

NATIONAL SURVEY OF GOLF GREENS

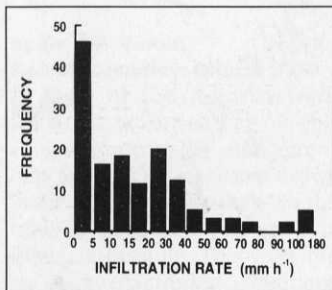


Fig. 2: Number of greens with water infiltration values within specific ranges

top dressing with sandy materials meant that the surface layer (10-90mm) was generally lighter, with 65% of greens having a sand or loamy sand texture and only 6% occurring in the sandy clay loam and clay loam categories. Inevitably the highest sand contents were found on the links and heathland courses, along with newer courses where sand dominated rootzones had been used.

Drainage rates were measured by ponding water in two concentric rings and measuring the rate at which water entered the green's surface. The range of infiltration rate values for all the greens summarised in Figure 2 and some important points are evident. The highest value of 171mm/hr was recorded on a long established heathland course and in general the questionnaire completed by greenkeepers indicated that drainage problems were minimal on those greens with 285% sand in the rootzone but increased as the texture became heavier.

Infiltration rates also decreased with the age of the green and averaged a very respectable 22mm/hr for greens up to five years old but fell to an average of 10mm/hr on greens greater than ten years old. This is likely to be a function of increased compaction and greater blockage of the pore space by organic matter, but changes in construction practices over time could also be important as many of the newer greens have been built with specially prepared rootzone mixes.

Rainfall intensities of over 20mm/hr for anything but a few minutes are very rare but ideally infiltration rate values should be >20mm/hr if the green is to cope with very high intensities of rain, for example during a summer thunderstorm. However a minimum drainage rate of 10mm/hr is a more realistic target for most golf greens and provided that they do not have major hollows

that hold water, any surface ponding will normally be short lived. In the study 43% of greens had infiltration rates <10mm/hr and almost one third had values less than 5mm/hr. This situation is far from ideal. It must be remembered however that half of the greens were deliberately selected as being amongst the worst on the course and poor drainage would have been one of the factors influencing greenkeepers' nominations of greens to study. Indeed infiltration rates were significantly higher on those greens classified as "good" by the greenkeeper, averaging 14mm/hr compared to 8mm/hr on greens classified as "poor".

The other noteworthy physical characteristic is the air-filled porosity. In the laboratory we measured air-filled porosity at two levels of suction: values measured at a water potential of -4kPa are probably the most useful as this gives an indication of the amount of soil air present through much of the winter period. Using measurements from all the greens in the study, the air-filled porosity of the 10-90mm depth averaged 6.6% and the corresponding figure for the 100-180mm depth was 6.9%. This is below the figure of 10% air-filled pore space which is sometimes quoted as being a desirable minimum value. Indeed 41% of greens had values <5%. Again it must be remembered that the sample of greens was not fully representative as greenkeepers deliberately selected half the greens as being poorer ones from their course, nevertheless when taken in conjunction with the infiltration figures it does suggest that many greens have far from desirable soil physical characteristics.

SOIL: CHEMICAL PROPERTIES

Greenkeepers were asked to fill in a questionnaire on maintenance and this included information of the fertiliser that they had put on in the preceding twelve months. Most greens received between 75-225 kg/ha of nitrogen, which would seem satisfactory in view of the range of soils at different sites. There were however some cases where we calculated the rate to be over 300 kg/ha which is certainly on the high side even for a sand based green. No phosphate was added on 61% of greens and on 56% of greens no more than 40 kg/ha of potassium (as K₂O) was applied. Phosphate levels

