate of the fertilizer applied.

Cultural practices were found by Maryland researchers to have a major impact on crabgrass encroachment in tall fescue. Satisfactory control was achieved without herbicides if the mowing height was maintained at 3.5 inches. Dropping the cutting height to 1.25 or 2.0 inches made use of herbicides necessary. Nitrogen rate had no effect on crabgrass encroachment when herbicides were used. In the absence of herbicides, increasing the annual N rate from 2 to 4 lb/M reduced invasion by crabgrass.

We seem to be in a no-win situation when it comes to herbicide application.
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Use of low-pressure, large droplet nozzles is very effective in controlling drift. But research at Maryland has shown that with these nozzles and especially those with large droplets, the amount of spray remaining on foliage is very low. Consequently, weed kill by contact herbicides is significantly less.

Grass clipping management continues to receive attention. Research being conducted at North Carolina State University has revealed the not-too-surprising fact that substantial N leaching losses occur from turfgrass clipping compost piles. Losses from open piles have been up to 31 times greater than from covered piles. Now that this research has disclosed yet one more non-point source of N pollution, what's next? Regulations that require impervious composting pads and leachate collection basins? Perhaps some enterprising person will do just that, collect and bottle the leachate and become rich. My guess is that the leachate would be as good a biostimulant as some of those currently on the market.

A final topic being researched is the effects that various turf products have on soil chemical and physical properties. In Georgia, a wide array of N carriers, some inorganic, some synthetic organics and some natural organics, were found to differ very little in their effects on soil properties. Among several properties investigated, only soil cation exchange capacity (CEC) showed some N carrier effects. All N carriers increased soil CEC due to stimulation of turfgrass growth and subsequent increases in soil organic matter. Natural organic N carriers generally increased soil CEC more than did SCU.

The common claim that wetting agents reduce soil compaction and improve turfgrass growth was also studied. Several wetting agents applied to tall fescue growing in compacted and non-compacted soil had no influence on turfgrass quality where the soil was compacted. When applied to the non-compacted soil, the wetting agents reduced the moisture content in the top 12 inches of soil, reduced rooting by 44 to 58% on two occasions at the 12- to 24-inch soil depth and had no influence on turfgrass quality.

Dr. Throssell, Purdue University, presented a very interesting paper on the use of herbicides to control weeds in spring turfgrass seedings. I'm going to assume that he will share this information with us as a featured speaker at the WTA Winter Turfgrass Conference. 🍀

Legal Matters



How To Address Local Laws

Timely Tips for Golf Course Superintendents

By Dr. Winand K. Hock
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Editor's Note: This concise piece of advice was given to participants at the GCSAA "Environmental Considerations in Golf Course Management" seminar in Fon du Lac in early November. It is reprinted here with permission from Dr. Hock. Again, when you have legal questions or need advice, consult your organization's attorney.

If local regulators are considering enacting pesticide ordinances in your community, consider the following:

Before a local ordinance is proposed:

- Get help! Don't think that you alone can convince your regulators to drop or modify their plan to regulate pesticides at the local level. Solicit support from other golf course superintendents as well as from lawn care professionals, landscapers, arborists, nurserymen, pest control operators, utility companies, and the agricultural community at large. Remember, local regulation could affect all pesticide users, even homeowners.
- Make sure local legislators know that current federal and state laws, developed by regulators with scientific and technical expertise not available on the local level, already afford sufficient protection.
- If your state law requires posting and/or pre-notification, make sure your local officials know of their existence.
- If health and/or environmental issues are raised by local regulators and well-meaning, but often misinformed, residents, get the facts to counter their position. Refer to relevant university and governmental agency studies to support your position. Have copies available for distribution. GCSAA and your state land-grant university may be able to help. Avoid using documentation and publications generated by the pesticide industry. Although quite accurate, such information is suspect in the public's eye.

- Point out that with the possible exception of human pharmaceuticals, no other class of chemicals receives such thorough health and environmental testing than pesticides. Industry often spends in excess of \$50 million and takes 7 to 10 years to develop a new product. Only after EPA reviews the data and registers the pesticide can it be sold.

What if local regulators still want to move ahead with a bill:

- Offer to work with the local government regulators to pass a bill you can live with.
- Be sure to consider very carefully any posting and pre-notification provisions. Although these may be directed primarily at the lawn care industry, can you as golf course superintendents live with such proposals or should you try to exclude golf courses from some of these provisions?

What steps can you take to change local regulation authority?

- Above all, support state and federal pesticide proposals to preempt local regulation authority in this area. Several states are contemplating modifications to their pesticide law to preempt communities from passing their own restrictive local ordinances. 🍀

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