



available, including the Moisture Meter and Firmness Meters.

“It has been a priority for us to keep on top of the moisture levels as consistent as possible, even in these extremely dry conditions. We use the probe and the aim is to keep the moisture in the greens between 15 and 20%, It has been extremely useful and given us an idea as to how different greens react to temperature changes and how much moisture is lost through the course of a day. Some greens dry out quicker than others so the work we have done has brought all the greens in line with each other instead of having one green extremely soft and another extremely hard,” explained Graham, who revealed that only the previous day the readings had shown that the greens were bang on the mark.

The STRI visits once a month to check six test greens while Graham carries out interim testing on a weekly basis himself.

“If they fall below the 15-20 mark we adjust the irrigation accordingly in increments of anything from half a millimetre a time. It means that all our greens and the putting green should be the same. It’s another tool for us to use and this has brought another aspect into greenkeeping which is certainly an interesting one.”

final preparation push began on June 1.

“By then it will have been the final polish. We’ll have the heights of cut down to more or less where we want them and dependant on weather conditions make our final tweaks then.

“We have been working closely with Alistair Beggs, of the STRI, and have been gradually bringing the heights of cut down. Greens will be 3.75 mm by June and we’ll maintain that level until a month before The Open. The aim is to have them running at 10 and a half to 11 feet but we are an exposed site and if it is still dry and windy we won’t want them running at more than 10 and a half as the ball will start oscillating and the last thing we want is a suspension of play.”

Fairway widths were determined some time ago and have changed slightly since 2003 with the 1st, 17th and 18th being widened to counter the complaints of the last Open that the very undulating fairways – they are the most undulating on the Open rota – meant it was difficult to keep the ball on the cut area.

“We thought we would be a little more generous and give the players a bit more room and so they have been widened by five or six yards in places,” said Graham.

Graham was Deputy when the

“Some greens dry out quicker than others so the work we have done has brought all the greens in line with each other, instead of having one green extremely soft and another extremely hard”

Graham Royden



On the construction side 37 bunkers of the 104 bunkers were revetted as part of the last winter programme to add to the 45, which had been done the winter before.

“We had hoped to have everything completed by Christmas but the snow which came early, uncharacteristically for this area, pushed our deadline back until the R&A’s first official visit on February 15.

“The team has been working extremely hard through the winter with long hours and weekend work just to get back on schedule but it has been very easy to motivate the guys with such an important goal to work towards,” he explained.

To protect the course a mat system was introduced at the end of May and with six weeks to go the

last Open was played, and the Open before that when Greg Norman was the Champion he was an Assistant.

Graham’s regular team of 12 will be supplemented by up to a dozen more experienced greenkeepers from the Kent area, together with the 60 strong BIGGA Open Support Team which will prepare and look after the bunkers for the week and generally support the Championship in any way that is asked of it.

“I recently appointed Paul Larsen as my Deputy. He had worked here before but was a Course Manager in Holland and looking to return for family reasons so it’s great to have him back,” explained Graham, who added that the team will be bolstered for the week by two mechanics from John Deere dealer, Godfrey’s;



a couple from John Deere itself, including Howard Storey, and a technician from Hunter Grinders. In all I'll have close to 90 people to call upon."

No-one has more experience of Opens than one member of the staff, Robin Holloway, for whom it will be his fifth Open Championship at Royal St George's.

"His first Open was the 1981 event, won by Bill Rogers, so it is quite an achievement," said Graham.

"The additional support has been wonderful. John Deere and Godfrey's are bringing in six extra hand mowers, tees mowers – we will be hand cutting tees for the first time this time round – four fairway

mowers, two trailers and a hoover collection machine for the range tee. Godfrey's are going to store some of our other machinery to make room."

Royal St George's became the first English course to host The Open when JH Taylor won in 1894 and this year's playing will make it the 14th time the course has played host. Included among its Champions are Harry Vardon (twice); Walter Hagen (twice), Bobby Locke, Bill Rogers, Sandy Lyle and Greg Norman, while the famous Dunlop 65 ball was named in recognition of the stunning second round Henry Cotton shot on his way to winning the 1934 Championship.

One of the most famous holes

is the 4th, which features the giant Maidens bunker, built into a mountainous dune, to the right of the fairway. It's not always in play but when it is it can cause absolute havoc. Enter "Maiden Bunker. Mike Harwood" into YouTube and you'll be given a graphic demonstration of what can happen.