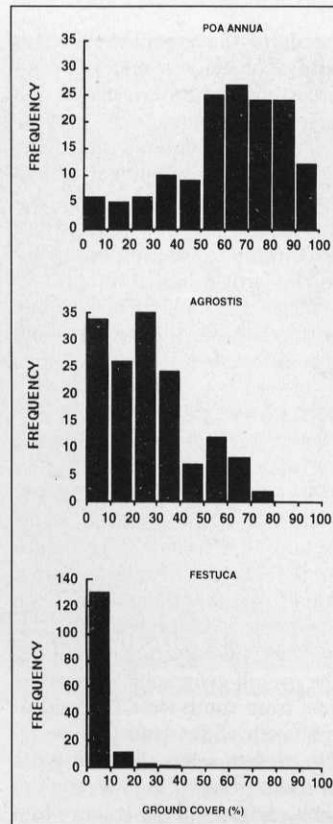


Fig. 3: Species composition of the greens examined, showing the number of greens with measured amounts of annual meadow grass (*Poa annua*), bent (*Agrostis*) and fescue (*Festuca*)

were very variable and there was no relationship between the amount of phosphate applied and measured values in the soil. This almost certainly reflects unnecessarily high levels of phosphate nutrition in the past and the lack of mobility of this element in the soil. In spite of the fact that no phosphate was applied on 61% of the greens, over half the greens had P₂O₅ levels >30 mg/l.

There was a significant, albeit relatively weak, relationship between the amount of potassium applied and levels recorded in the soil. For the main rooting depth (10-90mm) almost one third of the greens had potassium levels classified as very low and for the 100-180mm depth half the greens had nutrient levels falling into this category.

Potassium is relatively mobile within the soil and normally between 60-150 kg/ha of K₂O should be added on an annual basis, depending mainly on the texture of the rootzone. In the light of the figures that were recorded it would appear that potassium is being under applied on a fairly high percentage of greens.

GRASSES

Averaged over the 148 greens in the study, annual meadow-grass was by far the dominant grass type with three quarters of greens having an annual meadow-grass content exceeding 50% (Figure 3). Bent was the most common of the desirable grass species but fescue was recorded on less than half the greens in the study, with the highest fescue contents being found on relatively new greens less than five years old and on links courses. There were significant relationships between species composition of the greens and the soil physical properties, for example annual meadow-grass increased as the clay content and moisture retention of the green became higher. Fescues on the other hand were more common where sand content was greater and where higher levels of air-filled pore space were recorded.

SOME CLOSING THOUGHTS

The survey has highlighted the fact that greens developed on all but the sandiest of natural soils will not have the soil physical properties generally thought necessary for ideal conditions of growth. Heavier soils are inevitably more water retentive and this tends to give poorer growing conditions which, along with a variety of other factors, will encourage annual meadow-grass invasion into the sward. It is a credit therefore to the greenkeeping staff at the courses visited that they generally managed to produce excellent putting surfaces in spite of the unfavourable soil conditions that many were having to work with.

MY NEW YEAR'S RESOLUTION IS:



"To appear in Greenkeeper International more often in '96 than Richard Barker"

- Tim Allard, Charnwood Forest GC

Miracle Professional GREENKEEPER OF THE YEAR

which Mike has developed and the high degree of record keeping which he feels went a long way to getting him the award.

"The management want accountability so they are making me learn new skills on the management side.

The club has a central administration department which comes up with a format for all the record keeping which is used throughout the club.

"We can account for every hour which is spent on the golf course. At first that's a little frightening - a bit like a time and motion study but it's not like that at all. There are a lot of benefits. For example this year I argued to get a new bunker raker but the club wasn't too keen. Through running the budget management we came up with a labour cost of 1114 hours of bunker raking by hand and that it accounted for 20% of our time. Once they heard that they realised the importance of it and we got our new bunker raker.

"Initially I felt that the time filling in forms would be better spent out on the course. I was a hands on person, 'let's get out there' lead by example type but I've come to appreciate the benefits of good management.

"We have a weekly staff meeting which is very open and if it's felt I'm not doing something right they tell me. That goes right through the club, everyone is on first name terms, even the Managing Director, and it's a lovely atmosphere to work in.

"We're all cogs in a wheel and there is no 'them and us' attitude which a lot of greenkeepers at big clubs suffer from."

If Mike's handicap had continued to fall he might have been rivalling Colin Montgomerie for the Golfer of the Year and not the Greenkeeper of the Year title.

