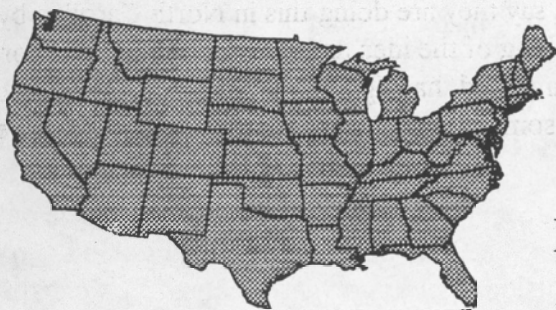


# TurfComms

Vol. 10, I3



May 8, '97

**PURPOSE:** To pass on what we learn willingly and happily to others in the profession so as to improve turf conditions around the country.

**BENTGRASS RESEARCH, INC. SYMPOSIUM:** On April 25th at a local country club six distinguished speakers and a small select audience gathered to discuss ideas, research, observations and thoughts that hopefully will result in more successful management of creeping bentgrass putting greens in North Texas. From 8 A.M. till 5 P.M. an intimate and animated meeting of researchers, superintendents and other interested parties was held.

Dr. Coleman Ward, Auburn University, talked on Construction of Greens. He hammered away at the need to understand the soil physics of water movement in soil, from adhesion and cohesion to hydraulic conductivity. The latter being the capacity of soil to transmit water when it is saturated. He spent most of his time on the USGA Specifications giving us some of the horror stories that emphasized how easy it is to foul up those Specifications or perhaps emphasizing how closely they must be adhered to if success is to be obtained.

He also talked about the Purr-Wick System and California Rootzones. The former he dismissed and rightly so as being only suited for flat sports fields the latter he dismissed too quickly for my liking especially when in a private conversation he spoke of a need for a more economical method of greens construction.

He stated the California method had an advantage of being able to use a less costly sand but didn't note that it is also a less costly construction technique. He felt that this method resulted in a green requiring more frequent irrigation, one that was less stable the first year, one that required more

---

**TURFCOMMS** is published at unpredictable intervals by the editor and publisher:

Douglas T. Hawes, Ph.D.  
Certified Professional Agronomist  
Specializing in Golf Course  
Maintenance Consulting

2408 Roundrock Trail  
Plano, Texas 75075  
(972) 867-0176  
Fax (972) 519-9263

Subscription cost is \$15. Send checks to Doug Hawes at the above address.

fertilizing, and said it was more prone to developing thatch because it was reasonably devoid of microbes (if one used straight sand and no organic matter).

He noted that rototilling in organic matter into sand resulted in a perched water table in the upper 3 to 4 inches but in private conversation admitted that after ten to twenty years of management a USGA green often ends up with a 3 to 4 inch layer on the surface that is very high in organic matter. Thus not much different than rototilling in organic matter at the start.

Some hints on building USGA greens correctly that he left us with are: 1) when trenching into the base be sure to remove the trenching spoils (dirt). 2) corrugated tile crushes too easy, use solid pipe with holes on the bottom. 3) he recommends even heavier wall pipe once outside the cavity. 4) be sure to put smile drain in front edge. 5) he puts tracer wire (14 gauge) in drains and has flush outs. 6) put 10 mil. plastic barrier around outside edge to prevent wicking. 7) if choker layer is to be omitted then 65% of the gravel needs to be between 1/4 and 1/3 inch in diameter.

He feels that organic matter helps to hold clay in profile and that a little is needed (<5%). He feels 11-13% water retention at 40 cm tension is ideal for bentgrass in the South. He feels we need to prove **zeolites** are stable before using in mixes.

On closing he noted that bermudagrass does not do well on sand.

At lunch he brought up the need for a more economical way to build greens. He thought scraping out a funnel shaped center with a large drain to it might be more economical. Then you would grade the gravel to match the surface contours desired and add choker and an approved mix. I offered my approach which is to leave all the drains out except for a smile drain across the front.

Dr. Dennis Shepard, Norvartis Corporation, spoke on the use of growth regulators on greens. Please note Norvartis Corp. sells **PRIMO**, which now has a label for use on greens. He started almost immediately by noting to all that the wettable formulation of Primo was twice the strength of the emulsifiable concentrate. He also went into detail concerning the history and different types of commercial growth regulators and how the different types shut down growth differently.

Primo appears to result in discoloration a good deal less often than its predecessors. Primo has no carry over that effects germination.

When used on greens speeds increase 6 to 12 inches and greens retain the same speed better through out the day. Some strains of *Poa annua* shut down at lower rates than for bentgrass. This, I have seen. Primo on greens will not slow down ball mark healing or divot healing in bentgrass fairways. They have found no increase in thatch from Primo use. There is a water use reduction by the plant. Researchers are seeing increased rooting and root stored carbohydrates. Research shows that Primo does not move down in the plant well; need to soak the crown for best results. But, this means that roots and rhizomes are not affected.

On the negative side Primo does not slow the growth of weeds except for some *Poa annua* strains. A local superintendent with high sodium and bicarbonate water reported no results using a 1/10 ounce rate and a burn at 1/4 ounce rate.

He ended by noting one should not use the growth retarding fungicides such as Rubigan, Banner, and other Demethylation inhibitors (Bayleton, Sentinel) when using Primo on greens.



Dr. Robert Dunn, nematologist from Florida, discussed **NEMATODES** next. He stressed that they were aquatic animals that move and live in the thin film of water in the soil. And that they need a high level of oxygen in the soil; and thus sandy well aerated mixes encourage their growth. Any nematicide that is going to kill them must be very water soluble. Water soluble chemicals are easily leached down into the water table or removed in runoff.

