Golf courses across the UK are preparing themselves for an explosion in the mole population by training staff in pest control techniques.

An increase in the number of moles can cause havoc on fairways as each one can tunnel up to 20 metres a day. The hills of earth they create are not only unsightly but they also create additional unwanted hazards for golfers. Molehills also cause problems for greenkeepers by damaging grass cutting machinery and disturbing plant growth.

Experts from the British Pest Control Association have said that a number of factors have caused the population surge. First there was the Foot and Mouth outbreak, which allowed the mole population to go unchecked for 12 months as pest controllers were prevented from treating infestations on agricultural land. Secondly we have seen warmer winters, which have increased the availability of the worms that make up a mole’s diet. This increase in mole numbers has led many golf course managers to reassess how best to tackle the problem.
Knowing your enemy is the key to effective pest control.

"The mole spends most of its life underground and it will use its tunnel network to look for food such as insects, worms and slugs living in the soil. The tunnels run at a depth of about six inches underground and their length will depend on the abundance of food. Each network of tunnels will cover approximately 1,000 square metres," said Tony Stephens from Rentokil Pest Control.

"Moles are solitary creatures and are highly territorial. Each litter will contain three to four young and these will disperse during the mid-summer months to set up their own territories near by."

The traditional method for controlling moles has always been trapping. This may be effective for a single mole with a small network of tunnels.

"First you have to find the tunnels. You do this with a probe such as a metal rod. As you probe the ground between the molehills you should be able to feel less resistance when you locate a run. Ideally the more tunnels you locate the better, however the process can be very time consuming. Once you have located a number of potential trap sites you have to dig a small hole down to the depth of the tunnel. Be careful not to disturb the run too much as it may collapse. Once the trap is placed in the hole it will need to be sealed to prevent the light coming in and this can be done with a piece of turf," explained Tony.

"The traps will need to be checked daily to see if they have been successful. Unfortunately traps can be set off by accident which can limit their hit rate. If the tunnel has been disturbed too much it has been known for moles to block up the run or tunnel around the trap.

"The setting of mole traps is said to be an art form and some have called it a country craft. It is not easy to get it right and it requires someone with experience and skill to use them effectively."

Other traditional methods of controlling moles include burying bottles up to their necks along the length of the run. When the wind blows across the top of the bottles the sound they make is meant to scare the mole away. However, pest control experts have dismissed this technique as being ineffective.

"The research and development team at Rentokil Pest Control have investigated the effectiveness of a number of methods that use sound to scare moles away. They rarely work and, if they do, they usually remain effective for a just a short period of time. Once the moles are used to the sound it no longer has the desired effect," said Tony.
One of the simplest ways to control the pest is to ensure that they do not enter your land in the first place. This can be done by burying a strong wire fence in the ground up to the depth of a few feet. If you can extend this up to six foot deep it will also help keep out other burrowing animals such as rabbits and rats. However, this may be too costly or impractical for the majority of golf courses.

The most practical approach suggested by Tony was the use of Phostoxin (Active ingredient: Aluminium phosphide 56%w/w).

“This is a very popular technique and it is very effective too. Phostoxin is a specialist poison that gasses the moles in their tunnels. It comes in small tablets which when exposed to moisture in the air or soil, release the highly toxic gas Phosphine. It is potentially a very dangerous substance and must only be used by personnel trained in the use of this chemical,” he said.

“To carry out a treatment with Phostoxin you would locate the mole tunnels in the same way as you would if you were trapping. However, rather than dig a hole that could disturb the tunnel, a special applicator is used which injects the tablets through the ground into the run. The area must then be kept clear of people and pets until the gas has dispersed.”

The benefits of Phostoxin are well known and a growing number of golf courses are ensuring that their staff are trained to use it. One such course is Wychwood Park in Cheshire, which is owned and run by the conferencing company Initial Style. The Head Greenkeeper, Keith Ratcliffe, is currently preparing the course to host the PGA European Pro Tour in July.

“At the moment we have been lucky and we do not have a problem with moles. However they are on neighbouring land and I guess it is only a matter of time before we have to deal with them. That is the main reason why I sent one of my greenkeepers on a course to learn how to use Phostoxin. I want to be able to deal with the problem effectively and quickly as soon as it arrives,” said Keith.

Courses on how to use Phostoxin are run by a number of organisations including agricultural colleges and the British Pest Control Association (Tel: 01332 294288/www.bpca.org.uk). The BPCA can organise two-day and three-day courses on how to deal with moles and rabbits. The courses teach participants all they need to know to on how to use Phostoxin safely without posing an unnecessary risk to humans or other animals. Always read the label - Use pesticides safely.
Robert Laycock looks at the options facing you when a green is failing to perform.

