



any detrimental long-term consequences.

- Similarly as already mentioned above with topdressings. Indeed, it is prudent, if you are intending to deep scarify on a dressing-based rootzone, to remove a heavy application of top-dressing from the budget showing a saving of at least £1000 and simply recycle the rootzone which is brought to the surface by the scarifier. Make the point, in writing that this saving can be set against the cost for hiring a machine to do the work. (See photo)

- The cost of dressings for tees and fairway divotting may be reduced by sourcing local materials and mixing and screening on site. This could be investigated and costed out, as could the use of your own homemade compost.

- Spot treating or individually treating turf areas for weeds, pests, diseases and wetting agent for dry patch can reduce usage dramatically. One has to be alert and responsive but it is more efficient and less expensive if budget reductions are required. Blanket

the course, as such, they should be considered as a last resort. It is therefore most important that managers are in a position to justify the labour requirement as they will surely be asked to do.

Managers should carry out a straightforward exercise in totalling man-hours currently available. This is a simple matter of multiplying the number of men by the number of days they work per annum and the hours they work each day. Remember that they do not work during rest breaks. This will give a total man-hours figure per annum. It is simpler if weekend overtime is justified as a separate item.

It is then a case of listing each area of the course and all operations carried out. It is easier to do this in two separate blocks of April to September and October to March as the work carried out in these periods is quite different. For each job state the man-hours it takes and multiply it by the number of times it is done.

Eg. Triplex mowing greens (April to September) = 1 man x 3.5 hours x 120 times = 420 man-hours.

Topdressing greens (April to September) = 3 men x 6 hours x 6 times = 108 man-hours

Add the totals for the two six month periods together to get the total annual man-hours required to maintain the course.

The result of this exercise should clearly show that all staff are gainfully employed and any cuts will

have severe consequences for the course. Having these facts and figures to hand will greatly strengthen your position in any negotiations on staffing levels.

Weekly time sheets are also very useful in justifying these figures and clearly showing the work carried out. Staff should be encouraged to see the benefit of having a record of the work they do.

It is also prudent to discuss with the staff any financial pressure and remind them that their importance to the club will be all the more apparent if they are multi-skilled and fully professional in their attitude. Taking on new skills and training will increase their value and their work opportunities for the future.

### Materials

Material purchases can be an area where greenkeepers tend to follow what for them has been a successful formula year on year and there is a reluctance to change greatly from it. This is the entirely understandable 'if it ain't broke, don't fix it' syndrome. For this reason it tends to be the last area to look for savings, apart from ensuring you get quality products at the best price from suppliers. However, areas to look at might be:

- Reduction of the intensity of an overseeding programme, cutting down to half rate or missing one year altogether will slow up improvements but should not have

**Topdressing makes up the major part of the greens budget. Reduced costs here will slow down progress on soil exchange and improved surface drainage targets, but will not cause lasting damage as long as we return to optimum dressing quantities when funds become available**



applications where they may not be strictly necessary can be very wasteful of resources and money.

- Fertiliser rates may be historic and therefore it could be worthwhile suggesting experimentation with reduced rates as a trial. High fertiliser rates on large areas such as fairways eat up the cash. It is important to be sure that this is strictly necessary.

Reducing excessive growth may also have knock-on effects in reducing fuel bills, machinery wear, fungicide requirement and the need for expenditure on PGR's.

### Machinery

In difficult financial times the machinery replacement budget is often the first to be hit. Greenkeepers are asked to make machinery last just one more year but this can be costly in repairs and downtime and can lead to a serious decline in the fleet, which can prove even more expensive to rectify the following year.

- Dealers should be asked for competitive tenders for hire purchase, lease hire or contract hire as these are essential in offering the club an alternative funding strategy.

- Rather than replacing machines, which are used less frequently, it may prove cheaper simply to hire them until funds for purchase become available. Another alternative might be to purchase such machines by agreement with one or two other clubs in the local area for multi-site use.

- Suppliers should also be asked for all figures related to repairs and running costs as this should be a serious consideration, more especially as fuel costs continue to rise.

As an example, where funds simply are not available to replace a ride-on fairway mower, which needs extensive costly repair, then it might be worthwhile costing out a tractor-mounted hydraulic, or set of gangs towed by a tractor which is currently standing idle most of the summer.

While these machines are not as efficient as ride-on mowers, they are much cheaper both to purchase and to run and produce a good, and in some cases better finish.

They are also much easier and cheaper to maintain and if cash flow is the problem they may fill a gap, which your club may appreciate. Such alternatives, while not ideal, may greatly reduce the necessity to look for savings elsewhere in the budget such as staffing levels.

