

## Change of Career

In September 2002, I took the decision to change my career and embark on a three year Foundation Degree course in Turfgrass Science and Golf Course Management at Myerscough College. I had been employed within the pensions industry for over 14 years and was ready for a fresh challenge. Due to financial constraints, I opted for part-time study, while continuing to be employed in pensions, albeit on reduced working hours which I negotiated with my employer.



Although I have studied to degree level in the past, balancing the work-study commitments has not been easy. In addition, I had no previous turf or golf knowledge but now appreciate to some extent the complexities faced by those involved in the maintenance and development of a golf course. With the support of other students on the course and the enthusiasm of the teaching staff at Myerscough, I have successfully completed the first year of my studies and subsequently obtained casual, full-time employment on a golf course to obtain

greenkeeping experience and expand my knowledge in this area. I finally exchanging my stilettos for a pair of steel toe caps!

At the end of May 2003 it was a great relief to have completed the exams and I was looking forward to a relaxing, assignment-free break over the summer period. However, reflecting back on what I have learned over the first year of the course and the new contacts I have made within the turf industry, I am now keen to start the second year and develop my knowledge and experience of turf further.

### WHAT HAVE I LEARNED SO FAR?

The Foundation Degree is made up of 12 modules, with four subjects being studied each year when following the part-time route:

#### YEAR 1:

Plant Biology (Grade Achieved: 77%)  
Soil Science and Land Management (Grade Achieved: 73%)  
Golf Course Presentation and Management (Grade Achieved: 82%)  
Turfgrass Establishment and Maintenance (Grade Achieved: 91%)

#### YEAR 2:

Cultivation Practices in Sportsturf  
Turfgrass Growth and Development  
Ecology, Conservation and Sportsturf Management Pests, Diseases and Weeds

#### YEAR 3:

Surveying, Planning and Design  
Sportsturf Machinery Management  
Irrigation Systems, Installation and Management  
Construction Systems

Attendance at lectures is required for only one day a week, although it is necessary to undertake additional reading and research. Myerscough College now offers the Foundation Degree as an on-line option for those not able to attend.

While the lectures were interesting, I found that undertaking the assignments was the most stimulating part of the first year. For Plant Biology, students were required to complete a laboratory workbook, which included plant morphology and anatomy drawings of the different parts of both monocots and dicots (stems, leaves, roots). We then had to answer questions relating to the duration of various plants (annual or perennial), their structure and physiology, with particular reference to their use and management in different sportsturf surfaces (fine turf, seedbeds, rough).

Soil Science also involved the submission of a practical portfolio: a soil sample was taken from a sportsturf area and analysed in the laboratory to identify the properties of the sample (texture, level of organic matter, NPK status, pH, particle size distribution and hydraulic conductivity). Once the analysis had been completed, we were required to comment on the suitability of the soil for the use to which it was put (eg as a golf green, football pitch) and, if necessary, recommend appropriate soil management operations to improve the soil's performance.

For me, the assignment briefs for Golf Course Presentation and Turfgrass Establishment were initially the most daunting, due to my lack of golf/turf knowledge, and required a lot of research so that I could familiarise myself with the basic greenkeeping terms. It was a steep learning curve. These assignments did, however, prove to be the most enjoyable and rewarding.

- Golf Course Presentation and Management consisted of two assignments:
- Practical Book and Record - A diary of the various operations involved in the daily maintenance of a golf course over the period of one semester, giving a general overview of the selected course, a report of the duties undertaken (including any further recommendations for work to be carried out), and costings involved in the completion of the maintenance tasks. As I was not employed by a golf course at that time, my diary was based on the 9 hole golf course at Myerscough College and I would like to thank John Berry, the Head Groundsman, for his assistance in gathering the necessary information to complete this assignment.
  - Investigation and Review of a Stated Topic - This involved selecting a topic such as recent research, product information or a golf course concept, investigating and reviewing the literature available on this subject, and preparing a report to evaluate its application within the current golfing environment. We also had to make a presentation of the report to our lecturer and fellow students - thoroughly enjoyable once the first few minutes were over. I chose "Achieving Definition on the Golf Course" and spent many hours surfing the internet for photographs of bunkers, water hazards, mounds and various mowing patterns. Unfortunately friends now think I'm a bit mad when I get excited about bunkers or other well-presented features on a golf course.