The most significant presentational change this year will be the fact that the fairways will be mown in one direction which will add to the demands on the team.

"For the fairways it has gone from a two man, two machine job to six mowers in a line and we will be cutting from tee to green," revealed Graham, from whom a smile is never far away, no matter the pressures.

In his quieter moments Graham can let his mind wander to around 6pm on Sunday, July 17, when he will be standing in the presentation party as the new Champion is crowned.

"It will be a very proud moment. I've said to the Secretary and the Chairman of Green that I want to be standing there knowing that the team and I have given everything we possibly could in the build up and during the week itself, have had positive feedback and that we have a worthy champion."

Judging by the attention to detail and quality of work that has already been carried out it's a fairly safe bet that Graham and the team will not be left disappointed.



ABOVE: Graham Royden
LEFT: The massive stands are already in place

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Ghost grass

Jonathan Knowles enters the spooky world of ghost grass

The Ghost Grass Disorder is observed by many turf professionals and can raise a few questions.

Is it a passing phenomenon, or, is it an indication of something a little more sinister? It can be identified by the elongated chlorotic (yellowing and whitening) leaves that rise significantly above the surface canopy by around 10 – 25 mm (Plate 1).

This disorder is mostly commonly observed on maintained and closely mown areas including greens, tees and fairways.

With similarities to some diseases it is worryingly at risk of misdiagnosis, costing time and potentially expensive pesticides, conditioners and fertilisers that ultimately have no effect, or possibly exacerbating the effects.

The disorder is not widely researched in UK turf.

In the UK it is mainly referred to as 'Ghost Grass'.

In the United States there are two names used, some refer to the disorder as Mad Tiller, however, since around 2005 it is routinely named by experts as Etiolated Tiller Syndrome (ETS).

The cool-season grasses that are readily named as susceptible to ETS are mainly reported as:

Annual Meadowgrass (*Poa annua*), Perennial Ryegrass

(*Lolium perenne*), Creeping Bentgrass (*Agrostis stolonifera*) and Smooth-Stalked meadowgrass (*Poa pratensis*).

Etiolation

To get a better understanding, it is perhaps important to understand the lay-definition of the phenomenon called - etiolation.

With the absence of prolonged daylight to leaves a physiological differentiation occurs to plants such as grass.

The leaf cells elongate and the chlorophyll loses its green pigment in response to diverting energy into avoiding the darkness by competing or searching for light.

Of course, in many situations where ETS occurs on the golf course, shade and restricted light may not be obvious from overhanging branches or shadows from tall trees.

The conditions of warm over-cast periods; with flush growth followed by wet and cold; with the shortening daylight periods raise the competition for sunlight within a dense sward.

These environmental and surrounding microclimate conditions are considered a contributory factor.

During etiolation, infected plants are observed as having an increase in gibberellins.

Gibberelin

The plant growth regulator gibberellic acid stimulates vertical leaf growth by elongating the cells in maturing grass plants.

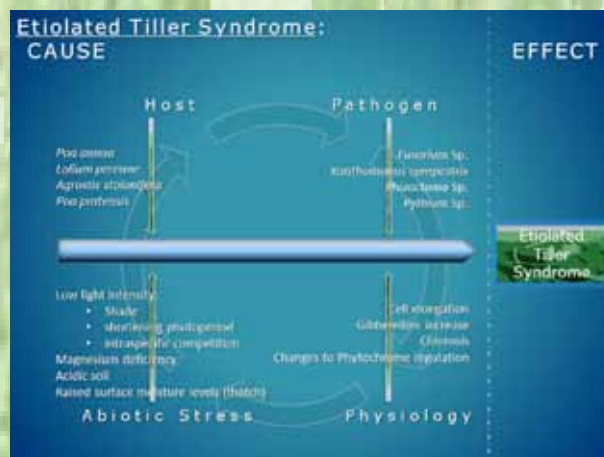
Applied gibberellic acid is known to increase shoot growth, while reducing root growth and overall turf quality.

Gibberellins are synthesised during germination in grasses and cereals specifically.

However, the application of gibberellic acid to seed does not increase germination.

Etiolation can be the result of a number of abiotic factors, such as shade, but also an array of biotic factors, such as bacteria.

Some experts suggest this rapid



production of gibberellins with excessive foliar growth is caused by pathogens such as, *Fusarium* Sp.

Gibberellins were first discovered in the 1930's by Japanese scientists investigating the pathogen *Gibberella fujikuroi* which causes the fungal disease Bakanae in rice.