"I started off at Macclesfield Golf Club but I was initially more concerned with trying to develop my golf game as it was my ambition to make it as a professional but it was not to be.

"I did get the opportunity to work on the course and I got more into the greenkeeping side and my golf fell away."

From Macclesfield Mike went



At the awards presentation, from left: Pat Murphy, Richard Minton, Chris Brook, Ed McCabe, James Devlin, Don Wilson, Mike Goodhind and Roger Mossop

as a trainee to Prestbury rising to First Assistant and worked under one of the old school of greenkeepers John Leonard. "From a practical side I couldn't have had a better tutor."

"I left there at 21 and went to Heaton Moors in Manchester as Head Greenkeeper. It was an ideal place to go because it was a step up for me and a place where I could learn from my mistakes."

In 1984 Mike went to Cavendish Golf Club in Buxton Derbyshire as Course Manager where he spent nine extremely enjoyable years.

"It was a very high golf course and the first winter I was there I didn't see a blade of grass from the first week in January to the last week in February."

That brought in the course's other use, that of ski centre.

"We had three ski tows on the course and had a run known as the Cresta Run which is world famous in that part of Derbyshire. It ran over three fairways and finished in a stream. I developed my skiing skills while at Cavendish and it was a super club to work for, extremely friendly.

"It was a real wrench to leave and I had to give it a great deal of thought. I'd built new sheds, new workshop and all the lads had uniforms. I'd built it all up and I could take pride in what we'd achieved. Everyone knew what they were doing and it almost took care of itself so really if you feel like that it's time for a new challenge."

The Tytherington Club was back in Macclesfield and Mike could see how the club was developing with the WPGET and professional Tour events.

"A major influence was the fact that it held major events and it was another step up the ladder."

The Ladies' English Open was

held on the course last year and it was another big step for Mike.

"It was a real eye opener with the television cameras there and the overall attention to detail. Fortunately I was given quite a bit of warning about what the Tour wanted and had quite a bit of input myself."

The club has an excellent internal training programme and Mike has already completed his D32 and D33.

"One thing which does appeal to me is the HNC course at Reaseheath College and if the club agrees I'd like to do it because it can be done on a distance learning basis..

"The way the industry is going nobody can lie still. The number of students taking the HND courses mean that all it needs is for them to get a bit of practical experience and I feel in ten year's time, probably less, they will be landing some pretty good jobs. You need the ability to think ahead and keep developing."

It is that sort of attitude which encouraged the judges Pat Murphy and Richard Minton who also visited the finalists courses, Roger Mossop and Neil Thomas to award him the prize.

"It is a prestigious award and I'm very proud for Karen and our four children Leah (7), Holly (6), Grace (3) and Callum (2)," said Mike, whose other claim to sporting fame is that he holds the record for the Cheshire Cricket League with the high score of 177 not out in a limited 40 overs game for Bollington.

"As for the future I've got work to do at Tytherington. It's still got a long way to go to fulfil its great potential and I want to be a part of that."

Roger Mossop, Business Manager for Miracle Professional, praised each of the five finalists and said that they were the closest matched in the history of the

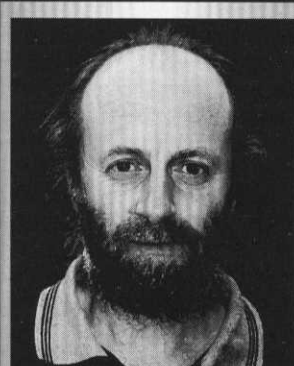
competition.

"Mike's course was excellent and his level of management and record keeping was second to none," said Roger as he made the presentation. "The staff facilities and the presentation of the staff pointed to an excellent team spirit while I was impressed by the fact that Mike seem to be well read on greenkeeping matters."

Roger also highlighted the plus points of each of the other finalists. Chris Brook's course was immaculate and he had the ability to take advice but ultimately make his own decision; Don Wilson's course was in excellent condition and he interviewed very well; Ed McCabe's sheds and record keeping were first class while James Devlin's greens were said to be the best of any seen in the competition, a feat achieved on a restricted budget.

