John Hughes looks at the business of overseeding and passes on some useful and practical advice...

Sowing the seeds

Greenkeepers often receive unwarranted criticism, particularly over the conditions of greens, yet the public's insatiable demand for regular golfing has led to heavy usage for courses – often in conditions where grass has little or no chance of recovery.

Older courses still have a proportion of greens designed primarily for summer play only, with their construction allowing for the retention of moisture for periods of dry weather usage rather than in wetter winter conditions. Those courses constructed over recent years tend to have very high proportions of sand within the rootzone. Some greens are even constructed of pure sand, while others are simply poorly constructed. Greens therefore suffer from a host of problems from their original construction – let alone from heavy wear. These range from waterlogging and black layer, to rapid pH changes, nutrient imbalance and dry patch.

All this can be compounded by lack of irrigation, irrigation failure, lack of equipment and an inadequate provision for annual maintenance. Climatic variations in recent years have placed further strains on greens maintenance. Low rain levels and mild winters have led to drought damage and stress often followed by disease problems.

With playing surfaces suffering because of conditions often beyond the green staff's control, it is hardly surprising that greenkeepers must wage a constant battle against heavy odds.

Golfers frequently comment on how wonderful championship courses look on television. One suspects that they would not be quite so keen on paying the fees required to maintain the quality of playing surface at such top line courses, or that they would give up their weekend round of golf because of tougher restrictions on playing in poor weather or more frequent course closure for maintenance, experienced at prestige venues. Quality greens come at a price – more money and more time invested in maintenance.

While some greens personnel may feel pressured into radical measures, even digging up the green to resolve problems with playing surfaces, there are various means by which golf course staff, even on less favoured locations, can gain the best from their greens. Chief among them is the underrated, yet highly practical option of reviewing the management of the greens and adopting autumn overseeding.

Evaluation

Due to the enormous variation in greens, their location, construction and usage, it is vital to carefully evaluate the prerequisites for, and the intended results of overseeding

While the structure of the green, its populations of grass species and the conditions and proportions of these species are of prime importance, factors such as rootzone structure, drainage irrigation, staffing levels and budget requirements are also relevant.

Comparatively simple – if time-consuming – measures such as reviewing mowing techniques, or regular soil testing could reveal problems at an early stage. They allow remedial measures to be taken ahead and even avoid the need for overseeding.

The final choice naturally rests with the greenkeeper, with his/her intimate knowledge of the course being invaluable, but it is always useful to discuss all the options and keep abreast of the latest developments from outside sources.

An agronomist or seed specialist can discuss the current management techniques and future strategies with the greenkeeper who can then communicate these to the club management and the wider membership. This can make members aware of the immediate benefits possible from improved management. Moreover, club committees appreciate the considerable savings which preventative measures over a period of years can make compared with costly remedial and structural work on affected areas.

Different greens - different problems

The overseeding of greens, particularly in early autumn is now an accepted annual operation. Various methods over the years have been employed to try to restrict the ingress of Poa annua and the logical follow-on is to re-introduce the most desirable grass species for the location and soil type.

Many greens, particularly on inland courses, are predominantly Poa annua. These are managed skilfully and effectively by greenkeepers to the extent that greens with smaller areas or discrete areas of Poa often present a less uniform surface, despite having a good proportion of desirable grasses. The risk is that when weather conditions favour disease or drought conditions prevail, Poa annua suffers badly and the main part of the surface is rendered unplayable.

Greens constructed with high proportions of sand within the rootzone or free draining greens have their own problems. Dry patch, high water requirements and rapid loss of nutrient are common. Highly specialised greens of purely creeping bent surfaces require a different management to 'traditional' greens.

Creeping bent requires small, regular doses of nitrate-based fertiliser during growth. Overall fertiliser inputs are higher, as is the general moisture requirement. As a result, such greens require efficient irrigation systems to ensure correct infusion of fertiliser while coping with a freely draining rootzone. In contrast, links courses have generally higher populations of fescues, where their natural tolerance to drought and higher pH has favoured their establishment long term.

Management of creeping bent surfaces is also specialised. As a relatively aggressive species, it requires regular, close mowing during its growth phase to deliver a tight, dense sward. Grooming and verticutting is required to prevent thatch build-up.

Correct autumn maintenance is vital: if the sward is overfed, it will be highly susceptible to fungi, which can spread rapidly with a monoculture. The balance between stressing a relatively 'hungry' grass

The dense swards of Agrostis canina make it ideal for older, soil-based greens

Fine-leaved, dense-growing bents such as Agrostis stolonifera can be used for overseeding sand-based greens

and overfeeding can be quite fine.

