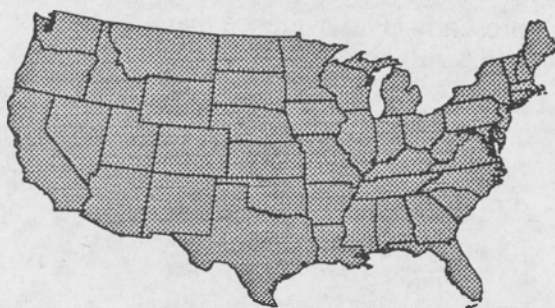


# TurfComms

V. 13, I.2



Dec. 29, 2000

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

**TEXAS TURF CONFERENCE:** December 3 - 5th in San Antonio was when and where this event was held this year. Tom Ash of Calif. gave an interesting talk on water conservation. He related his experience in getting reduced water use in landscape plantings. Basically showing people how to reduce waste through site and irrigation system management. He has found that typically 55% of landscape water use is wasted. He also noted that on an area basis it is not golf courses that are wasting water it is the homeowners. Anybody that has gone around a development golf course during a drought and seen water draining off various house lots can find that easy to believe.

The city he worked with in California was able to reduce runoff in a normally dry creek (before housing development) from 6 cu.ft./sec. (with development) to 1 cu.ft./sec. (with water conservation practices in place). They first found the expected water use for the property based upon number of residents and ET of landscaped area. Then compared that with the actual water use. Then they labeled water bills depending upon how actual amount used compared to expected and came up with 4 groupings: **Water conserving, On target, Excessive user, and Abuser**, or terms with similar meanings. Also there were severe increases in billing rates for the last two categories of users. The home owners actually complained more about the terms they were labeled with on the bills than the added \$. The combination of education, billing terms, and increased fees did the job.

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Landscapers made out okay in the above situation because they were called back in to redesign irrigation systems so that they did not waste water. Some landscapers went so far as to micro manage the systems they put in. By this I mean they periodically checked and altered the times on the clocks so that the system more closely matched ET.

Dr. Coleman Ward gave, as usual, an interesting talk. This time it was about current research in the Southeastern U.S. He first discussed soil amendments noting that current research was showing that peat was still the best amendment for water holding and reducing leaching. However, Profile and Ecolite were better at holding ammonia. Zeolites do contribute a lot of CEC. Whereas Profile and diatomaceous earth contribute only small amounts. That, in general, where the above mineral amendments were used without peat, localized dry spots were more of a problem.

If aerifying, you need to topdress immediately if you wish to retain the highest possible quality ratings.

**Fans** not only reduce temperatures, they lower leaf and soil moisture levels, and reduce Brown Patch. On the latter, at 3 mph air speed or higher, the hyphae dehydrate and get entangled. For best cooling, use fans with syringing. If fans are left on too long the grass is apt to get Dollarspot.

Dr. Ward noted that Dr. Mazur of N.C. has a new **seeded bermudagrass** release that is superior to Princess in color and density. It will be called 'Valley'. The 'Bullseye' bermudagrass sold by Western Turf and recently discussed in a trade journal for its use on a new golf course in Mexico is Mississippi Choice. This, he noted, is a dense sports turf.

Two new **tall fescue** cultivars worthy of note are Clemson II and Southeast. The latter tolerates low pH, has medium texture and good heat and drought tolerance.

He then went over a **wear** study comparing **bermudagrass** with the **seashore paspalums**. Of course, bermudagrass takes more wear, recovers faster, has greater biomass, and is damaged less by studs. Paspalums do have the advantage of multiple leaf levels and feel softer to the athlete and are thus liked better by the user.

He also noted that a recent study had found that overseeding has another plus environmentally, in that it reduces nitrogen loss in winter.

Dr. David Kopec, Univ. of AZ, gave two talks on **irrigation water quality**. One to a session of those interested in water conservation and another, the next day, to the golf course section. I'll take the liberty of combining them along with some material from a copy of his notes that he gave me. I heard a portion of the first talk and all of the second. He claimed never to have seen enough boron or chlorine in effluent to damage turf. (Ed. Ornamentals are generally more sensitive than turf.) He noted that you should look at tertiary effluent only as a water quality problem not a bacteria and/or virus problem. However, State law may restrict use severely. In AZ no eating, drinking or bathing facilities are to be within 75 feet of sprinkler application, and no

above ground spigots or hose bibs are allowed at facilities using effluent. In Texas I am reasonably sure you are not legally supposed to use effluent while players are on the golf course.

He basically recommends two chemical amendments for high exchangeable sodium percentage(ESP) soils: apply **gypsum** - if free lime is other than HIGH. **Sulfur** if free lime is high; and note under those conditions, one pound of sulfur is equal to 9 lb. of gypsum. At the same ESP level the need for gypsum goes up as CEC of the soil goes up.