The competition was given a further boost when it was agreed that Miracle Professional is to continue support of the competition in 1996.

MY NEW YEAR'S RESOLUTION IS:



"To satisfy all 600 members of the club for just one day in the year"

- Dave Wood, Littlehampton GC

Around the Green

Keeping in touch with news and comment from the regions

South Wales

A Happy new year to you all.

Huw Morgan, Course Manager at the Wilderness Golf Club in Kent kick started a busy month of lectures with an evening lecture at Pencoed College entitled "From the Wilderness to the Wilderness". You know you can always count of Huw to be controversial and as, true to form, he was.

Huw's talk was based on the main differences between managing a golf course in the south of England compared to that of south Wales. Huw's talk provoked much feedback and audience participation and left us with much food for thought.

The following Wednesday the newly-developed Celtic Manor golf and country club hosted a jointly organised STRI/WGU seminar entitled "On course in the 21st century". The seminar which encouraged an audience of well over 60 covered many topics including an in depth assessment of what the STRI is, does and is all about presented by the STRI's new Executive Director, Dr Mike Canaway. Other presentations were from Kate York - Diseases; Dr Bob Taylor - Ecology and our STRI regional Advisory Agronomist - Gareth Goddard. An informative day, coupled with a chance to see the Celtic Manor complex in all its glory.

The following day at the Parc Golf Club, Newport, Liquid Sod held a greenkeeper invitation day. The day consisted of a series of morning presentations followed by an afternoon round of golf.

The morning presentation made by the company's proprietor Jesse Johnson, an American agronomist, who stole the limelight with many interesting views and claims including controlling Take All Patch and an in depth look into the turf disease Pythium.

The BIGGA South West and South Wales Annual Seminar held recently at

Cannington College again was a resounding success with some 100 paying guests and around 40 students in attendance. A sincere thank you to the sponsors Barenbrug and in particular the ever smiling John Bradley, Area Manager of Barenbrug UK Ltd.

The region's policy at our seminar is to have two students make a 20-30 minute presentation and this year's students John Wilson and Mark Anderson were of the highest quality. Well done lads!

Other presentations came from Gerard van t'Klooster - an explanation of plant breeding and new cultivar testing. Mr John Linneker - "Golf Club Management" in his opinion. Dr Mike Canaway - a look at the continuing research work of the Sports Turf Research Institute. Dr Anne Maria Brennan, the EGU's practising Ecologist on: "On course conservation, golf and nature in partnership" and last but definitely not least Mr George Shiels - "The presentation of a golf course from an agronomists point of view".

An excellent day, thoroughly educational, and all for £10. What more could you ask for? Perhaps a better attendance from this side of the bridge!

Our sincere thanks to Cannington College for the use of their facilities, to Barenbrug for their support and sponsorship and to Gordon and Marion Child for their organisation of this seminar. Possibly the best yet.

You should have received a list of the winter evening lectures. If you haven't then contact me, but they are Pencoed College on Wednesday evenings commencing at 7pm. January 17 - Gordon Jaaback "Dispelling the myths in golf course drainage and overcoming the problems"; February 14 - John Moseley of the National Rivers Authority "Quality control, abstraction and record keeping"; March 13 - Bob Scott of British Seed Houses "Golf course renovation".

It's good to see so many new members not only joining the section but participating in events. Let's hope we see a lot more of you throughout 1996.

I hope Tony Bull is back on his feet, Tony of the Clyne Golf Club recently underwent surgery to remove two toes.

Fixture cards again sponsored by TACIT will be with you shortly.

Don't forget the BTME 22-26 January at Harrogate. See you there!
Peter Lacey

South West

Let me take this opportunity to wish all section members a happy, if not belated, New Year. A warm welcome is also extended to several new members who have joined the section recently, among them Steven Blackmore from Taunton Vale Golf Club, Robert Jordan from Puckrup Hall Hotel & Golf Club and Kenneth Abraham from Isle of Wedmore Golf Club. The section looks forward to your support at forthcoming section events, the first being at Stinchcombe Hill Golf Club on Wednesday February 28 where it is intended to

have a guest speaker as well as playing the usual golf.