Again, Turfgrass Establishment required the completion of two assignments. Firstly, a practical logbook explaining the processes involved in the establishment of a suitable sward for a specific sportsturf use and the on-going



◀ Applying Rubber Crumb

maintenance schedule required. For this assignment I selected a tee that was in need of renovation. Initially, the problems of the teeing area had to be identified (ie whether it was smooth, level and firm, had any problems of weeds, pests or disease, and the type, density and coverage of grass species).

Visual assessments, quadrat sampling and subsurface assessments using a soil auger were used. Following on from this, a renovation programme was proposed, including costings.

The second assignment in this module was broken into two parts: another literature review of a particular product but also incorporating a research trial to assess the effectiveness of this product on turf. With the increasing number and range of products available for use within the sportsturf industry, it is important to be able to evaluate products to enable sound decisions to be taken. This will require judgements to be made with regard to the accuracy of sales claims and published information, and the ability to accurately test a product. The objectives of the assignment were threefold: firstly, to familiarise ourselves with major research establishments, governing bodies, relevant suppliers and publications; secondly, to develop skills of evaluation and analysis; and, thirdly, to present effectively the results of our investigations in a written, illustrated report.

As the use of rubber crumb in sportsturf is a relatively new development, I chose to review its use as both a topdressing material and a rootzone amendment, looking into the general reasons for using rubber crumb, its manufacture and the products available for turfgrass purposes. A lot of research in this area is currently on-going and most of the literature that is available is in the form of research papers and recent magazine articles.

For my own research into the product, I set up a trial to investigate the effect on seed germination in rootzone material amended with rubber crumb. I would like to thank Brian Tebbutt, of Tebbutt Associates, for supplying literature and the rubber crumb material to undertake the research, and also the laboratory staff at Myerscough College for their assistance in carrying out the trial. A brief outline of the trial and a summary of the results are shown in Figure 1.

#### PRACTICAL EXPERIENCE

Although I have completed the academic side of the course successfully (with final grades between 73% and 91%), I am very much aware that it is one thing to have the theoretical knowledge and another actually to put it into practice. If the Foundation Degree is followed on a full-time basis, there is a separate module in which the student is required to undertake a work placement for one year. There is a similar requirement for those wishing to follow the part-time route, although it is not a module subject to assessment. While I have had some experience during the summer of working on a golf course, I would find that a more structured practical training programme useful.

My original reasons for undertaking the Foundation Degree were out of general interest in the subject, rather than to become a greenkeeper or groundsman. Since commencing the course I have recognised areas in which my previous employment experience could have a more supportive capacity within the sportsturf industry. What may be appropriate is a fast-track programme, similar to graduate training schemes adopted by large companies in other industries. Under such a programme I would gain hands-on experience of all aspects of greenkeeping (general maintenance operations and larger project work) over a relatively short period of time. Given the structure of the greenkeeping business and size of "companies" involved, I feel it would be more appropriate for such a programme to be devised and co-ordinated within the college environment, although the tasks would be undertaken at a golf club. This type of training may also be appropriate for others entering the sportsturf industry and wishing to transfer skills acquired in other business environments.

While I recognise that the student should take responsibility for their own development, such a training programme would need the support of the teaching staff at the college.

The colleges could negotiate with their local contacts to ensure that the student performs certain tasks at least once: possibly arranging with different clubs a series of week-long placements so that the student is involved in projects such as building a new green or attending a Greens Committee meeting as well as the routine general maintenance operations undertaken at various times of the year.

