

Finance for Mowers

Ian Henderson, Managing Director of Golf Finance Ltd on funding of Mowers and other Grass Machinery.

Q. How many Golf Clubs use finance for the funding of mowers and other grass equipment?

A. "The majority of Golf Clubs, whether Members Clubs or proprietary businesses use finance, when acquiring new machinery. There has been a very big change in attitudes towards finance in the past 10 years with most clubs now very comfortable with all forms of structured funding".

Q. There are several forms of finance talked about, such as Lease, HP and Contract Hire. What is the best type of agreement for a golf club?

A. There are great benefits to members clubs with either leasing or contract hire. With this type of agreement the club can spread the vat over the life of the agreement, rather than having to pay it all up front as with Hire Purchase. With the current vat de-minimis in place the savings made in spreading the vat can go a long way to offsetting the interest charges on the agreement.

For proprietary clubs or clubs who are out with de-minimis, hire purchase is a good alternative.

Q. You mentioned Lease and Contract Hire, what is the main difference between these products?

A. Lease, or Finance lease to give it the correct name, is where the club agrees to hire the equipment over a set period, of say 3 or 5 years. At the end of this time the club effectively own the full value of the asset. If the club choose to sell the equipment or trade the machine back in, they would benefit from a 100% rebate of sale proceeds. If the club choose to retain the machine after the primary rental period a small "secondary" or "peppercorn" rental is normally paid on an annual basis. With Contract Hire, or Operating Lease the machine is simply returned to the supplier at the end of the period. It is fairly common to have a maintenance schedule built in with a Contract Hire agreement, which gives the club a one stop shop.

Q. Over how many years do Golf Clubs normally finance their mowers?

A. With the quality of machines which are produced by the main manufactures today, it is quite common for clubs to finance mowers over anything up to 7 years, sometimes longer for a small or 9 hole course. The average is 5 years, which allows a manageable cost annually, but avoids any large repair bills and maintenance charges.

Q. Golf Finance talk about "Cashflow Matched Finance", what exactly is this?

A. Every club is different. We understand the income cycles within clubs vary, depending on the geography, the time of year when subscription payments are collected and visitor income levels. By studying these details we can design a package which is suited to each clubs cash flow. This avoids collecting large direct debits when the club has little or no income.

Q. How do you manage to stay ahead in this competitive market?

A. As independent brokers we will negotiate the package for the club which is the best suited, and most competitive given the circumstances. Whether the deal is for a \pounds 3,000 hand mower or a \pounds 3 million pound mortgage we have a range of funding partners with whom we have worked for many years and are always keen to do business in our market place.

Q. How does a club go about arranging finance through Golf Finance?

A. Our details are in the buyers guide in Greenkeeper International each month, or you can visit our website www.golffinance.co.uk and email an enquiry, or simply call us on 01620 890200.

We have facilities for all types of new and used equipment, and would be delighted to discuss any requirements any clients may have.

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Cutting It

Roland Taylor gets out and about and discovers what some greenkeepers feel about the cylinder mowers they use.

The principle of the cylinder mower has changed very little since Budding patiented the system back in the 1830s.

The main differences since those early models are the methods of propulsion, number of blades in the cylinder, the means of powering them and materials used in their construction.

Bearing in mind that the actual cutting is virtually the same on every mower. What makes one particular model a Course Manager or greenkeepers choice? To find out some of the answer to this question a number of courses have been visited to discover which machines they were using and why they chose them.

Gavin Playford of Royal Norfolk GG tackles his fairways, in the rain, with the John Deere 3235C



Built virtually on the beach, the Royal Norfolk Golf Club can be pretty hostile and cold with freezing northeast winds coming straight off the northern ice cap. When visiting this course it is advisable to check the tides, as there are times of the day when it is cut off from the mainland.

The fairways are on sand, so grass cover is often sparse, especially in drought conditions even though the course has its own bore hole for irrigation. The course is a continual challenge against the elements for Head Greenkeeper, Gavin Playford, and his team.

For mowing their fairways they use the latest John Deere 3235C. Gavin said they are very pleased with the machine's high output and quality of finish.

Because they are running a number of different John Deere machines they have found that the standardisation of height adjustment and cylinder settings make it easy for the operators. "Spending all day on a mower can be very tiring, so ergonomics regarding the driving position and layout of the controls are important. We have found on this machine that this is major feature of the designed.

"A very comfortable seat can be adjusted to suit each operator and all the controls are within easy reach. What we do need however is a cab; it is not very pleasant out there on the course with a gale howling in from the northeast. I understand they are developing one let's hope it is sooner rather than later," explained Gavin.

Other features they liked about the mower are the simple servicing procedure and ease of access to all moving parts.