All members of the section will once again be able to keep track of the year's events thanks to the offer from T.H. White to produce a fixture card for 1996. Assistance in every respect is always appreciated from trade members and thanks are once again given to Pat Smith and T.H. White for their continued support.

Throughout the winter months there is more opportunity at section level for education with, once again, what will be a full coach from the South West going to the BTME Exhibition at Harrogate on January 23.

A management course organised by Headquarters at a greatly subsidised price of £50 per head is being held at Thornbury Golf Centre on February 12 and 13. Frank Newbury is the instructor for a course entitled "Essentials for Busy Supervisors". The cost includes meals and one night's accommodation at Thornbury. To secure a place please contact Ken Richardson at Headquarters on 01347 838581.

It is the intention to run a Pesticide training course (PA1) in the near future with instruction being given by Noel Stevens formerly a senior lecturer from the Gloucester College of Agriculture. A venue and date are yet to be finalised but if interested in being included please contact me on 0117 9793127. It is worthwhile noting that a change in legislation now means that anybody wishing to use a knapsack sprayer now needs qualification to PA6 standard as it is no longer covered by the PA2 certificate.

Continuing with education, a First Aid course held on Tuesday November 21 at Filton Golf Club proved informative for those who attended. Don't forget for those who have already done the course that the certificate is valid for three years only before a refresher course needs to be taken.

Finally I close by wishing you successful greenkeeping and good golf for the forthcoming year.

Kevin M. Green

North West

An evening lecture and AGM took place at West Derby Golf Club recently. Clive Heginbotham of Miracle Professional gave a very interesting talk on the control of weeds in ponds and waterways. Clive stressed the need to consult the National Rivers Authority before using any products to control aquatic weeds but better still to contact himself as he could advise on the best products and who to contact. I would like to thank Clive for giving us his time and expert advice.

The AGM followed and once again we had a poor attendance with only 14 members. New Chairman Chris Sheehan presented his predecessor with an engraved tankard recording his two years as chairman.

The North West committee is Chairman, Chris Sheehan; Secretary, Bert Cross; Treasurer, Brian Moss; commit-

tee Howard McAddey, Stephen Oultram, Bill Merritt, Alec Davies and Mike Davie.

A seminar at Mere G&CC organised by SISIS in conjunction with Rhone Poulenc was held on the evening of November 28. Head Greenkeepers and Green's Chairmen were invited to listen to three speakers, Martyn Jones, Myrscough, Dennis Mortram, Reaseheath and Mike Sheehan, Course Manager at Mere.

Mike Sheehan welcomed everybody and spoke about the problems on the golf course during the winter months. Points raised were: Use of winter greens, directing golfers away from worn areas which require renovation and generally keeping the members playing golf while essential work is carried out.

Martyn Jones, who came down strongly on the side of the greenkeeper, enlightened the audience of 112 on the problems greenkeepers have to face on a daily basis. Winter work he claims starts at the beginning of April and continues until the following March. In other words, all work carried out on the course during the year is done in order to create the best suitable conditions to allow members to play golf 365 days a year.

Dennis Mortram covered the various forms of aeration on golf courses, stressing how essential hollowtining, slitting and vertidrainage is to allow oxygen into the root-zone allowing deeper rooting and better drainage.

The evening was rounded up with a problem solving session with the panel of speakers. To complete the evening a hot pot supper and free raffle were provided. Many thanks to SISIS and Rhone Poulenc for organising the seminar with was well attended by both greenkeepers and greens chairmen.

I must mention that the N/W section have our own seminar at Mere on March 26 and I would like as many greenkeepers, greens chairmen and secretaries to attend. The theme of the seminar is "Forward Together", and is of interest to everybody in the business of golf.

The fixture lists for 1996 N/W section events are almost completed and will be posted to you as soon as possible. It just remains for me to wish you all a happy and prosperous new year and I hope to see you all at Harrogate.
Bert Cross

Scottish Region - North

The inaugural section dinner/dance in Aberdeen was a great success with around 60 people attending and a good time was had by all. A special vote of thanks must go to Hughie McLatchie and Dougal Duguid for organising this event which we hope will become an annual affair.