### Course Improvements programme

Course improvements eg new tees, tree planting schemes or bunker refurbishment should not take funding priority over basic maintenance of the main playing surfaces. It is not for Course Managers to decide this but it is important to make the case so that all are aware of the consequences of building new tees, which you then do not have the resources to maintain properly. Some may not see it this way but they may thank you later for pointing it out even though it may seem obvious to you. Spending time and money on a conservatory when the house is falling down is not good business.

Serious budget reductions can be made by doing course improvements in-house, as opposed to contracting out. The cost of training staff and hiring machines or purchasing used machines is soon recouped with construction works coming in at a half to two-thirds less than the contracted out price. There is the additional benefit that staff derive greater satisfaction from learning and practising new skills and completing a whole job rather than tidying up behind others.

# Instrata

## contact

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**Don't forget**

Staff are the main asset in any organisation. You can have the best school facilities in the world but if you do not have enough well-trained, qualified teachers the kids will learn nothing, so budget reductions should be aimed at those areas which will least affect the course and have minimal long-term detriment.

If asked to produce 10% savings, aim to produce 15% and offer several ways of achieving this.

Be clear, by explaining in writing, the consequences of any proposed reduction and in stating the need to return to optimum budget levels as funds become available.

Matching budgets to income can be a stimulating, creative and rewarding endeavour. Remain positive. Some of the best quality courses have historically been run on a shoestring. This could be why they are some of the best quality courses.

**Kerran Daly MG, is Senior Consultant for Greensward Sports Consultancy**

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**in one!**

# Oh Carolina!



Rob Clare is the former Course Manager at Skipton Golf Club and current Course Manager at Brough Golf Club in Humberside. In July 2010 he graduated from Myerscough College as top student on the Turf Science course and was nominated to attend Jacobsen's Future Turf Managers programme in the USA. In this short article he describes his trip to North Carolina.

**Back in the summer of 2010, I graduated from Myerscough College with a Foundation Degree in Turf Science. It had been a challenging three years, as I had been a part-time student whilst fulfilling my role as head greenkeeper of Skipton Golf Club. A few weeks before graduation, I received a letter telling me I had won the Ransomes Jacobsen Cup for best part time student in my cohort.**

I was really taken aback and honoured to win such a prestigious award. I imagined the award took the shape of a trophy in recognition of the work I had put in, so it was with great delight that I learned that I'd been nominated for an all-

expenses-paid trip to the USA. I was off to Charlotte in North Carolina on Jacobsen's Future Turf Managers programme and I was privileged to be the first European student to be invited.

I was going to their head office and manufacturing facility where I would meet up with 27 students from American colleges who had been recommended by their professors as being top level candidates with great prospects of becoming future leaders in the turf care industry. Since its inception back in the 1970s, over 700 students have participated in the programme.

So, in the middle of May I flew out to America where I was to experience a fantastic four day programme,

which was both educational and fun. We worked hard throughout, starting each day at 6.30am with breakfast then onto a coach for the day's scheduled events.

We began with a tour of the facilities at the two Jacobsen plants in Charlotte, experiencing the production process of mowers and utility vehicles from raw steel and component parts to the finished product.

This was followed by classroom presentations by Roch Gaussoin, Professor of Horticulture at the University of Nebraska and Steve Randall, Senior Manager, Chapter Outreach at the GCSAA.

After lunch we re-boarded the bus for the short drive to the Quail Hollow Club, where Course Super-



Rob receives his students at Sage Valley certificate





Some of the group at Jacobsen's



Ride and drives at Quail Hollow Club

intendent, Jeff Kent, explained how he prepared for the recently completed Wells Fargo PGA Tour Championship and the reinstatement he was doing following the tournament. We were then able to ride and drive a selection of Jacobsen equipment on a dedicated area of the course.

In the evening we were taken to a local kart racing track for rest and relaxation, but in America everything is competitive, so it was a great night racing karts in teams in a Le Mans type endurance race.

The following day we again boarded the bus immediately after breakfast and drove a couple of hours south into South Carolina, for a visit to Sage Valley Golf Club in Graniteville.

The story goes that the owner was refused membership just over the state line at Augusta National, so having made his fortune as the builder of virtually every Walmart store in the USA, he decided to construct his own course that would rival its illustrious neighbour.

The course at Sage Valley is incredible and we were fortunate to walk the course with Chuck Green, the highly entertaining Superintendent at this ultra-exclusive private members' club.

He doesn't allow rotary mowers anywhere on the course, so the rough is mown with cylinder mowers and as you would expect, it's immaculate as is the whole complex.

After a buffet lunch and tour of his greenkeeping facility we got



back on the coach heading for the state capitol, Columbia.