Many fungal diseases are now known to increase gibberellins, including the large genus of fungi - *Fusarium*.

It is important not to confuse this with *Fusarium* Patch, which is associated with the pathogenic fungi *Microdochium nivale*.

The *Fusarium* pathogens causing ETS are from a different genus of fungi for example, *Fusarium acuminatum*, *F.graminearum* and *F.heterosporum*.

The Causes of Etiolated Tiller Syndrome

The cause and effect of ETS is depicted in Figure 1, the four causes are illustrated as; host, pathogen, abiotic stress, and physiology.

With each of the four causes are listed examples which may be observed during the effects of ETS.

Not all the listed have to be comprehensively observed to give rise to ETS.

For example, not all the host species need to be in the sward, not all pathogens have to be active and not all the abiotic stresses need to be observed.

In principle Figure 1 exemplifies a management tool for controlling ETS, by potentially breaking the known association between the causes.

Managing Etiolated Tiller Syndrome

Similar to other diseases and disorders a threshold will activate the turf manager's action.

If the occurrence of ETS is of little consequence to playability, maintenance and appearance, then management is limiting in disruption, and will often call for increased mowing and continued monitoring.

However, going above the threshold for tolerance may see the significant effects of ETS; this will need management and control.

The control of ETS as with other cases of disease and disorders should be pro-actively managed with cultural approaches.

A cultural approach to disrupting the associated causes would be to culturally manage the abiotic stresses (with the exception of photoperiod (day length)).

A dense sward should never be a mono-culture, as culturally speaking an intraspecific competition for light will always be stronger in a mono-culture as growing patterns are matched.

Also, a mono-culture has the potential for spreading diseases exponentially until the carrying capacity is maximised – this could be significantly detrimental.

It is understood that the susceptibility varies between species for ETS, so a blend of the susceptible species will be culturally more acceptable in comparison to the mono-culture.

Clearly, to introduce non-susceptible species to the composition will reduce incidence and further damage.

Managing the low pH and the nutrient deficiencies may hold an additional control.

Lowering the soil pH by the over application of ammonium sulphate is related to diminishing magnesium ions, this is bad news and an invitation to ETS.

As magnesium is required for chlorophyll production, any observed chlorosis, could be an indication of a magnesium deficiency, and should be investigated.

The application of Magnesium in the form of Epsom Salts has been shown to control ETS in the UK.

Possibly the most important cultural control is the cultural control that should be embedded in every turf manager's mind – aeration.

It is a simple and distinct fact that such diseases do not spread on dry turf.

Essentially, keeping the turf environment dry and firm will limit disease incidence and improve turf health to cope with these stresses.

International research has investigated the application of Trinexpac-ethyl and ethephon (Primo-MAXX and PROXY) for ETS, while the outcomes are sketchy, as the application of Trinexpac-ethyl is suggested as a logical control because of the inhibiting effect on gibberellic acid.

However, there are experts who have observed ETS on areas under routine applications of Trinexpac-ethyl.

Further research is needed.

A broad spectrum strobil fungicide could perhaps, pose as a possibility, it must be said that strobilins e.g. azoxystrobin or pyraclostrobin are not known or labelled as a control for ETS, but they offer a unique systemic mode of action through the xylem tissue and attack many pathogens.

Again, further research could be investigated here.

Beware of misdiagnosis

The misdiagnosis of ETS for the Yellow Tuft (Downy Mildew) disease is plausible because of the chlorotic etiolated leaves.

Yellow Tuft patches are raised patches similarly seen with ETS.

Yellow Tuft effects bent-grasses alone, which, once infected are easily extracted from the turf and are defined circular patches.

Whereas the etiolated leaves associated with ETS can be seen across the turf in an irregular formation, especially on *P.annua* swards.

While the cultural control will be much the same for Yellow Tuft as ETS, diagnosis should always be clarified in order for effective monitoring and management.

In summary

Etiolated Tiller Syndrome could be regarded as a passing manageable phenomenon.

The tolerance threshold may become excessive in some seasons and so the maintenance

Etiolated Tiller Syndrome could be regarded as a passing manageable phenomenon. The tolerance threshold may become excessive in some seasons and so the maintenance programme and soil chemistry may need re-programming and investigating

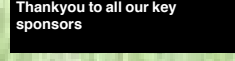
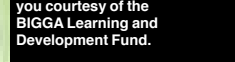
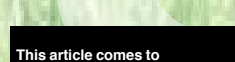
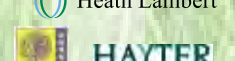
programme and soil chemistry may need re-programming and investigating.

