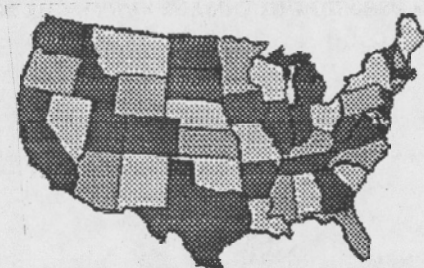


TurfComms

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

CRESTED WHEATGRASS (*Agropyron cristatum*): The late Dr. Jack Butler always thought crested wheatgrass showed potential for unirrigated turf. It looks like we now have a new cultivar 'RoadCrest' to give a try in the northern Great Plains and Rocky Mtns. See Golf Course Management, June, 2001 for more details.

LYME DISEASE: According to a small article in Science News, V.159, May 19, 2001, pg.319 the tiny deer ticks that spread the disease can easily be found in the woods surrounding golf courses in Rhode Island. U. of R. I. reseacher Elyes Zhioua reported finding them on the five golf courses in that State that he checked. Half the ticks found had the bacterium that causes the disease.

AIRPORTS and POLLUTION: Next time the City fathers suggest you car pool; suggest they close the airport if they are really concerned about air pollution. For more on this read "Airports and Cities: Can They Coexist?" In World-Watch July/Aug. 2001. For those of you on the leeward side of a large airport your grass may be dying because of air pollution.

INTERNATIONAL TURFGRASS RESEARCH CONFERENCE: This conference is held every fourth year somewhere in the world. This is the ninth. I've managed to

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make four of them. Paying one's own way makes one very selective. A golf course superintendent that planned to stay in one general area all his life would probably learn little of interest that he had not already been well exposed to at his local conferences. But, if you want a picture of the world of turf research than this is the conference for you. Most of the research reported here has already been published in local journals. There are only 300 plus members from 22 countries. The U.S. is one of the dominate countries, and as you might easily guess 95% of the members are from the highly developed nations of the world. The location of meetings would give a strong idea of where the majority of the members are from: Great Britain, Australia, Germany, France, Japan, U.S.(2x), and Canada(2x).

One idea thrown out as a possible new means of disease control is spraying on potassium silicate.

TURF IN CANADA: In British Columbia only 34% of the turf managers now consider *Poa annua* a weed. Kentucky bluegrass is not adapted to the eastern provinces of Canada. *Poa annua* on the other hand is the primary turf species even if they lose it during many winters.

Dr. James Beard talked on the Historical Turfgrass Scientific Advances. His comments on the importance of earthworms in early turf culture I wasn't fully aware of. Did you realize that rolling was a very important, if not the most important tool in turf maintenance 400 plus years ago because of the problem with earthworm casts. Also, earthworms were such a serious problem that high quality turf was restricted to sandy soils in those days because the earthworms don't do well in that environment, remember this last comment.

Dr. Bingru Huang of Rutgers talked on Current Trends in Turfgrass Research. She mentioned the following: **Cytokinin** soil injection for root survival of cool season grasses during heat stress. The potential of using lights to extend photosynthesis activity for grasses growing in the **shade**.

In the afternoon of the first day I chose the soil fertility over the genetics session. Most of these papers and some posters are published in the two volume journal of the proceedings. If you desire more information I will be able to obtain that for any of my customers.

Dr. Bell of OK talked on **sulfur** applications to bermudagrass turf on a silty clay loam and bentgrass on a sandy mix. The irrigation water had a pH of 8.4 because of a high bicarbonate content, 182 ppm. Two years of sulfur applications lowered the pH in the sandy mix but not the silty clay loam. One application reduced Dollarspot incidence but not on other occasions. In general sulfur applications had little effect and even rates as high as 66lb/A of granular product were safely applied to both bentgrass and bermudagrass. These were monthly applications April through October. (Ed. I urge caution in all but fall applications. *Poa annua* is very sensitive to winter and spring applications. It tends to die faster than normal when the first hot days of summer arrive.)

Differences from sulfur applications did not show up in soil or tissue nutrient analysis, root mass or turf quality.

William Dest of Univ. of Conn reported on research looking at eight different sands as potential sources of **potassium** other than that measured by normal soil tests. Normal soil tests measure the exchangeable potassium. This research indicated that non-exchangeable potassium was releasing fast enough in these eight sands to keep the creeping bentgrass reasonably well supplied with K. The research did find slight benefit to adding K in root weights compared to very low levels of K but no benefits under moisture stress.

Dr. B. Huang of Rutgers reported on the use of **calcium chloride** sprays to reduce **drought stress** in **tall fescue** and **Kentucky bluegrass**. It works! The tall fescue was more responsive to treatment than the Kentucky bluegrass. Tall fescue recovery after drought stress was better when it had been sprayed with calcium chloride during stress. Rate was 20 ml of 10 mM calcium chloride solution sprayed uniformly on the foliage of plants growing in 10 cm diameter tubes. (Ed. You would like that rate in simple English? Well, as best as I can calculate it must be a very dilute solution sprayed on so as to just wet the foliage.)

