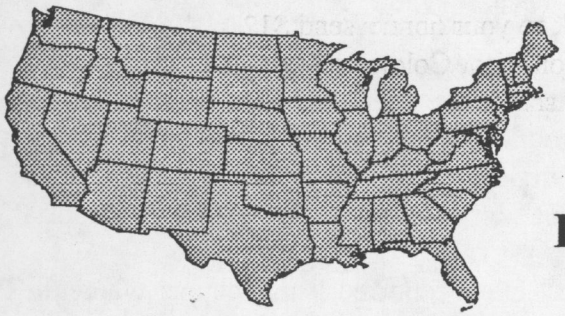
TurfComms



Vol. 9, I. 8 **Dec. 9, '96**

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

PRIMO: Has anyone else noted that this material causes earthworms to put up casts? Speaking of earthworm I just read in Northwest Turfgrass Topics Vol. 39, No. 3, Fall 1996 that iron sulfate discourages earthworms from making their casts.

COPPER TOXICITY: Had the dubious good fortune to visit a golf course site in Arizona on a piece of land that included a large copper smelter tailings pond at one end while the other end was close to the old smelter. The ppm copper in ten soil test taken before I got there by two agronomist showed a range of 2(normal) to 214(very toxic ?) ppm available copper at a pH of 8. I mention the latter because one of the first things you can do if too much copper is present is to raise the pH. The higher pH makes copper less available. Average available copper for these 10 samples was 78 ppm.

In phone conversations with Harris Lab. personnel they claim not to have seen any problems below 25 to 30 ppm. They consider 50 to 100 ppm to be a danger level and have seen where 200 ppm killed trees. Lin, et al found that new lawns of cool season grasses were almost destroyed by 25 - 35 ppm available copper. No such problems were noted where available copper was at four to six ppm; and old lawns persisted at 20 ppm. This was in Northern England; definitely cool climate with little heat stress to test plants with weakened roots. Which is what high copper levels do. Wu, et al using nutrient culture technique found 0.25 ppm resulted in root injury on bermudagrass. Huff and Wu found 0.35 ppm in solution culture was a sufficient level to differentiate between copper tolerant and sensitive red fescue strains.

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.

I had seen a symptom of copper toxicity once before at the University of Maryland. The symptom observed was that at the bottom of copper drain pipes from one dormitory Kentucky bluegrass and other cool season grasses were gone and what was left was bermudagrass. In a conversation with another North Texas consultant he told a similar tale only this time it was all the ornamentals that were dead or dying and yes the bermudagrass was alive. Freeborg and Daniel of Purdue reported copper from downspouts to stunt grass growth. A similar observation was made in 1956 on a green at the Point Judith C.C., Narragansett, R.I. The superintendent there, John A. Tucker, brought to the attention of Dr. DeFrance certain areas relatively free of annual bluegrass while surrounding areas showed heavy infestations. It was noticed that the areas free of Poa annua received drainage water from the copper gutters and downspouts of the clubhouse. You will find this written up in your Golf Course Reporter of Jan. 1959.

The authors, DeFrance and Kollett, reported 1 ppm copper where the Poa annua was thriving but in an area where everything was dead apparently because of the copper there was 3 ppm copper. They were able to obtain some Poa annua reduction using various copper compounds. I was studing under Professor Troll, Univ. of Mass., at the time I did the literature review and he had just come up from obtaining a Masters at Univ. of R.I. He said that work in an unpublished paper at U. of R.I. from greenhouse studies had shown copper was injurious to bentgrass under summer conditions. Which was why the research on Poa control with copper wasn't continued.

I have seen 5 ppm of available copper at two golf courses. One had bentgrass greens relatively free of Poa annua. Their Kentucky bluegrass fairways didn't look so hot. Next year I'll have to have them tested for copper. I'm not sure where the copper is coming from on this course. The other is a bermudagrass course. The copper is coming from the effluent. The bermudagrass seems fine, although I've seen better roots on bermudagrass greens. Nutsedge appears to tolerate this level of copper nicely.

What does copper toxicity look like? Well first you may see failure of annuals to germinate and grow. Leaves of perennials can be expected to develop chlorosis and creamy-white-colored lesions if work by Lee et al with 'Baron' Kentucky bluegrass holds for other grasses. Your turf will have a poor root system all the time and be very sensitive to drought and heat stress. If you should by any chance want more information on copper toxicity I have put my notes in an unpublished paper which I would be glad to send to subscribers.

NEW BERMUDAGRASSES: Got a chance to see 'Champion' bermudagrass in action down to the Rio Grand River in South Texas. This is a new release by Coastal Turf, Inc. of Bay City, Texas. It appears to grow something like 328 except with shorter leaves, more prostrate habit, and more vigor. It was just released this Spring as a dwarf bermudagrass. The course I was visiting was using it on greens. According to Coastal Turf's literature it produces no seed heads and has a very slow vertical leaf extension rate. Unmowed it gets only one inch high. I'm a little scared it will be a bad thatch former because it grows so vigorously.

Got a second chance in October to see 'Champion' out in Midland, TX where it was the north 1/2 of a practice putting green. Tifgreen (328) was the south half. It definitely was denser and the superintendent felt he could mow it as close as he wished because it had so little vertical growth. Maintaining good greens with it was a "no brainer" he thought. At collar height it also made a very dense turf.

While at the Texas Turfgrass Field Day on September 25th I picked up a brochure on 'Baby', formerly in National tests as TDSBM1. This is being sold by Crenshaw & Doguet Turf Farms. They claim it is a semi-dwarf "with internodal length shorter than that of Tifgreen." They claim it "will do well in the transition zone."