Nematode damage is often associated with low soil potassium levels and they thrive where the turf is stressed from other causes. He noted that Triumph will work as a nematicide if the label is followed absolutely. Nematicur if used repeatedly tends to be broken down in the soil very quickly by soil microbes that develop a taste for it.

In response to questions at the end of the program Dr. Dunn said that if you can only treat for nematodes one time than it should be early in the summer (Ed. late spring) when you can still grow new roots. He also said no one knows how to manage parasitic nematodes (Ed. in this case nematodes parasitic on parasitic nematodes) in the long run; occasionally people do get good results using them. He also noted that more often than not nematodes are a secondary factor in the turf's decline.

Dr. Leon Lucas, a plant pathologist from North Carolina State Univ., spoke on **HEAT STRESS AND DECLINE OF BENTGRASS**. He first pointed out that bentgrass is a C-3 plant that is very inefficient producing photosynthates once temperatures get above 90°F. Later he pointed out that this is why morning sunlight is so critical to bentgrass greens. This is the only time of day in the South that they can produce and store carbohydrates during the summer months

He also noted that he used to call "bentgrass decline" pythium root rot except that he found he could find pythium in the roots all year round. He also finds Take-all patch organism in dying bentgrass but does not feel it is the cause of death. Using the new infra red temperature guns he started taking temperature of the turf. He found that when bentgrass foot prints on a 92°F day that the footprinting turf was at 105°F. When the grass goes into a blue wilt stage it reaches 115°F on the same 92°F day. By the way he said these infra red temperature guns are now available through Forestry Supply for \$200.

"High sand greens may need two times more aerification than other greens." Why? I wasn't sure so I requested an explanation. He wrote back, "is to keep the thatch layer open. I think 3/8 or 1/4 inch solid tines are good for the summer. These holes are large enough to stay open for several weeks to allow better aeration and to help drain the thatch layer. **The finer textured thatch causes a perched water table at the surface around the stolons and roots.**" (Ed. emphasis is mine).

He does note later that a thatch layer can get air tight and that you must keep it open. For this purpose he suggests monthly use of 1/4 inch tines, 2 to 3 inches deep. I assume on two inch centers. He feels magnesium is very critical for root growth.

He also notes that he has seen cases in humid high rainfall North Carolina where soluble salts have caused problems and a one pound application of potassium sulfate per thousand was enough to kill bentgrass in the summer time. He also noted that potassium is generally not leached out of a thatch layer. He suggest not putting on more than 1/4 pound of potassium/1000/ application during the summers.

He questions using Dimension on bentgrass greens. He feels it is too much of a root inhibitor. Noting it does the same on zoysia. He suggests O.M. Scotts Goosegrass Preventer (Ronstar/Betasan) is safer.

He noted that dew was one of the better indicators of healthy turf. He also noted the Aliette/Fore and Daconil/Fore combinations that have proved helpful in preventing summer decline. He noted this correlates with phosphorus additions present in the Aliette. He added that Heritage appears to be helpful in reducing summer decline but, they are expecting the fungi to develop resistance quickly to this new fungicide. He added that the blue pigment in Fore adds to color and quality of turf.

He suggested digging out those old Mat-O-Ways and digging one inch deep groves across the greens. Then topdress to open up slits for long periods of time through the thatch for better air and water movement. He had seen this be particularly effective on the new cultivar G-2, and appears to result in less localized dry spot problems.

His four management suggestions for heat stress on bentgrass greens are:

1. aerify - encourages root growth.
2. improve air movement.
3. fertilize lightly - you often have no roots so must foliar feed.
4. irrigate as needed.

Mark Price, supt. Northwood C.C.- Dallas, noted that he had been using Toro groomer deep on a weekly basis and topdressing lightly every two weeks during the summer on 'Cato/Crenshaw' bentgrass greens. He didn't feel this was enough to control thatch on that cultivar.

Dr. Milt Engelke, Plant Breeder at TX A&M-Dallas, was the final speaker. Dr. Engelke released Cato and Crenshaw bentgrass a while back. He suggests you never aerify Crenshaw in late Fall once day-light hours approach 10 hours or less. He notes that it has a high sunlight requirement and therefore doesn't recover well. One can assume this cultivar does not have great shade tolerance either.

Dr. Engelke urged superintendents to flush their greens every two weeks during the summer. He was quite specific about this and gave figures for a 5000 sq. ft. green. He feels you need to apply 11,360 gallons to obtain a good flushing. This is based on 30% capillary pore space in 12 inches of mix. This is equivalent to all the water from a gentle 3.6 inch rain being absorbed by the putting green and thus flushing the pores space. (Ed. I can see and do encourage flushing where salty/high sodium water is being used but question the need even in summer time of doing more than once a month.)

Engelke noted that the new bentgrasses needed an 1/8 lb. nitrogen and  $K_2O/M$  every two weeks. And he urged avoiding excess of nitrogen at any time with these new bentgrasses. He too emphasized growing roots. Then he announced very briefly the release of three new creeping bentgrasses: Century, Backspin and Imperial.

When the question was put to the speakers, "Will we go back to more organic matter to get higher CECs?" Dr. Lucas answered say they are doing this in North Carolina by adding sandy loam to the mix. Dr. Ward expressed a liking of the idea and stressed the need for organic matter in the mix to hold any clay in the sandy loam. (Ed. having just recently run some percolation tests on a sand with a lot of clay {8%} I agree that something will be needed to hold the clay because it sure flushed out of the sand I was testing.

**END**