Our latest new member is one Mr Rust of the Eriskay Golf Club out in the Outer Hebrides. We hope to see him sometime. How about a section outing there!

As I mentioned last month the secre-

MY NEW YEAR'S RESOLUTION IS:



"To have an average year without problems and no extremes in weather or greenkeeping conditions"

- Jean Esposito, Hinckley Hills, Ohio, USA



Education Update

BY KEN RICHARDSON

Happy New Year to all members. My aim in 1996 will be to continue to provide education and training opportunities for all greenkeepers by attempting to meet your needs. This year commences with The Learning Experience, in association with Ransomes, at Harrogate from 22 - 26 January. Details of speakers and their talks appear elsewhere this magazine.

BASIS CONTINUING PROFESSIONAL DEVELOPMENT POINTS

The Learning Experience, in association with Ransomes, is a must, not just because it offers the widest range of education and training to be found in Europe, give credits towards the Master Greenkeeper Certificate and provide evidence towards an N/SVQ qualification but also because BASIS has recognised the National Education Conference, Workshops and BTME seminars as meeting their requirement for awarding BASIS points. BASIS points will be awarded as follows:

- National Education Conference - 5 points
- Workshop 1 - 3 points
- Workshop 2 - 2 points
- BTME Seminars - 2 points per session

REGIONAL SUPERVISORY MANAGEMENT COURSES

In response to members' requests for more localised Supervisory Management Courses, I have arranged for two extra courses to be provided. These are Mildenhall on February 21/22 and Bedford on February 27/28. Please contact me for further details.

MIRACLES DO STILL HAPPEN

Well almost. At a meeting held at Aldwark Manor on December 5, the day following the very successful Miracle Premier Greenkeeper of the Year Competition 1995, it was decided that the competition would continue for at least another year. Roger Mossop and Richard Minton, from Miracle, were very impressed not only by the quality of the five finalists but also by the standard of all the entries, which have continued to improve through the years.

As one of the original aims of the competition was to encourage greenkeepers to better themselves, through education and training, and therefore to improve the standards of playing surfaces, they felt that the competition was achieving its aims and, therefore, worth saving. The rules of the competition for 1996 and the prizes awarded will be very similar to 1995's and are:

1. Entries may be submitted by Head Greenkeepers/Course Managers, club officials, golf club members and greenkeepers who feel that their head man and consequently their golf course deserves to be recognised for achieving the best possible standards from the resources made available.
2. All entries must arrive at Aldwark

Manor by 31 May 1996.

3. BIGGA Regions will each select their three representatives who will progress to the Region Finals.

4. The Regional Finals will take place in June/July and will consist of a fact finding visit (course evaluation) by a Regional evaluator who will be accompanied by a previous Premier Greenkeeper Finalist. They will select their Region's representative to progress to the National Final.

5. The five finalists will have their courses evaluated by a member of the BIGGA board, accompanied by a representative of Miracle Professional, during August/September 1996 prior to the final interviews taking place on December 8/9.

The prizes for the Competition will be:

Miracle Professional Premier Greenkeeper will receive a plaque, will be offered the chance to attend the Golf Course Superintendents Association of America Conference and Show in Las Vegas in February 1997 and will be presented with a cheque for £500 for his greenkeeping team.

The runner-up will receive a plaque and an all expenses paid London Weekend Break, for two, which includes the chance to see a West End show.

Third place will receive a plaque and an all expenses paid Weekend Break for two. Fourth and fifth will both receive a plaque.

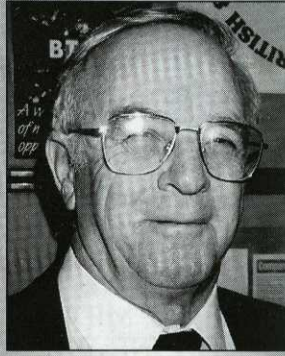
Remember, your course does not necessarily need to be another Augusta National. The judges are looking to see that you are getting the best out of your course, your staff and your

machinery, given a set amount of resources. Give it a try, you might even win.