He recommends acid injection into the irrigation water when the RSC (residual sodium carbonate) value exceeds 1.25. RSC values of 0 to 1.25 he considers safe, 1.25 to 2.5 marginal, and over 2.5 generally not suitable for the irrigation of turf. The acid converts the  $\text{CO}_3$  and  $\text{HCO}_3$  to  $\text{H}_2\text{O}$  and  $\text{CO}_2$ .

He stressed the need to calculate a leaching fraction if soluble salts are a problem. See Chapter 8 in Carrow and Duncan's text "Salt-affected Turfgrass Sites" for a detailed explanation. This test was reviewed in a recent TurfComms issue.

Dr. Hanna, although employed by USDA he is a promoter of TifEagle so beware of what you read here. He claims that very good putting surfaces can be maintained from the cultivars: Floradwarf, Champion, TifEagle MS Supreme, and MiniVerde.

He gave the following bias advantages of TifEagle over the others: 1) Uniform turf at 1/8 inch, Stimp 9 - 10 feet. 2) good color retention, 3) overseeds well with *Poa trivialis*, and transitions well. 3) Lower thatch producer than other ultra dwarfs, and has rhizome growth. (Ed. not a lot) 5) Genetic purity is much improved over Tifdwarf, but at present that is true for all the ultradwarfs.

Best Management Practices for Ultra Dwarfs:

- 1) Keep N level to lowest possible level.
- 2) Use liquid fertilizer and spoon feed rather than granulars.
- 3) Use microprill rather than coarse when granulars are needed.
- 4) Keep potassium levels up, so as to keep disease down.
- 5) Soften contours of greens before planting with ultra dwarfs.
- 6) Move roller closer to blade so as to reduce scalping.
- 7) Topdress lighter and more frequent, consider using dry bagged sand.
- 8) Avoid deep vertical mowing. Do it lightly before topdressing.
- 9) Aerification is best with 1/4 inch open tines.
- 10) Establish with certified sprigs at 12 to 30 bu/M, keep moist, ship in oxygen free environment.
- 11) First mowing should be a 3/16 of an inch after two weeks. Second at 5/32.

Brian Maloy, the local USGA agronomist, noted that Tifdwarf exhibits phytotoxicity to DMI (demethylation inhibitors) fungicides. Those are Rubigan, Banner, Bayleton, Sentinel, and I believe, Eagle.

Tom Brown, a PGA agronomist with deep roots in Texas, gave an interesting talk on bunker maintenance. To help explain PGA philosophy he noted that within the organization there is a strong desire to be consistent. He also noted that the advertisers want the tournament to run on schedule. Another preface he made is that the bunker is a **HAZARD** but, this is a term that has been softened over the years. (Ed. I would write - much softened) It also noted that the players determine conditions. (Ed. in the PGA as well as every other golf course in the US)

The depth of sand has a strong influence on their recommendations but playability is a prime goal. The sand on the face should be thin but the higher and steeper the face the more sand needed at the base to hold it up; see drawings below that I have done to make up for not having his slides to show you.



Yet at the same time you must avoid buried lies, while having internal drainage (percolation) of 20 inches per hour. He noted that when geotextile covers are used over gravel and or gravel over the whole base you end up with a perched water table. The capillary action will drain excess moisture from a sand over soil but not one over gravel. The PGA is looking for 1 inch of sand on the faces, 4 to 5 inches on the floors, and 3 inches in the transitional areas. He did note that more sand on the faces results in less washing.

Under the "Bunker Guard" system the sand he has found is very slow to firm up. Fines don't migrate up into the sand and it is these fines that help firm up the sand. Another factor in firmness of sand is the angularity of the sand. Perfectly round sand never firms up. The fried egg potential can be determined for a sand with a penetrometer. Readings between 2.5 to 3.0 kg/cm<sup>2</sup> are the range the PGA seeks. However, he noted that the PGA had found a range of 2.6 to 3.0 kg/cm<sup>2</sup> by sending the same sand to three different laboratories. They have used Har-Tru™ at 160 lb./1000 sq.ft. mixed in sands that are not firm enough. Har-Tru™ is a tennis court surfacing material from the East Coast. Marble dust may do the same thing.

Other PGA suggestions: leave rakes outside bunker, no big tine rakes, need good sharp edge to bunker, line of raking should be toward the flag(green). Gravel diameter under bunkers must be no more than 5 time that of the sand in the bunker.

Dr. Dennis Martin, OK State Univ. turf man, discussed simple magnets, electromagnets, dissimilar metals and radiowaves for the improvement of water, or water treatment. There is now some scientific documentation that magnets can condition the water for scale protection in boilers and piping, close to where the water flows over the magnets. But this is still controversial and under study. (Ed. I saw this back in the early 80's at Industry Hills Golf Course in California. They had great success with magnets reducing scale formation in the pumphouse. It's benefit was most noticeable on the inline screens they were using to help clean up the effluent they were using. Radiowaves may also work. There presently is no evidence that any of these methods/devices improve turf quality.

END