The other day I was thinking just how many old golf courses I knew where the worst green on the course was a reconstructed one. In fact, when clients from a potential new golf course first approach me as an agronomist and tell me about a problem green, I would put money on it being the new "USGA" green they were persuaded to build a few years ago which, after a good start, has gradually gone downhill!

In these circumstances of course I do not know how bad its predecessor was. However, I am sure from those instances where I have been brought in before old greens were dug up that, very often, more could be done to preserve them and improve their condition before considering rebuilding.

A golf club should think very carefully before re-building just one or two greens on the course and should seriously consider other options.

BEFORE MAKING THE FINAL DECISION

Some agronomists have too close an association with particular golf course architects. Such people can be almost as dangerous as those too closely associated with a fertiliser company. Independence in agronomy is vital.

If a club feels it is being unnecessarily persuaded (or pressured) by its agronomist to re-build one or two greens, there is nothing to stop it from getting a second opinion or changing agronomist altogether. The recently launched Register of Independent Professional Turfgrass Agronomists (RIPTA) gives a list of qualified agronomists from which to choose.

WHY REBUILD?

Sometimes there are legitimate and unavoidable reasons for rebuilding greens. Examples would be the proposed re-routing of a road through the course, major drainage problems necessitating reconstruction of all greens and major issues such as length of hole and safety issues related to the game of golf.

However, if these are not the case, all other alternatives should be seriously attempted before rebuilding is carried out, as the new greens and old are usually like chalk and cheese, both in terms of their putting quality and in their management.

If some greens are not performing well and have not improved or have been getting worse over a period of time, there are things to try before rebuilding.

1. If greens are genuinely getting worse in spite of the club paying for agronomic advice and following it, the club should change its agronomist to see if there is an alternative way forward – no reputable agronomist wants his or her name to be associated with a course which is gradually performing less well.
2. Correct shady conditions or locally poor drainage, as these will contribute to poor performance. If the course is based on a naturally free-draining soil, rebuilding is less likely to be necessary.
3. Improve the management regimes of poor greens for routine tasks such as aeration, scarification and nutrition.

If none of these do the trick after a year or so of trying, then rebuilding may be inevitable.

The next choice is that of construction technique. Most choose USGA greens.

WHAT IS A USGA GREEN?

The term "USGA green" covers a multitude of sins in practice, but all should, when first built, fulfill the criteria laid down by the USGA. The USGA Recommendations specify the characteristics, mainly physical, of a golf green construction. All USGA greens, at the time they are constructed, are designed within defined limits to drain well in wet conditions yet hold water in dry conditions.

All USGA greens must fulfill these criteria, but every USGA construction is different in some way – for example, I have come across golf courses supposedly running USGA greens where the rootzone pH values were less than 4 and others where they were up to 8. Clearly such greens would need different management. New greens are built using different sands, different sources of organic matter, and so on. The chances of any green of this type having similar requirements to those of an old green are pretty remote.

USGA greens can never easily be brought into the routine management of an old course. Their characteristics of drainage and nutrient requirements are
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so different from old golf greens that they need a completely different management — something that the typically stretched course management team find very difficult to cope with. The different irrigation programmes, top dressing applications and fertiliser applications that are necessary to keep both old and new greens in good condition put a great strain on the green staff.

The option chosen by some, i.e. trying to maintain the new greens in the same way as the old ones - trying to bring their management into line with the others by, say, using the same top dressing on the new greens as was used on the old ones - is a recipe for disaster. Spending a lot of money on a USGA green and then capping it off with a fine textured top dressing so that water is held near the surface is just a waste of money.

For a USGA green to work it has to be maintained like a USGA green. If it isn't, it will deteriorate over quite a small number of years until it is as much a problem as its predecessor.

**EXAMPLES OF WHAT CAN GO WRONG WITH A NEW GREEN**

Even if built and maintained correctly, a new green can still fail to thrive. The most common reasons are:

**LOCATION** — if the existing green is failing because dense trees surround it, the new green will fail for the same reason.

**DRAINAGE** — if the green is located in a bowl at the bottom of a hill, a new green taking its place will also be difficult to drain and, will probably develop anaerobic black layer which is probably why its predecessor went.

**TURF** — for speed you may decide to use turf rather than seed. Conventionally grown turf will import a layer of the soil the turf was grown on, which will interfere with the movement of water from the surface. To avoid this, use washed turf or turf grown on a rootzone compatible with that you are going to use. If you want to know the botanical composition of the turf you are buying, most members of the Turfgrass Growers Association are able to supply a certificate at point of harvest listing the grasses and their percentages in the turf – note, not the percentage in the seed mixture, the percentage ground cover in the actual turf.