The 3235C has a 48.5hp turbo diesel engine and servo controlled hydrostatic pump to all the wheel motors. There are five cutting units and the Royal Norfolk have the eight bladed version, which has a height of cut range from 9.5mm to 76.2mm and a frequency of cut of 2.14 km/h. A control module enables the operator to monitor the machines performance and identify any problems.

There are a number of reasons why Gavin has choosen John Deere, but one of the most important is the outstanding after-sales support they get from their dealer, Ben Burgess, of Norwich.

"We are out in the wilds so if a machine goes down or we require replacement parts, backup is needed immediately, our dealer ensures this happens.

"This type of service is paramount to us if we are to carry out our commitment to provide the club members with the playing surfaces they expect," said Gavin.

Spalding in Lincolnshire is famous for its bulbs, horticultural and agricultural produce. One of the reasons for the soil's fertility is that this area of England was once, long ago, under water.

Rivers flowing into the sea at this point left deep silt deposits that have, over the ages, combined with fine clay to form a highly productive

the wheels and tyres from a G-Plex III have been fitted. The 12" tyres will be of benefit on the steep sides of tees and also enable them to cut very close to bunker edges without damaging the lips.

Spalding has an excellent workshop where they carry out all their maintenance and repairs including regrinds.

"The MagKnifes will give us considerable savings in downtime and for this reason we are considering fitting these cylinders to our Fairway 405. The units are interchangeable with the T-Plex and will give us even more flexibility," explained John.

The MagKnife, which was launched at Saltex, is claimed to have a revolutionary method of fitting bottom blades, which in the past have been held in place by a number of screws.

Removing a worn or damaged blade has always been difficult and when a new one has been fitted it has often had to be ground to ensure it is level.

The Magknife is said to eliminate these problems and where as before

John Masell, Spalding GC with his new Jacobsen T-Plex MagKnife

and moist retentive soil.

John Maskell, Head Greenkeeper of Spalding Golf Club said that when they were building an on-site reservoir, the work was stopped three times because ancient saltpans were discovered and archaeological records needed to be taken before the work could continue.

The fairways on the course considerably benefit from this type of soil base and maintain their greenness longer in drought conditions.

John, who has been involved in greenkeeping for over 28 years, joined Spalding G C 18 months ago. He said that part of their programme was to rejuvenate their tees and provide higher quality playing surfaces.

To help in this project they have recently purchased a specially-adapted new Jacobsen T-Plex MagKnife. The machine has been modified to suit their compact tee boxes.

Eleven bladed reels are used for a fine cut and to achieve better traction

the changeover per unit has taken in the region of one and half hours the new operation is said to be completed in three minutes.

MagKnife uses powerful magnets with a force of 19kgm instead of screws to hold the bottom blade in position on locating dowels. According to Jacobsen a special tool is required to break the magnetic force and once this is done its only a matter of removing the old bottom blade and locating a new one.

Barkway Park Golf Club is a privately owned course, built 11 years ago on agricultural land in North Hertfordshire. The underlying soil is heavy clay, which makes it a difficult course to maintain and adding to this problem there is a wind factor, so drying out often occurs.

Anthony Lake is the Head Greenkeeper and has been at the club for just over eight years. For the last two years he has used a Toro Reelmaster 6500 D for the fairways.



"We like the unit very much especially its robustness and strength. For us this is important because our dry ground conditions can place a lot of stress on the machine. The high level of output is another feature that goes down well here at Barkway, as there is only two of us plus occasional help to look after the 18 holes," he said.

"We have found the Reelmaster very 'user friendly' and comfortable to operate for the long hours it is worked throughout the year. It is easy to maintain and the backup support we receive from our local Toro service dealer, Cam Mower Services, is excellent."

To maintain the standard their players expect, the fairways are mown weekly at alternative angles of cut and are fed and scarified once a year.

Toro's Reelmaster 6500 D has a mowing width of 2.44metres, which is made up of five 56cm cylinder units mounted on a LINKS cutting system

It is not just the grass that will be stressed by blunt or badly set cylinders all the mower's components can be effected. In addition with the high temperatures the machines are working at the situation is compounded by placing extra loading on the engine, bearings and drive systems.

With all the machines featured, keeping the units sharp and correctly set is well catered for and relatively easy to carry out. Some would say easier on certain models than others.

Next month some other clubs will be featured with details of the types of mowing machines they are using for their fairways, tees or greens.

See Buyers' Guide for companies that specialise in mowing equipment.

The Toro out on a very wet day at Barkway Park Golf Club



suspension. This consists of four free-floating linkage arms and individual lifting arm dampers to ensure the units hug the ground contours.

Power is provided by a 55hp Peugeot diesel engine. The data log system is available as an optional extra that enables a mechanic to find intermittent problems. There are diagnostic points on the mower for the front and rear-cutting unit drives and lift plus ones for the steering and hydrostatic transmission.

From the clubs visited it is clear that in their particular areas there has been a strong growth of grass over the last three months, although at the time of writing, temperatures are soaring into the high 20s.

