

Sowing the seeds for the future

The Sports Turf Research Institute held its first grass trials in 1929, when the modern golf industry was in its infancy. Whilst it was recognised that greenkeepers needed to know which grasses to sow and how they would perform, it's safe to say that no-one could have predicted the demands placed on today's turfgrass mixtures.

Today, with courses played and mowed all-year round, the popular turfgrass mixtures are selected to withstand close mowing and trampling. Amenity grass seed breeders supply a wide range of mixtures designed to perform best under the specific conditions of greens, tees and fairways. Greenkeepers are well aware of what is on offer.

Of perhaps greater concern is the future of turfgrass mixtures for golf courses and the implications for greenkeepers, turfgrass breeders and research bodies alike.

While the general conditions are acknowledged, there appears to be a marked difference in emphasis between the commercial plant breeders and primary seed suppliers and the research bodies.

As far as breeders and wholesalers are concerned, the major consideration is providing a grass playing surface which can withstand close mowing and wear and tear and have high recuperative potential.

Research orientated bodies such as the STRI and The Institute of Grassland and Environmental Research at Aberystwyth acknowledge the need for grasses which withstand close mowing and wear and tear. But, they are more concerned with shifting to and creating new turfgrasses which will perform well in the changing climatic conditions – increasing drought and corresponding water restrictions – and ecological considerations such as the spraying of herbicides.

Dr Andy Newell, Head of Turfgrass Biology and Environment at the STRI, says, "It has to be a major consideration now to produce grasses which will perform well in the future. Drought will become an even bigger problem than it is now. There have already been problems in recent years. Climate change is a problem

which won't go away and the problems of drought will get worse.

"At the highest level, the highest standards of presentation are expected and demanded. Television companies want to see green playing surfaces rather than parched, brown and dead looking grass areas. It isn't just the premier courses which are concerned, today's greenkeeper can be responsible for an investment worth anywhere between £2-20m and has to make decisions which can produce something good or gradually wreck a course.

"In respect of some problems, grass types we use now may not be the best type for the future. For example, bent grasses require more water than fescues to produce a good playing surface. If we can't use water, we may well have to reverse the current trend towards bents and go back to fescues.

"Maintenance is also important. Mowing, in particular, will affect the way grasses will perform. Slower growing grasses, which use less water, naturally require less mowing but what is done needs to be done well. If grass is not cut neatly, with sharp, regularly lapped blades, a larger surface area is wounded and this leads both to greater water loss and likelihood of disease. It is also, quite simply, a case of having the right kind of mower to produce the kind of playing surfaces golfers demand."

At the same time as shifting emphasis over to existing grasses which require less water, research is also being done into Genetically Modified Organisms. Through gene transfer, grasses which require less water and spraying with herbicides can be created.

As Dr Danny Thorogood, of The Institute of Grassland and Environmental Research at Aberystwyth, explains, "It is quite easy to manipulate most grasses through gene transfer. What we have to do is identify and isolate the useful gene. In some cases, the characteristics which we want to trans-

fer – dwarfism for grasses which require less mowing or resistance to disease for grasses which need little or no spraying with herbicides – are determined by a number of genes, which makes it a bit more difficult."

So, why aren't genetically modified grasses available to the greenkeeper?

Danny explains, "It's the implications for the environment which are the chief problem with Genetically Modified Organisms. What happens when GMOs get into the food chain, for example. The potential hazards as well as benefits of each gene have to be assessed individually before release in a commercial variety. As far as golf courses are concerned, the problems are very specific.

"Our research indicates that grass pollen can travel several miles and it's all very well breeding grasses which are resistant to disease and herbicide tolerant for the fairways but what about when the various weeds growing in the rough are pollinated? No greenkeeper wants the problem of herbicide resistant weeds growing on the fairway."

Realistically, then, it's the case that genetically modified grasses created through gene transfer may be easy to create but are a long way off being commercially available to greenkeepers.

"But," Danny continues, "there is still a vast array of naturally occurring variation for characteristics in grasses growing in the wild. Plant breeders such as myself collect this wild plant material. We then hybridise it in complex crossing programmes to combine the useful traits such as drought tolerance, disease resistance, short dense growth and wear tolerance into a single variety."