Ensuring any practices to lower the soil pH are monitored and considered a risk towards a disorder such as ETS.

A mono-culture sward should be addressed and renovated to enhance a multi-cultural one.

The turf environment must be maintained as consistently dry and as thatch free as possible.

ETS could be best described as an 'Indicator' of future problems, as a mono-culture (especially of *Poa annua*) with a dense thatch, that is sustained with excessive applications of acidifying fertilisers, will always be detrimental to the turf environment and ultimately the playing surface at some point.



about the author

Jonathan Knowles has been involved in Greenkeeping for 18 years, first as a greenkeeper and latterly at Myerscough College. Recently he has been working on a research project that discusses the effects of cutting height on the grass species in golf greens and the associated trends for adapted ecological methods for greenkeeping.



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A man steeped in the game

Scott MacCallum talks with BIGGA's new CEO, Jim Croxton, about his life, aims and aspirations and what attracted him to a life at BIGGA

BIGGA's new Chief Executive Officer is a man steeped in the game of golf, having grown up on a golf course and worked in golf administration at the top end of the game ever since. He is even a former BIGGA member.

"Golf is close to my heart and I've been involved in it all my life. It's the best sport in the world and I have to say, one of the things I most enjoy about the game is the actual golf courses themselves," said Jim Croxton, as we sat in his new office in BIGGA House in the grounds of Aldwark Manor Hotel and golf course, just north of York.

"Growing up I did practically every job going at the Golf Club, from cleaning the toilets, working in the Pro Shop, running the handicaps, working behind the bar (when I was old enough) and some sales and marketing," he recalled, of the club which his father, David, who sits on the Board of the EGU, has run since 1978.

"But my favourite job without question was working as seasonal labour on the golf course. I loved it. I was very lucky that I wasn't doing a lot of greenkeeping in the winter, but I was doing about four or five months on the golf course a year. When I finished university I went full time for a while which was when I joined BIGGA, giving me the opportunity to learn a bit more about greenkeeping and feel part of the industry."

A year or so in to this period he joined the staff of the PGA where he was to fulfil a number of roles over the next 18 years, until his move to BIGGA.

"My perception of greenkeeping has always been a very positive one



"My perception of greenkeeping has always been a very positive one and the improvement in course quality over the years has been incredible"

and the improvement in course quality over the years has been incredible. If you watch Shell's Wonderful World of Golf you see the greats playing top golf courses but one thing you do notice is the ball bobbling along on the greens. Nowadays you watch golf on TV and they are playing on billiard tables week in week out. That is

down in part to improvements in equipment and greenkeeping techniques but mainly to the increased education and diligence of the greenkeepers and course managers responsible for all of our courses.

"Nowadays it's very rare that you find a course in poor condition."

His other perception of greenkeeping is one shared by so many who work in the profession the length and breadth of the country – that the excellent work carried out is taken for granted.

"Because standards are now so high golfers have come to expect excellence when, in fact, an enormous amount of skill and effort

goes into achieving this. Throw in the variable and adverse weather conditions we now experience such as the current drought and the results are bordering on miraculous. We at BIGGA need to shout about the excellence of our members from the rooftops and also assist them in communicating with their members, visitors, colleagues and employers to ensure their work is appreciated."

While he arrived at BIGGA with more knowledge of what greenkeeping entailed than the average golfer, and a healthy respect for the job greenkeepers do, he didn't have as strong a knowledge of the breadth of work of BIGGA as an Association.

"I had had contact with BIGGA over the years and even spoken at a couple of Section events, but two weeks into the job, I can now see the sheer scale of the challenges BIGGA faces and the opportunities that are out there. That means working directly with the myriad of other governing bodies in the game and the many excellent colleges that provide greenkeeper education through to organising trade shows, golf tournaments and seminars."

During his time at the PGA Jim worked for four years in the tournament administration section at regional and national levels, became R&A Rules qualified and refereed at European Tour events, before moving into management with eight years as Regional Secretary for the North Region, based at Bolton GC, looking after the 1200 PGA members in the Region as well as putting on a tournament calendar worth in excess of £300,000 annually.

"The public face of the PGA is its tournament activity but actually it is just like BIGGA in that it is an educational body with professional standards and CPD and also is actively involved in representing the needs of its members at all levels.