LATEST BIGGA TRAINING VIDEO ON SALE AT BTME

The latest BIGGA training video titled 'Golf Green Reconstruction' will be on sale at BTME. The video shows some of the problems that may occur with greens, discusses some remedies and concentrates on green replacement. At £14.95 for members and £29.95 for non-members this 15 minute video represents superb value and should not be missed.

MY NEW YEAR'S RESOLUTION IS:



"To relax and enjoy the golden years"
- Gordon Child, Churston GC, Devon (soon to be retiring)



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The Pythium scare

It must be understood that there is emphatically no recorded incidence of an attack of Pythium blight (caused by the fungi *P.aphanidermatum* or *P.ultimum*) in northern temperate Europe, with only isolated suspect cases in the Mediterranean area. This disease which causes serious problems in the very hot, very humid states of the USA is not to be confused with seedling damping-off diseases caused by other Pythium species.

It should be noted that even in the most susceptible areas of the south eastern States in America, it needs long periods of very hot, very humid weather for the disease to strike. When it does it strikes very quickly indeed, giving little chance for curative or corrective treatment.

While it is rash to deny the first appearance of anything, whether it be a rare bird never before seen in Britain or a new disease one must say that pigs are more likely to fly than for a disease suddenly to appear in circumstances vastly different from those pertaining to where it is a real problem.

It is significant that reports of the disease are coming from all over Britain and Ireland – clearly a scare on the lines of BSE in cattle! This would not matter if it were not for the fact that this wrong diagnosis may prevent action being taken against the real cause of the symptoms being reported as Pythium blight and in consequence needless damage is accepted as inevitable.

One can safely say that the fungal disease attacking the Royal Porthcawl greens at the time of the Walker Cup was not Pythium blight. Had it been, there would have been no greens on which to play and the speed of the devastation would have been phenomenal. It has been described as a disease which you can actually see spreading – it is so quick. Furthermore, the symptoms seen by many were not those of Pythium blight. This first shows as characteristic spots, before it spreads like wildfire. In the words of the leading American mycologist Professor Vargas: "...if you notice large irregular dead patches without having seen spots first, the problem is not Pythium blight and you must look for a different cause."

The fact that the greens affected were not those where root zones had been changed – these were free – indicates that the problem was a soil-borne disease, and Pythium is air-borne. Stress was probably an aggravating factor rather than a cause.

There are perhaps two centres where accurate identification of the Pythium species can be made and these do not get samples. All those who have spent years looking down microscopes know

with a relative humidity of 90% or higher.

to discount what they see. Charitably, what was seen was a secondary saprophytic growth of mould developed in transit!

If this disease has never been seen in Europe by not only ourselves but all leading golf course agronomists who have discussed this with us, then one can safely say that it is unlikely to attack your greens. In fact we would suggest that there is more probability of someone winning the National Lottery jackpot on four successive weeks!

Finally a word of warning to mycologists working in unfamiliar country! Never diagnose a disease on the basis of what you see under the microscope alone, but look at least at pictures or descriptions of the field symptoms. There are very few serious fungal diseases affecting golf grasses in this country so do not make the mistake of thinking we are going to be invaded from the States or Mars. You will all have seen Pythium but not Pythium blight. The Pythium you see is that growing on a mouldy crust of bread – and that will not kill turf!

We can learn, however, from this scare – and not just to get accurate examinations. Grass in greenkeeping is increasingly under stress, but that situation is best handled by sensible sound greenkeeping, which will protect turf naturally. Chronic "fus", it is always claimed, is a sign of bad greenkeeping, but the mistakes may well have been perpetrated by past greenkeepers, who have bequeathed unhappy legacies by past over-feeding and over-watering. Even so, disasters do have a habit of occurring at the most inconvenient times and sympathy must be extended to the sufferers, the chief of whom is the man on the spot. Nevertheless parallel disasters in the past have been diagnosed accurately, but whether we can learn and prevent their repetition is another matter!