**CHOOSE THE RIGHT GRASS SPECIES FOR THE NEW PUTTING SURFACE**

Using turf from the original green (if the new green is no bigger than the old one) is often the best option. The turf will match the original greens, thereby overcoming the objection to the new green that it has a different putting surface. If recently used top dressings are compatible with the rootzone chosen for the new green, the possibility of problems with water percolation can be minimised.

If there is not sufficient old turf to be found on the green, turf or seed of traditional greens grasses will have to be used. Attempting to produce a putting surface reasonably similar to existing greens effectively eliminates the use of seed mixtures or turf with a high fescue content. Many old greens are replaced because they are too wet and thus tend to have a high annual meadow grass content — this is completely different from fine-leaved fescues in its management requirements and thus fescue should normally be avoided for this purpose. (I hasten to add that I believe that red fescue has a place as a greens grass, but this is unlikely to be the case when an old green has to be replaced by another of similar playing quality and management requirements.)

This leaves the bent grasses, which have a leaf blade more similar to that of annual meadow grass. It can also be managed in a similar way, maximising the chances of success with the new green and, as annual meadow grass invades, it is less obvious in a bent grass green. Browntop bent is traditionally used and is probably the best bet. In fact, if the rest of the greens are a mixture of annual meadow grass and bent, they may gradually come to have similar proportions of these grasses.

**GET THE MANAGEMENT RIGHT**

There is plenty of advice around on USGA green maintenance. In fact where a whole course has been constructed in the same way, whether a brand new course or a set of re-built greens, management is not a problem. It is the mixture of new and old that seems to cause the difficulties.

**SO, WHAT CAN A CLUB DO WHEN REBUILDING IS ON THE CARDS?**

First, do not expect the rebuilding to solve all the course’s problems at a stroke. Different, unforeseen, problems may be created.

Second, if you decide to rebuild, use a USGA construction unless you have a proven alternative technique on the course, as on seaside links, where USGA greens should not be necessary (though I know some where, sadly, it has been done). However, the new greens must be managed in the most appropriate way.

Third, if possible for consistency and for the long term goal, aim to rebuild all the greens rather then just a few, perhaps at once or a few a year, though this can be the most problematic approach in the period while there are still different greens to be cared for. Also ensure that if the rebuilding is going to take several years that the source of rootzone is safe — avoid changing supplier half way through the job.

If circumstances allow for keeping an original green as a temporary or alternative green, this can take some of the pressure off the new green as it matures.

You could spend thousands of pounds on building a new green to replace the worst green on the course and find that it is still the worst green on the course! Think twice before rebuilding and do not allow the club to be rushed. Make sure you have tried all the alternatives to re-building, because once done, you cannot turn back the clock.

**WEB SITES:**

Robert Laycock: www.robertlaycock.co.uk

Turfgrass Growers Association: www.turfgrass.co.uk

Register of Independent Professional Turfgrass Agronomists: www.ripta.co.uk
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A Golf Course Pilgrimage
Malcolm Peake goes on a golfing pilgrimage and comes back with concerns for the future of the game

It all started with the idea of visiting my sister Val and husband Ken in New Zealand, but it soon developed into a round the world golf course pilgrimage.

A conversation with Walter Woods started the ball rolling then Walter contacted his old friend Ron Read in California. Ron has worked for the USGA for 22 years and through his contacts I received an invitation to play Cypress Point with the current and past Chairmen of Green. They had a combined time in office of 10 years, which ensured great continuity for the Superintendent and the golf course.

Cypress Point is one of the most exclusive private members clubs in America. It has an attractive and understated Monterey Colonial style clubhouse with a friendly and hospitable membership. Then there's the golf course, and what a golf course. Cypress Point must be one of the most spectacular golf courses in the world and with 28 green staff, the presentation is immaculate. There is the superb Alistair MacKenzie architecture, epitomised by the bunkering, the wild dunes areas, the magnificent Monterey pines and of course Cypress trees, and finally there is the Pacific Ocean and the rocky coastline. If you are lucky, and I was, you might see seals, sea lions and otters. The one species I did not see was the migrating whales, which apparently are a spectacular sight. The sea comes into play on only three holes, but you are in sight and sound on many others and it dominates the subconscious.

The club is in the final stages of renovating the bunkers returning them to the original MacKenzie design, and conscious of environmental responsibilities they are reinstating the dunes areas. Only reclaimed water is used in the irrigation system and as a consequence the golf course has a rather green and lush appearance, which applies equally at all courses in the area. Many well-informed golfers are of the opinion that Cypress Point may well be the best golf course in the world, and who am I to disagree with them.