Here we visited to the sports facilities at the University of South Carolina. They are known as the Gamecocks and we toured the new baseball stadium and the hugely impressive 80,000-seat football stadium with Clark Cox, Field Manager. He explained the techniques he uses to maintain the different playing surfaces at both venues.

We spent the early evening at a local bistro in Columbia, before returning to the hotel in Charlotte. Some of the group went to bed and some didn't!

The final day saw a later start with a mid-morning brunch and presentation of certificates of atten-

dance and a complimentary one-year subscription to the GCSAA, courtesy of Jacobsen. Jacobsen's President, Dan Wilkinson, presented the certificates and in a closing speech thanked us for our attendance and wished us well for the future.

Overall it was a fantastic experience; we were looked after extremely well by all of the Jacobsen staff and although we worked hard, Jacobsen also made sure we were well entertained in the evenings.

I would like to thank Jacobsen for the great opportunity this trip provided, it was a real learning experience and good friends were made. It certainly made the last three years worth all the hard work!



# Tank-mixing

Graham Paul offers another opportunity to earn valuable BASIS points

**To mix, or not to mix – that is the question. In this article we shall consider the legal position regarding the practice of tank-mixing chemical pesticides and look at why we may need to adopt this strategy in the management of amenity areas.**

The Amenity industry has traditionally been a haven for 'pure' chemical sprays; one product to do one job. The complication of combining two chemicals together to get a more complete result has not been a priority for most Groundsmen in the past. However, in the agricultural market it has been a different story. Intensively farmed arable crops demand a variety of inputs to control weeds pests and diseases whilst the cost in fuel, manpower and the lost yield caused by disturbing the crop with machinery need to be kept to a minimum to maximise profit, so now is the time to consider this working practice more seriously. The question often asked is; are you legally allowed to tank-mix two or more approved pesticides together? When the Control of Pesticides Regulations were first drawn up and agreed by Parliament in 1986, the rules regarding tank-mixing of approved products appeared to be stricter than they are today. Under Schedule 3 of the original regulations, section 2 declared:

"No person shall combine or mix for use two or more pesticides except in accordance with the conditions of the approvals given in relation to those pesticides."

On paper this looked 'cut-and-dried' and was interpreted by many as meaning; if a mixture was not officially sanctioned ie. on the label or on a list of approved mixes, then it was outlawed. The regulations were updated in 1997 by The Control of Pesticides (Amendment) Regulations 1997 which made the position a bit clearer:

"No person shall combine or mix for use two or more pesticides unless —

(a) all of the conditions of approval given in relation to each of those pesticides, and

(b) the labelling of the container in which each of those pesticides

has been sold, supplied or otherwise marketed to that person, can be complied with."

The answer to the question; "Are you legally allowed to mix chemicals?" is "YES you are". Tank mixing, when referring to a distributor or contractor backed tank-mix recommendation, is perfectly legal provided all the label requirements are followed for the tank-mix constituents and partner products. This is called a 'convenience tank-mix' and allows a reduction in the number of spray operations.

However, if a manufacturer or approval holder wishes to claim enhanced activity or biological compatibility from a specific tank-mix (called a 'positive tank-mix'), this must be demonstrated to the Chemical Regulation Directorate (CRD) to be allowed to be part of the label claims. This is not required when referring to a distributor or contractor backed tank-mix that does not feature on the product label.

There are separate rules governing the mixing of anticholinesterase compounds:

"No person shall combine or mix for use two or more pesticides which are anticholinesterase compounds unless such a mixture is expressly permitted by the conditions of the approval given in relation to at least one of those pesticides or by the labelling of the container in which at least one of those pesticides has been sold, supplied or otherwise marketed to that person."

In order to stay legal when tank-mixing it is important to stick to the following guidelines:

- Check with your supplier that the proposed mixture is suitable for the intended use. A supplier offering to support a mix should have tested it and will know if there are any compatibility issues or effects on the performance of the products.

- Note that when mixing two or more pesticides in a tank-mix all conditions of approval on all of the product labels and safety data sheets must be complied with.

- If any product in the mix is subject to a LERAP requirement, then this applies to the tank-mix as well.

- Two or more anticholinesterase compounds should not be mixed unless such a mixture is expressly permitted by the conditions of the regulatory approval on at least one of the products.

Once all ingredients have been carefully mixed the tank must be continuously agitated and the mixture applied immediately. It must not be held as a mixture in the tank for longer than necessary as there is a risk of components reacting with one another or precipitating out of solution and blocking the filters and pipe work in the sprayer.