We must also hope that Pythium blight never reaches these shores because although there are effective fungicides in the States, if applied in anticipation, they certainly could not be used here because they have no approval for use on turf.

Jim Arthur and George Shiels
Golf Course Agronomists

Pythium facts

Infection begins at about 18°C and foliar blighting develops most rapidly when air temperatures are in the 29-35°C range.

Things to watch out for: Daytime air temperatures of 30° or more, nighttime temperatures of 20° or above, combined

with a relative humidity of 90% or higher.

The susceptibility of bentgrass to Pythium aphanidermatum increases significantly when grass is being grown at high salinity, outbreaks of Pythium can occur at temperatures and humidities much lower than those thought to be favourable for disease development (Rasmussen and Stanghellini, 1988)

Pythium Zoospores are very small, and move rapidly in free water, and may spread the fungus through a drainage pattern. The pathogen spreads from leaf to leaf by rapid growth of mycelium. Mycelium infected plant tissues move over large areas on equipment and on shoes. Lush dense, growth with high nitrogen fertilisation is especially susceptible to attack, and the disease may become more severe in alkaline soils than in acid soils.

Management practices to reduce the incidence of Pythium include the removal of dew and guttation water. Leaf wetness can also be reduced by two to four hours when the irrigation system is set to begin at least three hours after sunset and completed before sunrise.

Detection is paramount, therefore, consider investing in a microscope so that a diagnosis can be made early. This is achieved by examination of grass leaves for Pythium hyphae.

Also if your irrigation has an on-site weather station this can aid in monitoring temperatures and humidity.

References: Diseases of Turfgrasses by Houston B. Couch. Compendium of Turfgrass Diseases (second edition). Disease Diagnosis by Patricia L. Sanders.

Seve Schmitz, Course Manager
Schloss Myllendonk, Germany

Montpellier or bust

The Scotts Golf Symposium was acclaimed by all to be a great success on several counts. It was a terrific opportunity to meet greenkeepers from so many different countries – France, UK, Ireland, Spain, Germany, Sweden, Italy, Slovenia, Israel and Denmark providing a very relaxed environment with a European feel to it for exchanging ideas and information and generally getting to know one another. The presence of Dr James Beard was an added bonus to many of us, having read his books it was a pleasure to meet the man in person.

So to the golf tournament on the picturesque but tricky Fontcaude course. Due to time restraints we only played nine holes but everyone enjoyed them-

selves putting on fast greens which some of us had long forgotten since the summer. The back nine proved to be the French greenkeepers' trumpo card, taking the top three places with over 20 points each. Those who took part in the golf clinic enjoyed practising on the driving range or perfecting their putting in short sleeves and 24°.

From the three days there still remain two unanswered questions. 1. Did the French players really play from the ladies' tees? 2. Where is Sun City?

See you next year!

Nic Davies
Germany

● Editor: Can't help with the first question but Sun City is in Bophuthatswana, which I believe is an independent state within the borders of South Africa.

Thanks for a Miracle

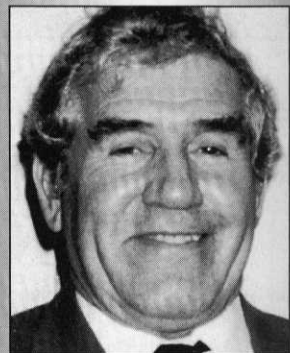
I would just like to congratulate Mike Goodhind on his victory in the Miracle Professional Greenkeeper of the Year competition.

I would also like to convey my sincere thanks to all the people involved at the Awards as they made sure that all the contestants were treated well and made to feel very important.

Can I also say a very big thank you to Miracle Professional for running such an award as I have had a great time participating in it. I think it's a great opportunity to have a good time and to try and achieve a great award. I will certainly be encouraging people to have a go.

Don Wilson
Course Manager, Dyrham Park Country Club

MY NEW YEAR'S RESOLUTION IS:



"To see every greenkeeper become a member of BIGGA"

– Barry Heaney, Wortley GC and BIGGA Chairman