Dr. Z. Jiang of U. of R.I. talked about **nitrate reduction in Kentucky bluegrass**. Only one point got my attention on this subject and that was up to 20% of the plant's energy is involved in this activity.

Dr. Petrovic of Cornell U. reported that increasing CEC in sand mixes increased growth 17 %, improved nutrient recovery of N, K, P, and Mg in the clippings, and reduced potassium leaching. To obtain those increased values of CEC you would have to add more organic matter than current USGA recommendations allow.

Dr. J.N. McCrimmon of Louisiana State U. reported significant difference between cultivars of 14 bermudagrass cultivars for **tissue test** levels of P, K, N, Ca, Mg, and S; and that N and K treatments affected these concentrations. That is, significant differences when the cultivars were growing under the same conditions. Which means if you are going to use tissue testing you are going to have to be positive of what cultivar you are growing. Best not to believe the sod producer that supplied the cultivar as there have been too many cases of that information not being correct.

POSTER SESSION: These can be nice in that if the presenter is there you can have a one to one conversation. I first looked at one titled, Influence of Fungicides on Pythium Blight Development on *Poa trivialis* by L.E. Datnoff and J.L. Cisar. The authors felt some of the seed treatments they tried might be damaging the seed; also the fungicide CGA 489889 negatively affected early stand quality. For best control of Pythium in *Poa trivialis* overseedings use: 1) Heritage 50 and Aliete at seedling emergence, 2) Sudue Maxx at emergence, or Maxim & Apron XL as seed treatments.

Next poster was one was on **preemerges and nematicide** use on bermudagrass with a **spring nematode problem**. Their data clearly showed that the preemerge **Oxadiazon** (Ronstar) resulted in the best bermudagrass quality through the summer.

The third poster of interest was one on control of **torpedo grass** and **purple nutsedge**. Here I got to talk to the author. The experimental chemical CGA 362622 by Syngenta looks very promising for nutsedge control. You will need two applications probably 6 weeks apart. It is safe on bermudagrass and zoysia but not St. Augustine.

I have maintained an interest in **crumb rubber** as a soil conditioner. Two papers in the Tuesday morning session were on research on this material. The papers were the efforts of the Southern Illinois Univ. staff and their goal was to modify athletic fields on normal soils. They did their research on a silt loam soil and a silty clay loam soil. They created plots with slightly less than 6 inches of crumb rubber modified soil above a drainline. They used three different size particles 1/8, 1/4, and 3/8 inches.

The mixes they made up were on a weight basis. Crumb rubber has a particle density of 1.2 while soil is 2.65. Thus their 4 to 10 mix of rubber in soil is by volume approximately a 50:50 mix. They rotatilled the rubber crumbs into the soil but had to stop at the third tilling because any more than that and the rubber crumbs ended up floating on top of the heavier soil particles.

Their short term results shows that the 1/4 inch particle at 20% by weight gave the best clipping yields and turf quality. They are somewhat concerned about zinc the level of which doubled in the soil the second year. (ed. Zinc is released by decomposing rubber, and has been reported to reach toxic levels in at least one older research trial.)

They had one plot with high sodium and no explanation and in their unirrigated plots germination was slower in the modified plots. The hopeful advantage is a traffic resistant field which would be much softer to fall down on. However, much more research is needed. Once the turf is worn off such a mix it would not be very stable. Also crumb rubber sells for \$300 dollars/ton. So this is not a cheap fix for high school football fields. But we do need to find a use for all those old tires. One tire per person per year is accumulating in the U.S. now outside of landfills waiting for someone to find a use for them.

On the field trip the next day P. Groenevelt of the Guelph Turfgrass Institute showed similar research plots where they had concluded 20% **crumb rubber** by weight mixed with a loam soil was the optimum amount. They created five inches of modified soil above the loam. 40% by weight crumb rubber was too droughty.

The next talk of great interest to me was Dr. Bruce Clarke on "Best Management Practices for the Control of **Gray Leaf Spot**". Most of this has been published but I know those of you in the Southeastern 1/3 of the country would like to hear a condensed repeat. The disease requires high humidity and high temperatures (brown patch weather) and damp turf for 4 to 6 hours. Somewhat resistant **perennial ryegrass** strains are Coronado, Coyote, and Apache II. Slow release nitrogen sources reduce the amount of disease severity; and there is less disease at lower heights of cut. Clipping removal can help when the disease pressure is low. For control use Heritage at 0.4 oz/m on 21 day interval,

Cleary 3336 50WP at 6-8 oz./M, Fungo 50WP at 6-8 oz/M, or Spectro 90WDL at 8 oz./M. The last three use on 14 day intervals.