Regardless to the amount of grass and the standard of the fairways one of the most important factors for producing a quality finish and smoothness of the mowing operation is the sharpness and set of the cylinders.

OTHER COMPANIES THAT SPECIALISE IN MOWING EQUIPMENT:

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Dennis	01332 824777
Etesia UK Ltd	01926 403319
Hayter Ltd	01279 723444
John Deere	01949 860491
Lastec UK Ltd	01622 812103
Lloyds of Letchworth Ltd	01462 683031
Massey Ferguson (AGCO)	02476 851286
New Holland UK Ltd	01268 292580
Ransomes Jacobsen Ltd	01473 276223
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As a member of the Greenkeepers Training Committee, BIGGA is actively involved in raising the Standard of Greenkeeper Training. The range and quality of training now available means that there is a training course for every greenkeeper which should improve the quality of greenkeeping and help to produce better quality golf courses.



Golf Course Managers should ensure that their staff are trained to the highest standards, beginning by selecting a training provider that meets the criteria laid down by the GTC.

There is a clear link between education, training and economic success and if you think that training is expensive then try ignorance.

Ken Richardson Education and Training Manager, British and International Golf Greenkeepers Association Tel: 01347 833800 Email: education@bigga.co.uk Website: www.bigga.org.uk

Enjoy Your Greens?

BCA is a BIGGA (British and International Golf Greenkeepers Association) approved centre for greenkeeper training at craft level. We have industrial links and training agreements with top-ranking golf clubs in the area as well as our own Greenkeeping Group. All of this, together with our team of professional staff, ensures that you have the highest quality in training and facilities.

Our golf training facilities are full size and open for play, but are primarily there to train professional greenkeepers. The greens are each of a different design and construction with architecture demonstrating a variety, covering the whole of the 20th century, and looking to the future. Computerised irrigation systems complement this unique training resource.