How, then, does the concerned greenkeeper keep abreast of climatic and environmental considerations; what's happening in turfgrass technology and its implications?

The STRI held its first Cutting

Edge three day Golf Training Course for Head Greenkeepers/ Course Managers last month with the express purpose of putting delegates in the picture with regard to developments in turfgrass technology and implications for the future of golf courses.

As Dr Newell explains, "Good greenkeepers have always been well aware of the need to know what's available and what future developments are likely to influence their business. So although the response to the first Cutting Edge was good – with 16 Head Greenkeepers coming along – it was hardly surprising.

"But educating greenkeepers is only part of the whole picture. What needs to happen a lot more is for them to engage in real two-way dialogue with the technical people. Because, when you consider that it takes up to 15 years to create a new grass, for the seed breeders to respond to greenkeepers demands in general, as well as those caused by climatic, environmental and financial considerations they need to know what's required for the future today.

"To be sure, the enlightened seed breeders do take steps to educate their salesmen to understand greenkeepers' current needs and to encourage feedback when it comes to anticipating requirements. But there is still room for far greater exchange of information between greenkeepers and breeders. It's only then that the breeders can supply what the people at the cutting edge really want."

So, it seems that as far as the research institutes are concerned, the challenge is to adapt and create grasses to suit the inevitable demands made on them by the golf courses, brought about by a changing climate and growing concern over the environment. At the same time, it's a question of encouraging a climate of debate between greenkeepers, breeders and the research bodies.

Johnsons Seeds see things differently.

"When we have our regular meetings with the STRI we invariably end up agreeing that the only difference in our perspectives is one of emphasis," said Geoff Taylor, of Johnsons.

As far as the potential benefits of GMOs are concerned Geoff is





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sceptical. He argues that despite the potential of gene technology the range of options available to plant breeders are still bound by the fundamental precepts of plant ecology.

"If grasses are modified by inserting appropriate genes, and traits such as drought tolerance, are fully expressed how will such an organism survive when it is faced with significant deficits or moisture/nutrients but is constantly subjected to the wear and tear and ultra close mowing expected by today's golfers?"

"Grasses which are more efficient at extracting and utilising nutrients than their contemporaries – especially nitrogen – are already undergoing trials. But such advances, despite their benefits are dwarfed by the climatic changes which are likely to be much greater than the capacity of GMOs to produce the higher levels of performance demanded."

So, where does that leave the greenkeeper needing to make commercial purchasing decisions but with an eye to the long-term health and performance of the course's playing surfaces?

As far as Drs Thorogood and Newell are concerned, the crux of the matter is that, in the words of Dr. Thorogood, "Farsighted companies with direct involvement with the greenkeeper on the one hand and the research scientists and breeders on the other, are in the ideal position to bring together the geneticists and greenkeepers to discuss what is possible and what is needed in the grass seed mixtures for the millennium."

Dr Newell's main concern is that greenkeepers beware of cheap grasses because they can become very expensive.

"Greenkeepers may save money on seed but pay out for extra maintenance, extra watering and extra fertiliser. If grass has to be replaced due to poor performance, this could be extremely expensive."

From Geoff Taylor's perspective, the crucial thing is that the products of plant breeders need to be integrated effectively with the technological development of mowers and other machines, along with chemicals.

"A holistic approach is the only one likely to succeed where superior management skills can maximise the full range of resources available."

Drawing breath before BTME 98

Yet another year has flown by with the New Year only three weeks away and Harrogate only six weeks away. Nineteen ninety seven started with the Learning Experience, commencing with the National Education Conference and the welcome return of two workshops. Workshop 1 on Golf Course Design, Construction and Maintenance was extremely popular again, so much so that we had to stop taking applications in early December. We, therefore decided to this workshop around the Regions, which has proved to be a great success. This workshop will be held at Harrogate again in January and, if you are quick, there are still a few places left. Workshop 2, Surveying and Levelling was, again, very successful and will be running in January. **New for 1998 will be a workshop on Irrigation and its popularity is such that it is completely full.** The National Education Conference will again be held in the Majestic Hotel, with speakers from all parts of the industry sure to offer something for everyone. The Seminar Programme returns to the Royal Hall for 1998. The Seminar Programme begins at 10am with a seminar presented by the Institute of Agricultural Engineers.