Generally, where courses have creeping bent greens, the maintenance budgets tend to be higher than for 'traditionally sown' courses. Moreover, play levels are controlled at such sites – a situation which would benefit many other course types.

Even within courses, greens and their requirements may vary. Where greens are built on reclaimed or infill areas, or where different soil types are encountered, the populations of grass species can vary from one green to another within a single course. Heavy shade or lack of air movement can also hamper healthy growth on a playing surface.

Overseeding - the choices

As mentioned, full evaluation of the sward's components and its location is vital before a decision is taken. The actual objective, timing, grass species and method involved in an overseeding programme must all be considered.

Objective

In some cases, overseeding in isolation will not bring much benefit. Many greens suffer from structural problems, drainage failures, anaerobic or toxic conditions already described. Such problems must be resolved through consultation with agronomists and seed specialists, and revised management techniques tested before overseeding is attempted.

Timing

Many courses are involved in competitions and in heavy use well into autumn months. This often means overseeding is attempted too late and little success is experienced and the staff pushed toward more drastic measures such as reconstructing the green. Greenkeeping staff and club officials must establish a space in the playing schedule for overseeding – and preparatory work – to go ahead. Again, the practical possibilities should be discussed with the relevant advisor.

The choice of grasses

If overseeding can be carried out at the optimum time, which grasses are going to be of long term benefit? The majority of greens, especially on inland courses, will certainly improve with the reintroduction of bentgrass. Greenkeepers are increasingly overseeding with pure bent or using higher proportions of bentgrass with fescue.

While golf course managers feel that bentgrass is costly, this species compares well, however, with a 'traditional' fescue/bent mixture, because bent is applied at such low sowing rates, a significant increase in the proportion of bent will create a massive increase in bent seed numbers. In any case, the more competitive bent will in time dominate the sward.

Fescues, both chewings and slender, provide a more rapid initial establishment than bent and are essential for the repair of 'take all' damage. In many greens however, fescues are of little long term benefit and in an overseeding operation can be a very costly 'carrier' .

As many greens are predominantly Poa annua and bent, it is logical to use bentgrass in the overseeding operation. There are several species of bent available:

Agrostis castellana, Agrostis tenuis, Agrostis stolonifera (var palustris) and Agrostis canlna.

In general, Agrostis castellana is losing favour for greens because it is not as fine leaved, wear tolerant or disease resistant as the other bents.

Agrostis tenuis is used increasingly for the overseeding applications. Agrostis stolonifera is used to overseed greens where the species was used originally. Agrostis stolonifera has also been used in some older greens due to its quicker establishment and competitive growth characteristics. While thatch was an issue with early varieties, modern Agrostis stolonifera produces less thatch and is finer leaved than the older varieties.

Agrostis canina is used as a direct alternative to Agrostis tenuis. It has a much finer leaf and tremendous shoot density, providing exceptional wear tolerance.

Particular advantages of Agrostis canina are the dense swards produced despite low nitrate inputs and low moisture levels. These benefits make it an ideal choice for overseeding older, soil-based greens.

Overseeding techniques

As previously mentioned, an evaluation of the existing components of a sward should be carried out prior to overseeding to allow the most suitable technique to be adopted.

Surface scarification, seeding and top dressing can be effective, but tend to leave seedlings vulnerable to foot traffic, mowers and drying out. An alternative is overseeding using direct drilling, the seed delivered into narrow slits into the soil surface, with the slits then closed-in over the sown seed. This creates minimum surface disruption and has been used to great effect in many courses, particularly with creeping bent. The effectiveness of overseeding is strongly enhanced with hollow coring. This method has the advantage of providing an ideal rooting medium for the seed and allowing a reasonable degree of growth from just below the green's surface.

In all these operations, key conditions must be in place to promote establishment.

The rootzone must be at a suitable temperature and moisture available. Mowing heights must be raised to allow development. If there are serious problems (eg. black layer) within a green, overseeding cannot be implemented until those problems are rectified. In most cases, it is preferable to close the green completely before overseeding.

Whatever the course type or location, don't be afraid to take independent advice on managing greens. While the majority of overseedings will involve fescue/bent combinations, most greens will benefit from the use of competitive bents over the longer term. Agrostis tenuis gives sound results, but Agrostis canina with its density and hard-wearing qualities in dryer conditions, can improve the playing surface, particular on older courses.

For sand-based greens, where overseeding with fescue/bent overseeding has not prospered, fine-leaved, dense-growing bents such as Agrostis stolonifera could provide the answer. Whatever route is taken, we must remember that the best grass in the world will not perform unless the green is managed to suit its own characteristics and the local ground conditions.

John Hughes is Senior Technical Advisor for British Seed Houses.