"It is not a trade union and neither is BIGGA but I spent a lot of time working with members to improve their lot at golf clubs and driving ranges by helping them understand how better to be involved with the business and thus to protect their future. I spent the majority of my PGA career in 'member facing' roles and thoroughly enjoyed that day-to-day interaction.

"The public face of the PGA is its tournament activity but actually it is just like BIGGA in that it is an educational body with professional standards and CPD, and also is actively involved in representing the needs of its members at all levels"



"I sincerely hope that I can develop similarly positive relationships with the membership of BIGGA."

"Four and a half years ago Jim was asked to manage sponsorship for the PGA and look after and develop the various Partner, Official Supplier and tournament sponsorship income streams.

"The term sponsorship in commercial terms used to be relevant but now sponsorship is what people ask for when they run the London Marathon. You hand over £20, but get nothing in return other than a warm feeling for having done something for charity.

"Nowadays it is all about investing and partnerships. Companies

Turf disease protection that

after cut... after cut... after cut... after cut... after cut...



are looking for a return on their investment and the challenge is for BIGGA to put together packages for partners or suppliers whereby there can be achievable targets which can then be measured. Then it can be demonstrated that there has been value for money. Once you've done that, renegotiation is much more straightforward."

From what Jim has already identified BIGGA does give value for money to its partners and suppliers, based on the number of re-bookings that regularly come in for Greenkeeper International and for Harrogate Week.

"Early conversations suggest that our customers value their relationship with BIGGA and what we offer. This is evidenced as our advertising, exhibition and sponsorship activity is all healthy at present, but we need to make sure that we keep listening to them about what value they are looking for and make sure they get as much of it as they can."

Jim has been a regular attendee at Harrogate Week over recent years, seeing it as the ideal opportunity to catch up with the industry and meet up with the movers and the shakers who also

see Harrogate as the ideal January meeting place.

"Since joining BIGGA I've studied the statistics for Harrogate Week 2011 and they prove that it was a successful week, with strong attendance and good feedback from exhibitors.

"Additionally our educational programme is thriving with attendance in 2011 being more than 24% up on 2010. It was a worthwhile week and shows that it certainly is not a show on the wane. I think that's because this industry thrives on face-to-face meetings and the demonstration of product.

"This is a very established industry. People have been looking after sports turf for many years and a lot of the companies we work with, although they may have gone through buyouts or name changes, have actually been around for a long time and are steeped in integrity. They are good businesses and are about people. The opportunity we provide for our visitors and those companies to interact for a few days each January, is a vital benefit for everyone.

Harrogate provides the perfect platform for this," said Jim.

His first priority now that he has

started is to put together a long term strategic plan for the Association and a comprehensive review of current activity.

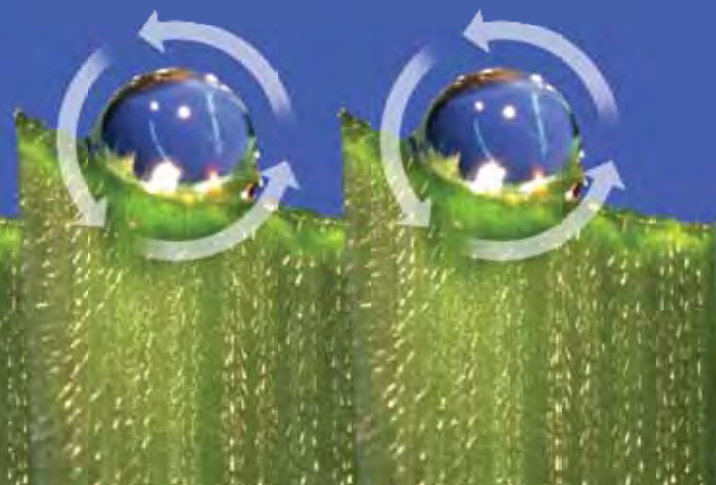
"The Board's ambition for this is that it should be in place within six months of my starting. It's a tough target as it is not a passive strategic review, but an active one being formed while we continue to run the business," said Jim, who is also hoping to get around the country attending as many Section, Region and National meetings and events as he can as well as arranging meetings with BIGGA's trade supporters.

"Over the next three to five years the aim is to create a sound financial and commercial model to ensure that the business, which is currently healthy, remains strong and grows in a sustainable fashion.

"At the same time we've got to increase the recognition of the work that greenkeepers do and, to use a modern expression, make it a 'no-brainer' for greenkeepers to join BIGGA."

It's going to be a busy short, medium and long term for BIGGA's new CEO but you can be sure that he is up for the challenge.