Unfortunately, Mr Jaime Ortiz Patino will not be able to attend on Wednesday 21 January, however he will be speaking on Thursday 22 January at 1 pm. This seminar is a must for anyone wanting to hear how Valderrama was prepared for the 1997 Ryder Cup. All three workshops, the National Education Conference and Seminars will, once again, attract Master Greenkeeper credits and BASIS Continuing Professional Development points. Please ask for details at the Conference Office or at Seminar Registration in Hall G.

Thanks to the contributors to the BIGGA Education and Development Fund, including those companies listed at the front of this magazine, we have been able to continue to provide a range of courses around the Regions at very low prices. This year has seen courses on Essential Management Skills, Recruitment and Selection, Health and Safety and Leadership, allowing more than 180 greenkeepers to gain impor-



Education Update

BY KEN RICHARDSON

tant knowledge which they can use in the future to provide better managed, efficient, cost effective, safe golf courses.

TORO sponsored both the Student of the Year and the Excellence in Greenkeeping Award for the first time in 1997. This enabled us to hold a joint final in October, when Steven Nixon from Wortley Golf Club and Ian McMillan from Hankley Common Golf Club were selected as the winners. Congratulations to them both. Ian was doubly successful as Hankley Common also won the BIGGA Golf Environment Competition, in association with Amazon Ground Care and Rhône Poulenc Amenity, with Hankley winning £5000 to add to the prize of a Toro triple greens mower and Ian's trip to the USA. Full details of all 1998 competition will be available at BTME.

The next field guide, 'Grass Identification' is being distributed and will be available at BTME. Further field guides on 'Trees and Shrubs', 'Control of Mammals' and 'Basic Machinery Maintenance' will become available during 1998.

New for 1998 will be the BIGGA Refund of Education Fees Scheme. Watch out for full details of how and when to apply in the January edition of *Greenkeeper International* and on the BIGGA stand at BTME.

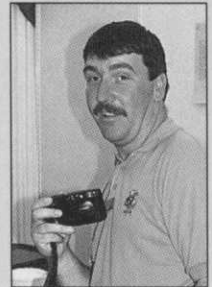
This year has been very hectic for Sami and me. We get immense satisfaction from seeing greenkeepers improve their knowledge, skills and confidence and we see education and training as the way to improve the status of greenkeepers and the greenkeeping profession. Remember, training courses, competitions and other training opportunities are staged for your benefit. Why not make a New Year's resolution to become more involved, attend courses and improve your status.

Sami and I hope that you all have a very happy Christmas and an educational New Year.

ASSISTANT GREENKEEPER

Profile

Usually the spotlight falls on the Course Manager or Head Greenkeeper at a Club. Now it is the turn of those whose work often goes unheralded to star...



Name: **Steven Evans**
Club: **St Enedoc GC**
Position: **Deputy Head Greenkeeper**
Age: **37(ish)**

1. How long have you been a greenkeeper?
Eighteen years

2. What education are you currently undertaking?
D32/D33 Just completed.

3. Which one task do you most enjoy doing?
Retvetting Bunkers

4. Which one task do you most dislike doing?
Pesticide/Fungicide Spraying

5. What job other than greenkeeping might you have ended up doing?
Collier

6. Who has been the biggest influence on your career?
Peter Gillard, Greenkeeping Lecturer at Pencoed College In Wales

7. What would you do to improve the life of a greenkeeper?
Encourage educational opportunities for all greenkeepers

8. What are your hobbies?
Playing pool, cricket and golf

9. What do you get out of BIGGA?
Belonging to a professional organisation, valued friendships on a personal and professional level.

10. What do you hope to be doing in 10 years time?
Greenkeeping and failing that maybe a professional photographer for BIGGA!