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GREENKEEPER TRAINING

abingdon:witneycollege	ABINGDON AND WITNEY COLLEGE Warren Farm Campus, Horton-cum-Studley, Oxford OX33 1BY Contact: Alan Brown or John Revis Tel: 01865 351794 Fax: 01865 358931 Email: john.revis@abingdon-witney.ac.uk Web: www.abingdon-witney.ac.uk Information: Warren Farm Campus is the base for Abingdon and Witney College's education and training in Greenkeeping, Sportsturf, Amenity horticulture and allied land based courses for the whole of Oxfordshire. Courses include:- NVQ Levels 2 & 3 in Sportsturf, Landscaping and Nursery. We also offer a range of short courses for the Industry including Health & Safety, pesticide training and chainsaw operation. For more information contact either Alan Brown or John Revis on Tel: 01865 351794 or Fax: 01865 358931.
ASKHAM BRYAN COLLEGE	ASKHAM BRYAN COLLEGE Askham Bryan, York, North Yorkshire, YO23 3FR Contact: Central Admissions Tel: 01904 772211 Fax: 01904 772288 Email: sf@askham-bryan.ac Web: www.askham-bryan.ac.uk Information: National Certificate in Horticulture, National Diploma in Horticulture (Turf Option), Higher National Certificate in Horticulture (Golf Management Option) all available full or part time. Block release courses: NVQ Level 2 Greenkeeping, NVQ Level 3 Greenkeeping and Sportsturf Maintenance, NVQ Level 4 Amenity Horticulture. Short courses: FPA spraying, chainsaw and brushcutter courses.
BCA	BERKSHIRE COLLEGE OF AGRICULTURE Hall Place, Burchetts Green, Maidenhead, Berkshire, SL6 6QR Contact: Andy Williams Tel: 01628 824444 Fax: 01628 824695 Email: enquiries@bca.ac.uk Web: www.bca.ac.uk Information: Located in the Thames Valley, BCA has excellent resources for horticultural based training a six-hole training facility opened by HRH The Duke of York. Programmes include the First Diploma, National Certificate and National Diploma in Horticulture, with Landscape Design and Greenkeeping options plus Higher National Diploma/Certificate programmes. Part-time programmes include NVQ Level 2 and 3 Amenity Horticulture, Sports Turf. Residential accommodation is available.
Brooksby Melton College	BROOKSBY MELTON COLLEGE Brooksby, Melton Mowbray, Leicestershire, LE14 2LJ Contact: Student Services Tel: 01664 850850 Fax: 01664 855355 Email: course.enquiries@brooksbymelton.ac.uk Web: www.brooksbymelton.ac.uk Information: Situated on the A607 between Leicester and Melton Mowbray. Programmes available include NVQ Levels 2, 3 & 4 in Greenkeeping. Work based emphasis for all of these programmes. Short courses available in Arboriculture/Chainsaw work, TDLB training and Pesticide application training.
Cannington College	CANNINGTON COLLEGE Cannington, Bridgwater, Somerset, TA5 2LS Contact: Steve Hasell Tel: 01278 655123 Fax: 01278 655055 Email: enquiries@cannington.ac.uk Web: www.cannington.ac.uk Information: National Certificate in Amenity Horticulture (Sportsturf), Certificate of Higher Education in Golf Course Management, NVQ Level 2 Golf Greenkeeping, NVQ Level 3 Greenkeeping and Supervisory Management, NVQ Level 4 Horticulture (Sportsturf), FEPA Training, Chainsaw Certification, Off- Road Vehicle Certification, Greenkeeper Mechanics, Certificate in Irrigation (BTLIA) 1 week course. Note: Certificate of Higher Education is available as a part-time option.
	EAST DURHAM AND HOUGHALL COMMUNITY COLLEGE Houghall, Durham, DH1 3SG Contact: Tony Millan or Ian Lacy Tel: 0191 375 4754 / 0191 375 4740 Fax: 0191 386 0419 Email: enquiry@edhcc.ac.uk Web: www.edhcc.ac.uk Information: Full-time courses: National Certificate in Horticulture/Greenkeeping and Groundsman 1 year; National Diploma in Horticulture Turf Option - 2/3 years. Part time courses: Greenkeeping and Sportsturf maintenance NVQ Level 2 - Day Release. NVQ Level 3/4 Greenkeeping and Sportsturf Maintenance Day Release. Short courses: FEPA Modules, Chainsaw certification, Tree inspection, Horticultural Machinery, Safe Lifting and First A
Hadlow	HADLOW COLLEGE Hadlow, Tonbridge, Kent, TN11 OAL Contact: Sally Flanagan Tel: 01732 853241 Fax: 01732 853207 Email: sally.flanagan@hadlowcollege.ac.uk Web: www.hadlow.ac.uk Information: National award and National Diploma in Horticulture. NVQ Level 1 Horticulture, NVQ Level 2 & 3 in Amenity Horticulture in Hard Landscaping, Sports Turf and Production Horticulture.
COLLEGE BLOUCESTERSHIRE University of the West of England	HARTPURY COLLEGE Hartpury House, Gloucester, Gloucestershire, GL19 3BE Contact: Rosalind Camp Tel: 01452 702132 Fax: 01452 700629 Email: enquire@hartpury.ac. Web: www.hartpury.ac.uk Information: Courses available: College Certificate Greenkeeping , First Diploma Amenity & Landscape Horticulture, National Award Amenity & Landscape Horticulture, National Award Greenkeeping & Groundsmanship, National Certificate Amenity & Landscape Horticulture, National Certificate Greenkeeping & Groundsmanship, National Diploma Amenity & Landscape Horticulture, National Diploma Sport (Performance and Excellence)(Golf Studies). Work Based Training NVQ's, RHS examinations City & Guilds, TDLB Assessor Awards as well as a full range of amateur, leisure and day release courses.
GUILDFORD COLLEGE Merrist Wood	MERRIST WOOD CAMPUS OF GUILDFORD COLLEGE Worplesdon, Guildford, Surrey, GU3 3PE Contact: Joe Paulin Tel: 01483 884088 Fax: 01483 884001 Email: jpaulin@@uildford.ac.uk Web: www.guildford.ac.uk Information: Part-time courses: NVQ Level 2 Sportsturf college day release and workplace visits/assessments at N Wood and at Crawley, Level 2 Edexcel First Diploma college day release, for those without qualified workplace accessories, NVQ Level 3 Sportsturf college day release and workplace visits/assessments, Level 3 Edexcel National Award college day release for those without qualified workplace assessors, Edexcel HNC Turfgrass Science and Management college day release. Please contact us for up-to-date listings, qualifications and advice. Career Evenings held monthly at the college.
Myerscough	MYERSCOUGH COLLEGE Bilsborrow, Preston, Lancashire, PR3 ORY Contact: Colin Stanfield Tel: 01995 642222/642305 Fax: 01995 642333 Email: mailbox@myerscough.at Web: www.myerscough.at.uk Information: Full time courses; BSc (Hon's) Turfgrass Science, Foundation Degree Sportsturf Science - online option by distance learning. ND T Science & Sportsground Maintenance: Natinal Certificate in Groundsmanship and Greenkeeping, also Sports Turf Mechanisation option: First Diploma in Greenkeeping; Turf Sc NVQ 2, 3 & 4 Greenkeeping Management delivered both in the work place and over the internet using the colleges 'Mollnet System'. Part-time courses NVQ Level 2 & 3 Greenkeeping and Sports Turf Maintenance (Daylbock release or Fast track work-based training qualification). All higher education courses can be accessed on a part time but HNC Turf Science: FEPA Short courses. NPTC Certificates of competence in the safe use of mowers and turfcare equipment. Careers mornings monthly on saturdays.
Nescot	NESCOT - NORTH EAST SURREY COLLEGE OF TECHNOLOGY Reigate Road, Ewell, Epsom, Surrey, KT17 3DS Contact: Mr Colin Smith Tel: 0208 394 3228 Email: info@nescot.ac.uk Web: www.nescot.ac.uk Information: NVQ Levels I, II and III in Amenity Horticulture (Greenkeeping options). Part time Day Release. Duration: Two years to Level II. FEPA Spraying Courses. Also available - RHS General and Advanced Certificates in Horticulture. RHS Diploma in Horticulture.
OAKLANDS COLLEGE	OAKLANDS COLLEGE St Albans Smallford Campus, Hatfield Road, St Albans, Hertfordshire, AL4 0JA Contact: Andrew Wight Tel: 01727 737080 Email: andy.wight@oaklands.ac.uk Web: www.oaklands.ac.uk Information: Full time courses: National Certificate in Greenkeeping and Sports Turf Management. Part-time courses: leading to NVQ Level 2 & 3 Greenkeeping, Apprenticeship Training. Evening Courses: leading to NVQ Level 4. Short Courses: Pesticide, Chainsaw.
Plumpton College	PLUMPTON COLLEGE Ditchling Road, Plumpton, Lewes, East Sussex BN7 3AE Contact: David Blackmur Tel: 01273 890454 Fax: 01273 890071 Email: enquiries@plumpton Web: www.plumpton.ac.uk Information: HNC Sportsturf, National Diploma in Amenity Horticulture, National Award (Garden Design), First Diploma in Horticulture. Part time courses: NVQ Level 1; NVQ Level 2 in Landscaping and Sportsturf; NVQ Level 3 Landscaping and Sportsturf; NVQ Level 4. Also available are RHS General and RHS Advanced National Technical and Intermediate National Diploma. Short courses are also available for FEPA spraying and chainsaw.
REASEHEATH	REASEHEATH COLLEGE Nantwich, Cheshire, CW5 6DF Contact: Phil Sharples Tel: 01270 613236 Fax: 01270 625665 Email: phils@reaseheath.ac.uk Web: www.reaseheath.ac.uk Information: (Full: time) National Certificate in Amenity Horticulture, National Diploma in Amenity Horticulture with Sports Turf; Foundation Degree/ Higher National Diploma in Golf Course Management; (Part-time) Higher National Certificate in Golf Course Management; NVQ Levels 2, 3, 4 in Sports Turf plus a wic range of NPTC qualifications.