I appreciate that such a programme would require much co-ordination and commitment from students, teachers and golf clubs alike. However, given the changing nature of the sportsturf industry and career patterns in general, such training may be suitable in the future if the sector wishes to attract personnel from other sectors and tap into their skills.

People entering greenkeeping from a business-orientated environment may be comfortable undertaking the more office-based tasks associated with the increasing emphasis on administration, legislation and budgeting (which many Course Managers/Head Greenkeepers tend to shy away from). A fast-track training approach may offer an incentive to such professionals wishing to enter course management, where the traditional route has been to work up through the ranks, and give them a general overview of the practical tasks involved in the maintenance and development of golf courses, etc. In this way, they could support and assist the Course Manager/Head Groundsman in carrying out their duties, while recognising the knowledge required by greenkeeping staff that can only be acquired through several years of practical experience.

#### WHERE DO I GO FROM HERE?

As mentioned earlier, I am looking forward to resuming my studies and successfully completing the course in May 2005. In the meantime, I am investigating more fully how my administration, management, organisational and communication experience can be utilised within the greenkeeping profession. A job as full-time Personal Assistant to a Course Manager would be ideal but these jobs are few and far between. So currently I am considering a new business venture offering support to several Course Managers/Head Greenkeepers, particularly in areas such as budgeting or Health and Safety. In assessing the market for such services, I am beginning to recognise how differently each golf club functions in relation to the greenkeeping section and how it interacts with other areas of club management. Another learning experience!

In order to survive financially over the coming months, I will be resuming employment on a part-time basis back in the (dry, warm) office environment, although this will be outside the pensions industry. It is also a temporary measure until I manage to secure a suitable full-time, permanent position in the sportsturf industry.

I would like to thank Ransomes Jacobsen for providing sponsorship for my studies, thereby assisting in my transition into a more exciting and rewarding career.

**Judith Colley, BSc, APMI**

**Figure 1: Seed Germination in Rootzone Material Amended with Rubber Crumb**

Where rubber crumb is to be introduced as a rootzone amendment, the area will require either reseeding or turfing after the construction work has been completed. It is, therefore, important that the addition of rubber crumb has no negative effects on the germination of seeds. A laboratory trial was set up to study whether the incorporation of rubber crumb into rootzone material would affect the germination rate of perennial ryegrass seed.

**Materials and Method**

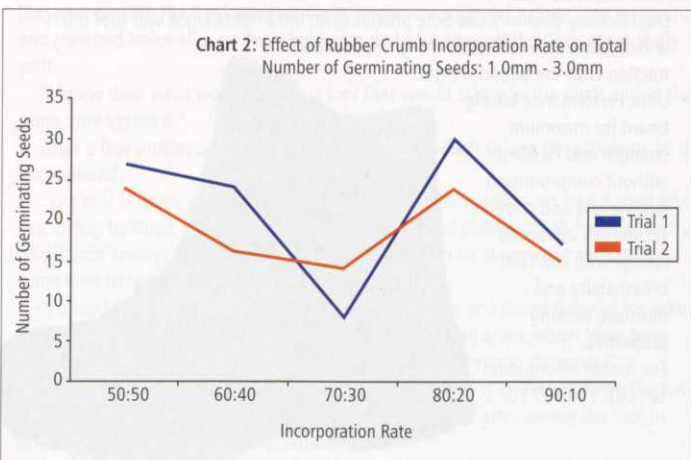
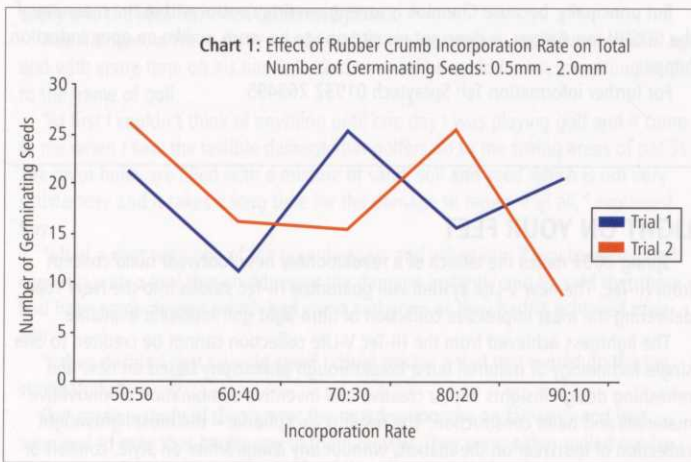
Several incorporation rates were tested (rootzone material :rubber crumb by volume: 100:0, 90:10, 80:20, 70:30, 60:40 and 50:50) using two different grades of rubber crumb (0.5mm - 2.0mm and 1.0mm - 3.0mm). The crumb was incorporated by hand into a sand-dominated rootzone material, which contained a small amount of organic matter, and put in seed trays with 30 perennial ryegrass seeds being scattered on top. The trays were placed in a growth cabinet and watered daily using distilled water. At periods of 7, 14 and 21 days after the initial sowing date the germinated seeds were removed and the number of seedlings in each tray was recorded. A duplicate study (Trial 2) was set up to check the accuracy of the results.