Bentgrass Dead Spot, Ophiosphaerella, (BDS) was next discussed by Kaminski of U. of Maryland. This disease appears to be common only to new putting greens. It does not appear in Maryland before June 9th. It grows very slowly but is active from June through October. The disease results in reddish brown spots 2 to 8 cm in size, often looking much like ball marks. The sclerotia on the leaves look like very small mice turds. L-93 is one of the more susceptible cultivars.

To grow BDS use lots of ammonium nitrate or urea on those new greens. The disease did not develop where ammonium sulfate or Country Club 16-4-8 was used. ConSyst at high rate gave control but it takes a month or more for recovery.

Tuesday afternoon's soil session started with a talk on Isoxaflutole by P.C. Bhowmik, now that is a mouthful. Of interest is this material has some potential of selectively controlling bentgrass in Kentucky bluegrass. It is also promising on nimmerwill (*Muhlenbergia*). Isoxaflutole is a new experimental being put out by Rhone-Poulenc.

Next of interest was a talk on the use of **Primo on Tifway**. This material does not affect thatch development. Its use does improve mowing quality by reducing scalping tendencies. (Ed. One of my courses had good luck with the John Deere 365 with carbide tip verticut reels on it verticutting every second week. Really took the grain out. They also use Primo.)

Postemergence Annual Bluegrass Control in Dormant Common Bermudagrass was the title of a talk of considerable interest and variability from North Carolina. The authors looked at and compared: Atrazine, Clethodim (a new material at several rates) and it mixed with diquat, diquat alone, Finale, Finale with Clethodim, Finale with Roundup, Roundup, Roundup with Clethodim and with diquat, Image, Metsulfuron methyl, and **Pronamide**.

Treatments were repeated for three years on Feb. 4th or 5th. The results varied considerable from year to year for many of the products with a significant year times treatment interaction. No explanation of this was given. They did conclude that "glufosinate" (Finale) "and clethodim + diquat tank mixes provided control of annual bluegrass in dormant common bermudagrass without injuring the turf."

The next talk was by Dr. Rossi of Cornell Univ. on controlling **annual bluegrass in perennial ryegrass fairways**. He looked at Prodiamine (Barricade), Ethofumesate (Prograss), Primo, and combinations of these materials. He was able to reduce over three years the *Poa annua* population 53% with Prodiamine followed by an Ethofumesate application. Three years of Prodiamine alone reduced *Poa* 40%. He did have injury on the perennial ryegrass from Ethofumesate during a dry year on what were unirrigated fairways. For those worried about gray leafspot this herbicides makes the ryegrass more susceptible.

During the second half of Tuesday afternoon I attended a session on Environmental Issues. The first talk I heard was by J.H. Howard; who talked about the decline of amphibians. He noted that salamanders are very sensitive at egg hatch to carbaryl (Sevin). Also that the insecticides imidacloprid (Merit), carbaryl, and chlorpyrifos (Durban) slow the development of tadpoles so that those who normally develop to maturity in shallow ponds which dry during the summer don't have good chances of reaching maturity. The imidacloprid and chlorpyrifos accumulate in the sediments which makes them a long range problem.

He noted that fungicides are generally harder on egg development than insecticides, and cause lots of deformities.

The second speaker was Dr. Amy Soli who did research on insect life in streams entering and leaving golf courses in Maryland. She found more genus and species in the water leaving the golf courses she examined that up stream.

ALL DAY FIELD TRIP: The most interesting thing I saw on the field trip was a new plastic material that Dupont has out which the Guelph Turfgrass Institute was going to put in the ground to do some research on. Apparently, though it is in tubes, it is suppose to act like Gortex and let only water vapor through it. Thus you can feed salty water into the tubes under the turf (any crop) and water vapor free of salts will be released to the soil beneath the crop. I would doubt this would have much use for turf but might in time allow watering some plants that are not salt tolerate when all you have is salty water. We could not obtain any information on deliver rates, but did get an address for more information.

Some of us went to a **sod farm** in the morning and most of us came away with the feeling they could not possibly make a profit on the stony land they were raising sod on unless they had a good market for the stone. Before every crop they plowed the land, disked it twice, harrowed it once to bring up the rocks, windrowed them, picked them up with a big, then a small rock picker, then rolled it with a cultipacker to push in the remaining small stones, fertilized, and then went over it with a Brillion seeder. Then sold the sod 10 to 24 months latter for 10 cents/sq.ft. Canadian.

As I promised no more 8 page newsletters I will stop at 6. The next six page issue the first of October should finish the Int. Turf Res. Conf. Notes.

I did a lot of interesting travel this summer and hopefully the next issue will have room for more of that.

About the time you get this I'll be headed back to Massachusetts for two weeks. Take Care.

Yours for Better Turf, Doug. H.