Then I opened up my copy of the Sept./Oct. USGA Record to read about "TW-72: A Potential New Bermudagrass For Golf Greens'. Then attented the Kentucky Turfgrass Conference and Show, also the home of 'Quickstand'. University research there seemed to indicate that it was set back some in the Spring by Ronstar at 3.0 lb. ai/A and 0.5 lb ai/A of Dimension. Confront at 0.75lb ai/A and Trimec at 1.65lb. ai/A both set it back during spring green up.

The Fall 1996 issue of Texas Turfgrass has an article by Dr. Duble describing briefly several of the above and F;praDwarf "developed by the University of Florida for its superior putting quality. It maintains great density and color at mowing heights of 1/8-inch or less and provides very fast putting surfaces." writes Duble. Watch out growers of bentgrass greens the snowbirds may come back in a few years wanting those new bermudagrass greens they played on in South Texas and Florida. Yes, they are that good and take the wear a lot better than bentgrass.

In the last issue I mentioned OK's new seeded cultivar, OKS 91-11, as being cold tolerant. Well it appears Virginia also has a cold tolerant seeded cultivar it is about to release, VT-V-3. Dr. Schimdt of VPI State Univ. showed data at the Kentucky Conf. that noted Midfield, Midlawn and Midiron all tolerate winter traffic better than Guymon and Vamont. The latter two were better than many others.

If it is cold tolerance you need get your hands on the Kansas selections (Mid-). He also noted that early spring traffic was the most damaging to bermudagrass. He also showed data that appeared to indicate that covering bermudagrass greens in the Spring was the most critical time and noted that preemerge herbicides hold back bermudagrass in the spring.

SPRING DEAD SPOT: Sulfur at 6.9 and 10.4 lb./1000 ft^2 applied in late summer provided significant SDS reduction the next Spring under a moderate outbreak of SDS in 1993-4 KY research.

BENTGRASS COLLARS: Terry Buchen was at the Kentucky Turfgrass Conference and while there related to me how several superintendents had reported to him that they had better bentgrass collars when they mowed them daily vs. 3 or 4 times a week. The very next day reading the Kentucky Turfgrass Research 1994-1995, Progress Report 387, I found that Kentucky researchers reported a significant reduction in dollar spot on bentgrass mowed daily vs. less frequent intervals.

CULTURAL CONTROL OF WHITE GRUBS: Kentucky researchers report early indications that in regards to Japanese and masked chafer beetle egg laying and or young larva survival (grub density) that lime or urea applied prior to beetle flights had no affect. Neither did aerification or rolling. Good soil moisture at egg laying equaled high grub density later. "Application of organic fertilizers (composted cow manure or activated sewage sludge)" [Milorganite] "resulted in significant increases in grubs of green June beetle, in one of two years." Light applications of aluminum sulfate before beetle flights reduce total biomass of grubs by 55% or more.

GOLF COURSE MANAGEMENT: October 10, 1996 Dear Mr. Charlton, Sr. Mgr. of Pub.GCSAA: I wouldn't want all my letters to be complaints so here is a suggestion. Instead of those Toro articles and other industry-written or -solicited or -partially-paid-for, may I suggest you use the series of articles written by Shigo on tree health that appeared the last few months in Tree Care Industry magazine. Although most superintendents don't get too deeply involved in tree care they should be reading articles like these as such will help them better care for the trees on their golf courses. A very big investment at many golf courses.

By the way my attention was recently taken to the March issue and the article titled Troubles down the drain. It appears to me to be very similar to the Toro HydroJect article (an infomercial) I complained about in my last newsletter. Let us get these industry-written or -solicited or -partially-paid-for articles out of Golf Course Management
Yours for Better Turf, Douglas T. Hawes, Ph.D, .Member # 015297

Boy, did I get responses to the above. I think the caliber of articles you are going to see in Golf Course Management will improve, I hope so. More articles like those on pages 49 - 66 in the December issue.

YELLOW BLUESTEM: In Feb. 1986, TurfComms V.2, I.2, I suggested you might want to look at Yellow bluestem, *Andropogon ischaemum*, as a grass for unirrigated rough areas. Then in Dec. 1993, TurfComms V.7, I.6, I noted that David Kopec had found it a distant second to buffalograss in an Arizona trial for unirrigated turf. Well it has gone from a minor weed in the North Texas area to a very invasive pest in my feelings. It is dominanting poorly maintained lawns here in Plano. I also saw it for the first time on a Dallas area golf course in October. It appeared in well lite deep roughs adjacent to a stream that floods regularly. It is easiest to identify in October when it seeds heavily.

ON THE COURSE: The Life and Times of Stan Metsker, the 1996 Receipant of Scotts Tradition of Excellence Award. I received an autographed copy of On The Course in October, and promptly read all 111 pages. Stan paints an interesting picture of essentially 40 years experience in the golf course maintenance industry. Many superintendents burn out, have marriages stressed to the breaking point, drink too much or otherwise fail to cope with the ups and downs of the profession. Stan has done a great job of coping and additionally given much back to the industry. Although Stan is not overly well known outside of Colorado he is considered one of the best that Colorado has produced. Interestingly enough he started his first golf course maintenance work for a former superintendent also very well respected in that area, Ted Rupel once at Cherry Hills C.C.

I enjoyed the book very much as I to began working on golf courses about the same time so much of the equipment and methods of maintenance he discusses took me back to my younger days. I also enjoyed it because in the last 18 years I have come to meet and respect many of the fine superintendents he writes about.

If you wish to add his book to your library send $12 to Stan Metsker, 2301 Afton Way, Colorado Springs, CO 80909. That includes shipping.

END