

Finding the perfect turfgrass

IT WAS vintage Jack. On a recent morning he walked into my office in the design wing of the 5th floor of Golden Bear Plaza and I could tell he had something on his mind.

He usually doesn't just drop in to say hello. He asked if I had heard anything about his recent comments on the Mini Verde greens at The Bears Club, his home course in Florida.

I said I hadn't, but I knew I was going to. He was not happy with the way they putted the day before. He said there was way too much grain, so much so that he was having trouble reading his putts.

Here is a man who hardly ever lets his caddy read putts for him. Jack's eye is always sharp. He can see a half percent contour like you and I see a big hill.

That got my attention. I had just praised the greens the previous week during an invitational charity tournament hosted annually by one of Jack's sons.

John Katterheinrich, the course superintendent, had them perfect. I should know after nine years of working with tournament greens. They were perfect not just for bermuda greens, but for any putting surface. That was before the cold snap.

The following weekend, our temperatures plunged from 32 degrees Celsius to almost 5 in less than 24 hours. That was a shock to any biological system, including the Mini Verde at The Bears Club.

Fortunately I saw them the day before Jack played and knew what he was talking about. The greens looked like

Plugged Lies from America

By **JON SCOTT**

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they had been wrung through a wine press.

I couldn't believe they were the same greens I had seen just days earlier. As the temperatures warmed quickly back to 30 in the days following the cold snap, the dazed and confused bermuda started to grow again - but not uniformly.

John held off on his weekly "tickling" as he calls his light verticutting

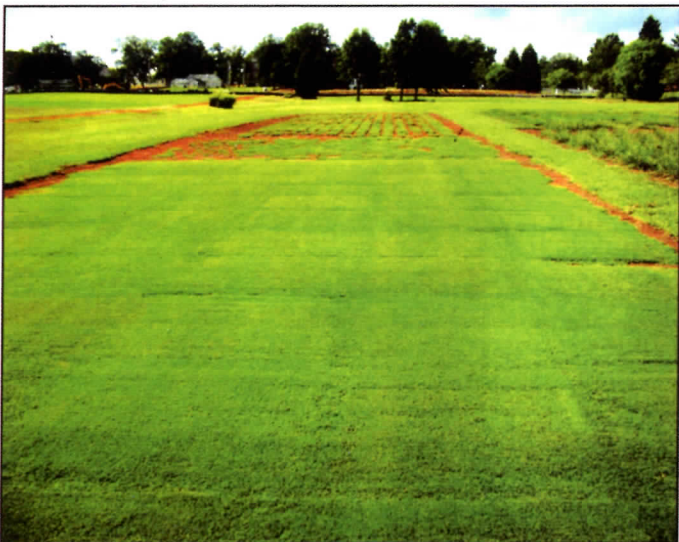
program to allow the grass to recover more quickly from the stress. The result was a putting surface that had some areas growing, others not, and with exaggerated mottling all through the green.

For a player of Jack's calibre reading greens, light and dark grass patterns are like a road map to the hole. This time the map was full of potholes. Mini Verde had just shown us that it is not the perfect bermuda.

There must be something better, but not today. Whether it is warm or cool season, what are we looking for? That question came up recently in a visit I paid to the University of Georgia turf research facilities. The most famous one is in Tifton, Georgia, where the "Tif" varieties of hybrid bermuda were developed.

Dr Wayne Hanna and his newly appointed successor, Dr Brian Schwartz, tirelessly carry on the tradition of Dr Glen Burton and the University of Georgia turf breeding program.

Dr Hanna developed Tifsport and Tifeagle during his tenure and has now recently released a new lawn and turf variety called Tifgrand, which may end up being the best of ▶



Any one of these grasses would look good on any Nicklaus designed golf course.



Nicklaus Design's Bill O'Leary head of it's Landscape Services Division discusses grasses with Dr Wayne Hanna and Dr Brian Schwartz at the Bear Club.

◀ them all. Dr Paul Raymer inherited the paspalum breeding program from Dr Ron Duncan several years ago at the Griffin Georgia research facility.

I was fortunate enough to have been invited to visit both for a personal tour and jumped at the chance. At each stop, I was shown how turf breeding starts from a few collected plants in the greenhouse. They then go through a meticulous selection and cross pollination or irradiation process to produce literally hundreds of new varieties. Then comes the tedious task of evaluation, culling, and re-evaluation; sometimes lasting years before a potential turf type is moved to a small production plot.

At these facilities, there are literally hundreds of these small plots scattered across hectares of open space, all being carefully tested and evaluated for desirable traits. But the question remains, what are these desirable traits? That is the ten thousand dollar question.

It is pretty safe to say that through more than 40 years of turf breeding, Dr Hanna knows what to look for in a bermuda grass. He knows it must first of all be attractive. You can't sell an ugly grass.

That usually equates to a nice, dark green color, a clean uniform growth habit, resistance to scalping when mowed, and tolerant of wear, disease, and drought.

It is also important to have nematode and mole cricket resistance, good cold tolerance, ability to withstand moderate shade and cloud cover, an ability to be overseeded, and a quick resumption of growth in the spring for a smooth transition.

Those are pretty tall orders individually, let alone as a group for one grass. Essentially, the grass just has to look good and stay that way for most of the year. If it does, all of the traits listed above will be in place. But what about sustainability; where does that come into the picture?