But what of the other courses on the Monterey Peninsula? Of the ones I visited I liked the architecture of The Links at Spanish Bay designed by Robert Trent Jones, Tom Watson and Sandy Tatum. The original concept was to create an old world Scottish links golf course. This depends on a number of issues, and all except one were in place. The seaside location with wind and elements playing an integral role. The design with rolling fairways and large undulating greens, sand dunes, and plenty of bunkers. Sadly the final ingredient was missing - instead of firm playing surfaces to complement the classic chip and run type shots, there were soft lush fairways and greens, 100% Americanised for target golf.

I understand that this changed from the original intention of the design team. Festive and bent grasses were originally used to ensure a true links playing surface to keep water and fertility low. Unfortunately the influence of THE GOLFER destroyed this concept and the intention was changed. The Links are now more expensive to maintain, mowing is more frequent, and more water, fertiliser and of course herbicides are required. This to me is all very sad, and in my experience is what can spoil well managed golf courses. But I'm getting on my hobbyhorse now, and more of that later!

I visited Pebble Beach, which was being prepared for the AT&T, again a superb site (but very green), it was certainly millionaire golf with green fees up to $425 about £270. I walked a few holes of Spyglass Hills, which took me back to happy trips in the Algarve. Very reminiscent of one of my favourite courses, Quinto de Lago. But it is not all sunshine and light on the Monterey Peninsula. Superintendents are under great pressure from pests, not just golfers, but also nematodes. They are taken a liking to the...
... putting surfaces and "it's driving the Superintendents nuts"!

Onto New Zealand and what a contrast. We arrived at Val and Ken's farm after 14 km on unmade roads, 20 minutes drive to our nearest neighbour. 45 minutes to the shops and the DB draught beer tasted like nectar. The next day Ken took me to play at his club Wairoa (pronounced Why Roa). This was a little gem with undulating fairways and greens with subtle borrows. The annual subscription was a bargain at £110 and green fees of about £5.25. The course was managed by four members, little irrigation or fertilisers were used, and I saw more bent and fescue grasses than I had seen in a long time. You could play every shot in the book and some great golf holes made the course a real joy to play.

Later in the week we went to Poverty Bay Golf Club at Gisborne, the first town in the world to see the dawn each day. This is what I would call a semi links golf course with the sea in view on a number of holes.

The greens were as good as you could find anywhere with a high proportion of bent grasses in them. I met Rowan Clarke, the Course Manager, who explained that he worked hard at encouraging the bents to the detriment of Poa annua, and had long term plans to take out non-indigenous species of fescues and improve the management of the water feature. Because of financial constraints Rowan had only one member of staff, but was hoping to be able to employ an apprentice later in the year. It was quite amazing to see a golf course maintained to this quality by only two people. I hope it is appreciated by the membership, as their subscription was certainly not excessive at about £175. I paid my green fees of about £8.50 and collected my trundler (trolley). The course was another gem and comparatively old being opened in 1894. It held professional tournaments in the 1960's and 70's with players like Bobby Locke and Bob Charles participating. The holes from the 15th at Poverty Bay make it a particularly good finish where level par would be more than satisfactory. In the bar one of the members came up for a chat and enquired where Ken's home club was. When told Wairoa he said, "It's a tricky little course but the biggest hazard is getting out of the 19th!" But I think that's a national problem, hospitality in New Zealand is superb.

On the way back I stopped at Te Pohue Golf Club for a quick look. This was golf as it used to be. Sheep grazed the fairway, "free relief if impeded by sheep dropping, electric fences protected the greens (which you need to turn off before you play or risk the consequences) and an honesty box for the green fees.

In total contrast, the last course I visited in New Zealand was Wairakei. This is in the heart of the lovely countryside surrounding Lake Taupo, an area that bubbles with hot thermal springs, geysers, and burping mud pools. The resort golf course is built on pumice and volcanic cinder, and must have some interesting management challenges. Unfortunately I could not find a greenkeeper to hear about the unique problems. The course had some stunning golf holes, which made use of the natural features of gullies, woods and creeks. The greens looked superb with a high proportion of bent grasses.

Finally I arrived in Australia and a visit to Royal Sydney Golf Club. This was very interesting as the greens were being rebuilt. I wondered if the new construction would return the links feeling golf course to its heritage. The tees are generally on higher ground with fairways and greens in full view, the marvellous bunkering and the humps and hollows were a real feature of the course. Sea breezes are a big factor at Royal Sydney, as on most seaside courses. The early part of the course has a definite links feel; in the middle of the course the fairways are separated by indigenous stunted trees, making straight driving essential.