Training providers guide Available courses guide

This guide is not exhaustive and a full list of GTC approved training providers can be obtained from the GTC. The Greenkeepers Training Committee (GTC) are continually reviewing the approved status of training providers offering greenkeeper training courses. Anyone with a query regarding greenkeeper training should contact the Greenkeeper Training Committee at Aldwark Manor, Aldwark, Alne, York YO61 1UF, Tel: 01347 838640 or visit their website at http://www.the-gtc.co.uk

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	Rodbaston College	RODBASTON COLLEGE Rodbaston College, Rodbaston, Penkridge, Stafford ST19 SPH Contact: John Renshaw Tel: 01785 712209 Fax: 01785 715701 Email: john.renshaw@rodbaston.ac.uk Information: NVQ Amenity Horticulture (Sportsturf) at Levels 1- 4.Part-time and flexible study options. Short Courses: Pesticides, Chainsaws and safe use of equipment.
	SPARSHOLT COLLEGE HAMPSHIRE	SPARSHOLT COLLEGE HAMPSHIRE Sparsholt, Winchester, Hampshire, S021 2NF Contact: Ray Broughton Tel: 01962 776411 Fax: 01962 776587 Email: rbroughton@sparsholt.ac.uk Web: www.sparsholt.ac.uk Information: NVQ Level 2 Greenkeeping Practice, NVQ Level 3 Greenkeeping Supervision, City & Guilds Phase IV Management Studies, National Diplomas in Golf Course Management and Golf Studies,National Certificate in Greenkeeping and Sportsturf Management. GTC: Greenkeeping Certificate, GTC: Certificate in Golf Course Supervision, FEPA: Short courses, Chainsaws. Phase IV and NVQ Level 2 are offered on block release and day release. Full residential facilities available. Sparsholt College provides education and training in the land-based industries.
IGLAN	The College of West Anglia	THE COLLEGE OF WEST ANGLIA Milton Campus Contact: Bob Young Tel: 01223 860701 Email: enquires@col-westanglia.ac.uk Information: The College of West Anglia offers a full range of courses for Greenkeepers including; NVQ Level 2 SportsTurf (Greenkeeping and Groundsmanship), NVQ Level 3 Sports Turf Maintenance. GTC Craft Certificate, GTC Certificate in Golf Course Supervision, TDLB Assessors awards. FEPA, Chain Saws, MO1. Other Courses: National and First Diploma in Horticulture and Garden Design.
	Warwickshire DIVAL LEAMENCTON STAL RECEIVE MORETURE WORKTON WORKTON WORKTON WORKTON WORKTON WORKTON WORKTON WORKEL	WARWICKSHIRE COLLEGE Royal Learnington Spa & Moreton Morrell, Moreton Morrell, Warwick, Warwickshire, CV35 98L Contact: Andrew Turnbull Tel: 01926 318258 Fax: 01926 318300 Email: enquiries@warkscol.ac.uk Web: www.warkscol.ac.uk Information: Greenkeeping Courses: HNC Sports Turf & Golf Course Management (Day Release 2 year Programme also distance learning option); NVQ Level 2 & 3 Day Release and Workbased Option (we come to you); two year ND in Horticulture with Turf Option;BTLJA Certificate in Turf Irrigation. Short Courses: Computing for the Greenkeeper - various; times throughout the year - ring for details. FEPA; Spraying Certification, Chainsaw Certification; TDLB; First Aid. Also RHS General and Diploma, PA1, PA2A and PA6. Professional Certificate/Diploma in Greenkeeping. Advanced National Certificate in Sports Turf Management - 2 year day release.
	Writtle COLLEGE A partner institution of the University of Essex	WRITTLE COLLEGE Chelmsford, Essex, CM1 3RR Contact: Registry Tel: 01245 424200 Fax: 01245 420456 Email: info@writtle.ac.uk Web: www.writtle.ac.uk Information: SPORTS TURF PROGRAMMES NVQ Level 2 - Sports Turf, NVQ Level 3 - Sports Turf Maintenance. NVQ Levels 2 & 3 - Amenity Horticulture. HNC - Sports Turf Science. HND Sports Turf and Golf Course Management. Other Programmes: National Certificate, National Diploma (with Sports Turf doll fourse Sports Turf Science and Management. BSc (Hons) Horticulture, BSc (Hons) Landscape and Amenity Management. MSc Landscape and Amenity Management. NVQ 2 and 3 Service Engineering. First Diploma Agriculture (Mechanisation), C & G Agricultural Mechanics Certificate. FEPA. Chainsaw. Tractor Driving.
	NORTHERN IRELAND	
AND	College a Agriculture. Food Ernstein an Rural Enterprise Greenmant	GREENMOUNT COLLEGE OF AGRICULTURE, FOOD & RURAL ENTERPRISE Antrim, County Antrim, Northern Ireland BT41 4PU Contact: Paul Campbell Tel: 028 9442 6870 Email: paul.campbell@dardni.gov.uk Web: www.greenmount.ac.uk Information: Day release courses to (a) NVQ Level IIGreenkeeping & Sportsturf, (b) NVQ Level III Golf Course Supervision, (c) Advanced National Certificate in Horticulture (sportsturf), (d) Higher National Diploma turf options, (e)/EPE, Health & Safety and a range of short courses.