As I toured the various turf plots at both facilities, it was pretty easy to pick out the winners and the losers, at least for that day. Both Dr Hanna and Dr Raymer said that the plots change from day to day and that is why it is important to collect data daily and average the results.

Neither of these scientists is satisfied with the National Turf Evaluation Program, or NTEP as it is called, because they know how difficult it is to follow scientific protocol at so many different locations over the same length of time.

They concede that it is the best process we have to date for broad scale evaluation, but they reminded me that what looks good one place may not in another and it may be more related to the process than natural selection.

The only true way to evaluate a grass is first under very controlled scientific protocol and then in very aggressive field testing under real world conditions. It is the second part that is the hardest because of what they both call "the management factor".

A grass can be made or broken by management and it may differ so widely between test venues that there is no way to draw any conclusion other than the obvious. It either looks good or it doesn't. Thus, the University of Georgia program is big on scientific research before they release a grass to the marketplace for testing, and even then they remain an inte-

gral part of the process. Standing in the middle of the paspalum plots in Griffin with Dr Raymer, something struck me so solidly that I almost sat down. Here I was, in the middle of the best of the best of the best of the best, and still there were multiple tens of plots surrounding me.

At least half of them would have been suitable for any Nicklaus designed golf course the way they looked on that day. Yet, they were going through one more evaluation process before one, two, or perhaps three varieties would then be released for field testing.

How far is too far in this process? Are we looking at the right things when we anoint a grass? Have we considered sustainability?

The word "sustainable" has already become a cliché. We see it everywhere from automobiles to soap suds. How much carbon did we use, how much did we save, and what happens to it when we are done? Everyone wants to be able to say we are a good person, we conserve energy, and we help the environment.

The trouble is, I am not sure that this concept has been applied to turf – yet. What would happen if the best grass taken to market was not the prettiest, most dense, sexiest product on the planet? Would it sell? I think it depends on how it is marketed. Just like organic food with all the warts and blemishes attached, turf could be less green if it was more drought tolerant, less dense if it was more cold tolerant, and less sexy if it was cheaper to grow. We need to change the way we evaluate grasses and put more emphasis on the economy of growing them.



Dr Paul Raymer in his paspalum greenhouse.

As I looked over the dozens of grasses that made the final cut in Griffin, Georgia, I wondered which of them would need the least fertiliser, require the least water, resist the most disease, discourage the most pests, grow the slowest vertically, and keep its color the longest.

I want that grass on the golf courses and sports fields where I am writing the specifications.

I want to be able to tell a client that this grass will cost 50% less to grow than any other of the same type. I want to brag that this grass will conserve energy, keep chemicals out of the environment, save water for drinking, and require ▶



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The middle stages of paspalum evaluation trials.



Tifgrand at the Tifton Research Centre, Tifton, Georgia.

less time to maintain leaving more time for enjoyment. Do you think this grass would sell? In a heartbeat. Both Dr Hanna and Dr Raymer are on the right track. Dr Schwartz is currently evaluating bermuda grasses that will do many of the things described above. He will carry these varieties into the next decade and I am certain that we will soon have more choices of quality hybrid bermuda that are more sustainable than what we have today.

Dr Raymer is developing a strain of paspalum that will tolerate almost double the amount of salt in its environment than the leading varieties. As long as we remember to take care of the soil, this is a huge advantage for high salt environments as it will allow more time between flushing, either from rainfall or irrigation. It will take fewer soil amendments to keep the turf functioning, and allow more reliance on marginal water supplies. He maintains that the grass can be watered with seawater, but we haven't yet found a soil that can support that.

Perhaps we will have to revert to hydroponics to grow grass in the future. In the present, we stay away from seawater, but are thankful we will have a grass that can tolerate those levels of salinity for short periods. Yes, they are on the right track, but we can help.

Sadly, most turf research today is done by private enterprise. In free market capitalism, that is supposed to be a good thing. I think in this case we have let the producers define the market instead of the other way around.

In cool season or warm the emphasis is on appearance first, function second. I would like to see that reversed. I would like to see the market tell the producers what they

want. That is probably more easily done in the public arena than the private one. A lot of private arenas spend more on marketing than they do research. Marketing defines the market, and the product then follows. Some of our most popular grasses have been presented that way.

By the time you find out that the grass does not meet your needs and expectations, it is too late. You are committed. Wouldn't it be great if you could sit down with the turf breeder and talk about what you are looking for and why? Explain how your budget has

been cut and cut until there is nothing left but the empty plate on the table, and that the plate comes next? Ask if there is any way to develop a grass that you could grow at half the budget?

Well, rest assured you were well represented during my discussions. And we aren't stopping there. We plan to continue this relationship by having periodic meetings and dialogue, and I genuinely feel that we will be an integral part of the process.

We have Tifgrand on a couple of test plots at The Bears Club and will soon be planting some of Dr Raymer's paspalum grasses on Jack's personal putting green at "The Yard".

We will make the connection between our Nicklaus course superintendents and the University breeding program to broaden the exchange of information. And, if the result is a better turfgrass for us and for our clients than what we have now, we will specify that grass on the courses we design.

Perhaps right now there is a better Mini Verde type greens bermuda in one of the hundreds of selections resting on trays in the greenhouse. Perhaps it has already made the cut and sits in the middle of the 50 or so small plots just outside.

If we are lucky, really lucky, it might just be one of the 25 that survived the second culling just waiting for discovery, shortening the time to production by several years. We won't know until we look for it. When we find it, we start all over again because sure as you read this, there will always be room for one more. ●

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