Royal Sydney is a traditional golf course, which has hosted the Australian Open on a number of occasions. The layout of the course gives you the opportunity, if you are good enough, of fading or drawing drives, hitting the ball high but more often low below the wind. The visit was an interesting experience and I hope I have the opportunity of playing the course again to see how the new greens have developed.

The old greens were constructed over about a five year period in the early 80's to USGA specifications. However, for reasons unknown there were many greens which were not constructed correctly. They had poor quality material and the different layers of material under the greens were not at consistent depths throughout. The result was that the greens did not drain well and had inferior turf quality. Sadly, not an usual story which happens all too often.

It was decided, after much investigation and scientific evaluation, to rebuild them using local sand as the base without any drainage being placed in them. All green sites were fully excavated, in many cases, right down to the water table. The green bases were filled with local sand and the top 30cm being "amended" with peat. The greens turf is "GZ" the fairways are Wintergreen Couch and most tees are Santa Ana Couch.

They were reconstructed and designed by Ross Watson, formerly partner with Graham Marsh. He is a prominent Australian architect with many courses here and in Asia. He has recently done a lot of remodelling work in Sydney.

So what are my impressions of golf in California, New Zealand and Australia? Obviously I saw golf courses of immense contrast in site, climate, architecture, maintenance and, most of all budget. In America I thought the design and architecture of the courses was superb, but was disappointed by the green and lustiness. But that I think is sadly a perception of golfers worldwide. If a golf course is not green, golfers think something is wrong, and nothing could be further from the truth. In some areas I visited there was an acute water shortage yet golfers still expected the golf course to be green. It's irresponsible and unnecessary. At most clubs the Course Managers are doing a good job, but they are juggling too many balls. Maintaining a balance between the demands of the

Are you in possession of a juicy piece of gossip and are just dying to tell someone? Or have you just moved job and want to pass on the good news?

A typical example appeared in a recent Around the Green column:

Who was the person who thought he'd overslept on hearing The Counterfeit Stones playing Honky Tonk Woman in the Majestic Hotel during Harrogate? He jumped up, got himself dressed and down to the ball room only to discover it was the sound check!

Let us at Greenkeeper International know and we'll spread the word. Names could be withheld to protect the innocent... or not so innocent!

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uneducated members and keeping the course in good health is an almost impossible task.

The Americans I met were in the main the aficionado golfer who appreciates that green is not necessarily great, wants to play our classic British and Irish courses. Not only the great links but also the little gems like my own club Temple. They enjoy courses where you can play bump 'n' run, as my American friends describe it, where you use your imagination to play a shot not just to smash a wedge into a green, but to play a classic, a subtle shot, the sort of shot that has been played for over 200 years.

Golfers from all over the world come to our country to play this traditional style of golf, yet sadly in many cases because of GOLFER influence we are trying to produce courses that are green and lush, and American. Why? I don't understand it, we are following instead of leading. Golfers are being influenced by television, by what they see of Tournament golf, by the glossy golf magazines, but do they realise how much it is going to cost, how unrealistic it is, how much water, fertiliser, herbicide, pesticide is going to be required and at a time when environmental issues worldwide need to be considered. Why? This style of target golf is not nearly so much fun, it takes the chance, the luck of the bounce out of the equation, the natural part of golf out of the game - it may be what the pros want but they want everything on a level playing field. You might as well play on all weather astroturf on a billiard table, a tennis court or a bowling green. What fun would golf be then?

Golf on a traditional British golf course is superb, it has so many facets it must be protected from the uneducated golfer. The man on site - The Course Manager is the expert. He is paid to manage, agree a plan and a budget and let him get on and do it!

At Temple, Martin Gunn, Course Manager, and I developed a system which has been used as an example of best management practice, a template if you like. Everything is monitored and recorded so we can put a cost, a value on every part of the golf course and its management. Not only the sports turf, but on the non playing areas - the time and money that is saved by leaving areas natural and has helped to keep subscriptions down. It adds to that subliminal factor, the pleasure got from playing a traditional golf course. Perhaps not to Philistines, but the people who really know about golf. You can play every shot in the book, the thrill of squeezing a ball off firm turf, playing a chip and run from 40 yards or a putt running the ball over little banks and through shallow hollows. Where is golf going to go? Where are we going to end up - you tell me (answers on a postcard). I feel golf is at a crossroads with the distinct possibility of the traditional game of golf - the game I love, being lost forever.

Malcolm Peake is the author of "Confessions of a Chairman of Green" which is available from the STRI Tel: 01274 565131 priced £10.95.