	REPUBLIC OF IRELAND	
	Cazasc	TEAGASC COLLEGE College of Amenity Horticulture, National Botanic Gardens, Glasnevin, Dublin, DUBLIN 9, Republic of Ireland Contact: Pat Suttle Tel: 00353 18460644 Fax: 00353 18460524 Email: psuttle@kinsealy.teagasc.ie Web: www.teagasc.ie Information: Courses offered: Level 3 Certificate in Greenkeeping Level 3 Certificate in Golf Course Management National Diploma in Horticulture (Greenkeeping Major offered).
	elmwood	ELMWOOD COLLEGE Cupar, Fife, KY15 4JB Contact: Ann Bain Tel: 01334 658842 Fax: 01334 658888 Email: abain@elmwood.ac.uk Web: www.elmwood.ac.uk Information: Full time National Certificate Greenkeeping: Block Release SVQ Level II, SVQ Level III Sportsturf block release and Outreach available, and SVQ Level IV, HNC/D Golf Course Management available as full-time, block release and distance learning. HNC Golf Facility Management, HND Golf Facility Management, PDA for football and cricket available both block release and Outreach. FEPA and COSHH, chainsaws, tree climbing and rescue techniques and Health and Safety short courses also available.
	GOSTA	GOSTA TRAINING LTD 50 Brook Street, Glasgow, G40 2AB Contact: Chris Bothwell Tel: 0141 556 3999 Fax: 0141 556 4999 Email: learn@gostatraining.co.uk Information: SVQ II, III and IV also Modern Apprenticeship in Sportsturf including other options and GTC Training Manual. Attendance Day/Block release from November - March. Distance Learning also available. Short courses with certification include Pesticides, Chainsaw, First Aid, Risk Assessment, Abrasive Wheels, Full Range of Machinery Courses, Manual Handling and Fire Extinguisher training. Consultancy service for Health and Safety Policy development, Site Risk Audits, Machinery Permit to Use system, COSHH and Noise Assessment.
OTLA	LANGSIDE COLLEGE GLASGOW	LANGSIDE COLLEGE Rutherglen Campus, Buchanan Drive, Rutherglen, Glasgow, G73 3PF Contact: Colin S Urquhart Tel: 0141 647 6300 Email: curquhart@langside.ac.uk Information: SVQ, SGA, HNC, HND. Full time and part-time courses in Greenkeeping, Groundsmanship, Golf Course Management, Horticulture, Land and Environment and Applied Ecology. Short courses for land-based industries including Risk Assessment and Pesticides.
U N N	Ø	OATRIDGE COLLEGE Ecclesmachan, By Broxburn, West Lothian, Edinburgh, EH52 6NH Contact: Steve Miller Tel: 01506 864800 Fax: 01506 853373 Email: info@oatridge.ac.uk Web: www.oatridge.ac.uk Information: Full-time National Certificate in Greenkeeping: SVQ Level II and GTC Manual (Day and Block Release): SVQ Level 3 Sportsturf & SVQ Level 3 Fast Track (Day and Block Release) SVQ Level III in Service Engineering , full range of Amenity Horticulture, Landscaping and other land based subjects at HND and HNC, National Certificate and SVQ Levels; Short Course - FEPA, Chainsaw, Forklift, First Aid.
	South AVESUURE	SOUTH AYRSHIRE COUNCIL GREENKEEPING COURSE Chief Executive's Department, Training & Development Centre, 15 Links Road, South Ayrshire Contact: Gordon McGinn Tel: 01292 678861 Fax: 01292 671790 Email: gordon.mcginn@southayrshire.gov.uk Information: SVQ Level 2 Amenity Horticulture: Sportsturf, SVQ Level 3 Amenity Horticulture: Sportsturf and the Modern Aprenticeship in Amenity Horticulture
EN	Coleg Pencoed Pencoed College	PENCOED COLLEGE Pencoed, Bridgend, Cardiff, CF35 5LG Contact: Paul Discombe or John Sullivan Tel: 01656 302672 Fax: 01656 302601 Email: pfdiscombe@bridgend.ac.uk Web: www.bridgend.ac.uk Information: NVQ Sportsturf Level 2-3, HNC/HND Turf Management. National Certificate/Advanced National Certificate - Sportsturf Management. Short courses: PA1, PA2 PA6a and Chainsaws. NCH National Certificate in Horticulture. Advanced National Certificate in Horticulture.
MA	Coleg Garddwriaeth Cymru Weish College of Horticulture	WELSH COLLEGE OF HORTICULTURE Northop Mold, Flintshire CH7 6AA Contact: Mr Gareth Philips Tel: 01352 841034 Fax: 01352 841031 Email: gareth.philips@wcoh.ac.uk Web: www.wcoh.ac.uk Information: Full-time - Highr National Diploma in Turf Management. Part-time - Day release Higher National Certificate in Turf Management. Block week - NVQ Amenity Sportsturf Levels 2 -3. Briefing Days - NVQ Level 4, TDLB Assessor Courses A1, Z1. Day Courses - FEPA, Chainsaw Certification, First Aid, CIEH.