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The Ransomes' way

Scott MacCallum catches up with David Withers, the Managing Director of BIGGA Gold Key Supporter Ransomes Jacobsen



Not far from the Ransomes Jacobsen factory, on a huge industrial estate just outside Ipswich, is a road called "Ransomes Way".

It is pure coincidence, the two are not related as, I believe, the road, was named in honour of the "Swallows and Amazons" author Arthur Ransome, who has connections with the area.

But wouldn't it be great if the road and the company were part of a master plan because listening to Managing Director, David Withers, you become very aware that there is a Ransomes way – or more accurately - a Ransomes Jacobsen way.

"Over the last four or five years we've focussed on three core principles. 1. You've got to build a relationship with your customer; 2. Build a good machine, which meets the customer's unmet needs and 3. You've got to look after it for the whole life of the machine," explained David, as we sat in his office overlooking the wonderful three hole golf course which has become such a feature of the Ransomes Jacobsen HQ over the last three years.

"If you do these three things, you'll succeed in business. Get any one of them wrong and you'll fail," said David, who was honest enough to admit that the company had not always achieved all three.

"There have been times in the past when we did get one or more of them wrong."

David is very much a people person and is keen that the team he has built around him contains individuals of a similar vein.

"I'm definitely a believer that you've got to build relationships. We don't just sell a mower and walk away. It's all about repeat business and that comes back to having the right people in place. We always try to hire the best people we can and don't give them short term incentives.

"We always look to the long term path and that means winning one customer at a time.

"That is the ethos which runs through the whole company and if you hire people with that same kind of philosophy, and reinforce

the message, the more you will tend to end up with a group of people who embody that spirit and ideal."

The success of the policy has seen the Ipswich-based team extending their boundaries to cover the Asia Pacific rim.

"We had always described our territory as 'I to I' – Iceland to India - now it is still 'I to I' but now it's Iceland to Indonesia. It is very good news for us and gives us the chance to explore an area which has potential for growth in the golf industry," said David, who explained that the new area had previously been covered by Textron's American team but that they were now focussing on Latin America.

"We were known to have a good sales team – or 'Bench strength' as they describe it in the States – and it was felt that we should have the opportunity to use that strength to build on the excellent work that the US team had already done."

Ransomes Jacobsen's Sales Director, Alan Prickett has relocated to Singapore to become Managing Director of the Asia Pacific Region.

"We are used to managing disparate time zones and the expansion fits in nicely with what we have been trying to do in terms of getting close to our customer," said David, whose already extensive travel schedule has recently increased markedly, with additional trips down to Asia coupled with his regular trans-Atlantic hops to the States.

Indeed he's a real rival to George Clooney's character in "Up in the Air" when it comes to Air Miles.

"It'll calm down when Alan gets everything in place in Singapore," he said.

Other than Alan, they have recruited nationals wherever possible to fill key roles in the various countries.

"I'm a believer in that strategy. The more you can have the local culture represented the better, as it is much easier to fit in and communicate with customers."

Like so many companies in all areas of business the recession has had an impact on Ransomes Jacobsen but David feels that they are fortunate to have a balance of markets to trade in, plus

"I'm definitely a believer that you've got to build relationships. We don't just sell a mower and walk away. It's all about repeat business and that comes back to having the right people in place"
David Withers



the backup of a huge company in Textron.

"Generally speaking we have the public money with our Ransomes brand and private money with the Jacobsen, EZGO and Iseki brands. In recent years if one side has been up the other side has been down and they have balanced themselves out.

"However we had the perfect storm in '09 when we had a bad public year and a bad private year. We had to put a redundancy programme in place and had to shut the plant on a couple of occasions," explained David, candidly.

One of the major problems was that the RJ dealers had strong inventories of machines in stock and were reluctant to order more until they had sold what they held.

"They were quite right and so they sold what they had in stock and we accepted the situation and didn't push any inventory onto them. We ran the plant slow and lean and it was tough for us, but I'm happy to say that we didn't lose any dealers during that time."

While it meant a tough 2009 the following year and first half of this year have been more encouraging.

"Having sold what they held the dealers had empty shelves at the beginning of 2010 and needed to restock and with a decent year they ended the year with the same amount of inventory as they started so they had sold out what they have bought in so 2010 was a good bounce back year."

One area which has particularly pleased David is the number of new customers they have attracted during the recession.

"We track our unique customers and last year we had 30% more unique retail customers that we