**Findings**

Analysis of the results indicates the following:

**a) Total Number of Seeds Germinating**

After 21 days the lowest rate of germination was found in the tray containing no rubber crumb with the total number of seeds being less than a quarter of those in the next lowest germinating tray. The higher levels of germination generally occurred in the trays containing the 1.0mm - 3.0 mm granule size. The incorporation rate does not appear to have a consistent effect on the total number of seeds germinating, although those incorporated at 50:50 had germination rates at the higher of the scale and those at 90:10 were found in the lower end of the scale (see Charts 1 and 2).



**b) Rate of Germination**

Seven days after the date of sowing the trays containing no rubber crumb had the lowest rate of germination. It also tended to be lower in trays with the 1.0mm - 3.0mm granule size. The number of seedlings appearing during this period was higher in the trays that were incorporated at the 50:50 rate for both granule sizes, although the remaining incorporation rates did not show consistent results across Trials 1 and 2.

Fourteen days after sowing, the trays with no rubber crumb incorporated into the rootzone were again showing a lower germination rate. Germination in this second week of the trial was lower in the 0.5mm - 2.0mm granule size, rather than the 1.0mm to 3.0mm granules which had been experienced in week one. As indicated in the first seven days, the incorporation rates did not show any consistent trends between the two trials, although those incorporated at 50:50 once again appeared to be germinating at a faster rate while those at the 90:10 incorporation rate were slower at germinating.

The final week of the trial showed that the germination rate in the 0.5mm - 2.0mm granule size was lower (as had been experienced in the second week of the trial) and that incorporation rates continued to be inconsistent between the two trials.

**Conclusion**

Results of the trial indicate that the addition of rubber crumb to rootzone material does not have a negative effect on the germination of perennial ryegrass seeds, in fact, the evidence suggests that the germination rate over a period of three weeks is enhanced by the addition of rubber crumb - the level of germination with a rubber crumb rootzone amendment being increased by more than four times. After the three week period, both the size and

incorporation rate of the rubber crumb granules appear to have an impact on the total germination rate. Seeds also germinated faster over the three week period where rubber crumb amendment was the greatest. Although the smaller granule size had higher rates of germination in the initial period, the comparative rates were lower after the first seven days.

More extensive research would be recommended to check the accuracy of these results. A larger number of seeds and a second duplicate trial would minimise further any effects of the seed purity and germination rates on the results. I would also suggest further studies to assess the impact of rubber crumb on germination over the longer term and on other turfgrass species.

Patent was granted in Europe April last year for the use of rubber crumb on grass.

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