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Disease Analysis - How can it work for you?

Dr Kate Entwistle discusses the importance of accurate disease analysis.

There are three main reasons why turf disease analysis is important:

- 1. Accurate and effective management relies on knowing the cause of the problem.
- Identification of the cause will enable appropriate fungicide selection (if it are needed) 2.
- 3. The cause of the problem may not be related to pest or disease activity

Diagnosing the exact cause of damage to amenity grasses can be both challenging and rewarding. Your experience as a turf manager allows many pest and disease problems to be confidently and correctly identified on the course, but there are occasions when confirmation of a tentative identification is needed, or diagnosis is uncertain and a laboratory examination of the problem can be helpful.

INVERTEBRATE PEST, FUNGAL DISEASE OR DISORDER?

Turfgrasses can be damaged by invertebrate pests and by fungal disease but the symptoms that develop on the sward, especially during the early stages of infection, can sometimes be guite similar for both.

In addition, certain disorders (problems not caused by a living organism but by environmental conditions or maintenance problems, e.g. water repellent rootzones, nutrient imbalance, scorch) can also produce symptoms on the turf surface that can resemble both invertebrate pest damage and disease problems.

Some of the terms generally used to describe symptoms of unhealthy turf, are given in the left hand column of Table 1 with descriptions of these terms below. The table gives an indication of when these terms can be used to describe fungal disease problems, invertebrate pest damage and disorders as they develop on amenity turfgrasses.

The '?' symbol in the table means that, for example, certain invertebrate pests can cause spots to develop on some host plants but these symptoms are not common symptoms on amenity turf.



Table 1

disorder on turfgrasses.

	FUNGI	INVERTEBRATES	DISOR
Chlorosis	yes	yes	yes
Reddening	yes	yes	ye
Etiolation	yes	?	yes
Necrosis	yes	yes	yes
Watersoaking	yes	no	?

Terms used to describe the symptoms of disease, damage and

Watersoaking	yes	110	
Wilting	yes	yes	yes
Spots	yes	?	yes
Pustules	yes	no	no
Reduced vigour	yes	yes	yes
Dieback	yes	yes	yes

Chlorosis: Fading to pale green/yellow; Reddening: Of entire leaf or edge; Etiolation: Yellowing/whitening of leaf + lengthening of stem; Necrosis: Death, accompanied by darkening or discoloration; Watersoaking: Plant tissues that are wet or translucent; Wilting: Loss of turgidity; Spots: Limited chlorotic/necrotic circular-oval areas on leaf; Pustules: Blister-like, usually erumpent; Reduced vigour: Reduced healthy growth; Dieback: Progressive death of leaves/roots from tip backward

Invertebrate pest problems can, on the whole, be confidently identified on the course if you know where to look for the potential cause of the damage. Depending on the time of the year, the larvae of certain flies or beetles will be found at different depths in the rootzone and the larvae of the frit fly will only be present within the plant itself.

The latter can be quite difficult to see due to their pale colour and small size (approximately 2 mm long) but a x10 hand lens should enable you to see the larvae and also the brown pupae of these flies that also develop between the stem tissues.

In addition, moth caterpillars (cutworms) have been found on courses across the UK but, given the size of these larvae (35-50 mm long), they can be relatively quickly identified (at least to a basic level) using reference textbooks.

With potential disease problems, the process of identification is not as straightforward. Although the majority of diseases on cool-season turfgrasses are known to be caused by fungi, the fungi themselves are microscopic and therefore you are not able to see them in the field.

▲ Figure 1

DER

The exceptions to this are the fruiting bodies or mushrooms of certain basidiomycete fungi that can be seen at certain times of the year and the masses of aerial mycelium that may develop on the sward during conditions of ideal growth. Individual strands of this mycelium are microscopic.

What you will be able to observe on the damaged turf are the symptoms that develop following fungal infection. To complicate the diagnosis of disease problems, the expression of the symptoms will vary depending on the grass affected, the composition of the sward, the height of cut and local environmental conditions.





Fungi produce several structures that can be clearly seen using a microscope, for example the mycelium (the 'body' of the fungus), spores (reproductive propagules), spore producing structures and resting structures.

The spores of the fungus can be regarded as their fingerprint since no two fungi produce exactly the same spore size, shape, colour or structure. Under high magnification (x400 or x1000), the spores of the fungi can be recognised and a name given to the fungus that is present.

Not all fungi produce spores and an example of those that do not are the Rhizoctonia species of fungi. Their identification is therefore based on other characteristics. It cannot be over emphasised that the presence of a fungus on an affected turf does not necessarily mean that it is causing the damage.

All swards will be covered by and all rootzones full of, a wide diversity of microorganisms (including fungi) which starts to build up from day one following the construction of any area. Fungal identification and disease identification are two separate things but experience allows any relationship between these two to be confirmed.

Disease identification is based partly on the ability to recognise the characteristics of the fungi that are present and partly on the ability and experience of the pathologist to interpret the findings in the context of



▲ Figure 3

what is happening on the sward. Therefore, what you get out of any turf analysis depends largely on what you, as the turf manager, put in.

SENDING THE RIGHT SAMPLE IS IMPORTANT

Diagnosis of the cause of any damage is essential if effective management is to be realised. In addition, if you want to use plant protection products as part of your integrated management approach, it is necessary that you identify the problem correctly.

If a problem develops on the turf and a sample of dead material is sent to a laboratory for analysis, all that is likely to be found are saprophytic secondary infections that are developing on the decaying plant material.

The best way to ensure that the pathologist has the material they need to identify the cause of the problem, is to send a sample of the turf to the laboratory that has been taken from the edge of the affected area, not the centre.

The reason for this is that most fungal disease problems will start from a central point and develop radially outwards. Since the centre of the affected area was the first part to be infected, it follows that this part of the sward will be the most heavily decayed by secondary, saprophytic infections.

As the disease progresses through the sward, it will pass in to unaffected plants around the edge of the affected area. It is these recently infected plants that are of most use in determining the cause of the damage. If you are in any doubt as to the best way of taking a turf sample for analysis of the problem, speak to the pathologist and they will be able to advise you.

DOES SIZE MATTER?

The size of the turf sample is important for several reasons. A large, hole cutter sized sample will show not only the sward composition but also the grasses in the sward that are affected and the symptoms of the infection on those plants (Figure 1).

Hollow tine cores and small pieces of turf pulled from the sward are not useful for disease identification (Figure 2). There will be very few intact plants and most plants will be separated from the roots when sampled in this way.