So why do we need to consider a change to the way chemicals are applied in the Amenity sector? The main reasons are:

- To reduce the chance of fungicides developing resistance – many of the new products that contain a single active ingredient have been assessed by Government scientists as having a greater risk of encouraging the development of resistant strains of fungal pathogens. (See Table 1 below)

- To improve the effectiveness of fungicide applications – increasing the reliability of control and in some cases reducing the overall cost involved.

- To increase the weed spectrum of selective herbicides sprays so that the job can be completed with one application.

- To improve the efficiency of spray application by reducing the frequency of operations.

The practice of tank-mixing is especially important in producing a strategy for control of fungal diseases of turf. Many of the new active ingredients being introduced are likely to develop resistance if used too frequently as a single product. The table below shows the data used to assess the likelihood of a single active ingredient encouraging the development of resistant strains of fungi. The work is carried out by the Government sponsored 'Fungicide Resistance Action Committee' (FRAC)

In high disease situations, where the infection is already established within the plant, the pathogen will continue to express itself through leaf symptoms even after the application of a fungicide and they





of Iprodione to control Anthracnose is a relatively recent addition to the Chipco Green label. This trial demonstrated excellent control of the foliar blight stage of the disease, especially when applied with 'P-Kursor'. The results were particularly impressive, as the Chipco Green in the mix was used at 10L/ha (half the normal rate) - a factor that has implications for cost savings as well as in reducing the impact of chemicals in the environment. The excellent performance of this treatment is attributed in part to the beneficial effects of P-Kursor in encouraging rapid recovery of the health of the grass plants after the fungicide has cured the disease.

The third area where tank-mixing can be extremely useful is in the control of weeds in turf with selective herbicides. The variability of weeds present in turf combined with the diverse growing conditions such as climate and soil type; make it difficult for manufacturers to come up with a product that suits all weeds in all situations. A sports pitch with deep-rooted weeds such as thistle or docks might benefit from an application with extra 2,4-D or MCPA to improve the effectiveness against these species.

Selective weedkillers may also benefit from the addition of a liquid fertiliser to give a weed and feed application. This can sometimes be accomplished by the addition of a liquid fertiliser product or a soluble fertiliser such as Urea to the mix. If using a soluble product, one should ensure that the fertiliser is completely dissolved before adding the herbicide. Weed and feed can often give faster, more complete weed control than using a selective herbicide on its own.

As a general rule, do not mix selective herbicides with fungicides, as the wetting systems in the latter are very powerful and can produce severe scorch in the grass. Turf managers should seek advice on this from a technically qualified supplier before mixing selective herbicides.

will continue until the life cycle has been arrested. Mixing a product that has curative properties with a fast acting systemic fungicide can provide an answer in this situation.

Many fungicide products now contain two or more active ingredients to give a broader spectrum of control with reduced risk of resistance eg. 'Astute', 'Dedicate', 'Headway' and 'Instrata'. However, tank-mixing gives complete freedom and flexibility to choose exactly the right treatment for the situation in hand – providing it is backed by reliable recommendations from a technically competent supplier or contractor.

Research has shown that the effectiveness of some fungicide applications can be improved by adding growth stimulants to the spray mix. These can work alongside the fungicide, encouraging rapid healing once the disease has been treated. In such a trial, conducted by the (STRI) the fungicide iprodione (Chipco Green) was applied with the 'P-Kursor', a product designed to promote plant health and support the plant's natural defences.

The recommendation for the use



## SELF ASSESSMENT

Use the questions below to check your understanding of this topic. Readers can claim two BASIS points if the questions are answered correctly!

Circle the correct answer(s)

1) When did the Control of Pesticides Regulations first appear on the statute books?

- a) 1985
- b) 1997
- c) 1986
- d) 1984

2) In the amended Regulations, which group of chemicals is governed by special regulations when it comes to tank-mixing?

- a) Anti-coagulant compounds
- b) Anticholinesterase compounds
- c) Antifoaming products
- d) Anti-cholesterol agents

3) If a pesticide manufacturer or approval holder wishes to claim enhanced activity from a specific tank-mix involving one or more of their products they must provide data to which of the following organisations?

- a) The British Crop Protection Council
- b) The Environment Agency
- c) The Chemical Regulation Directorate
- d) Department for Environment Food & Rural Affairs

4) In the trial data for the Anthracnose tank-mix trial, how long were the results recorded after the initial treatment?

- a) 3 months
- b) 2 months
- c) 34 days
- d) 83 days

5) As a general rule when tank-mixing selective herbicides, which type of product should be avoided to prevent problems with scorching?

- a) Insecticides
- b) Fungicides
- c) Growth Regulators
- d) Liquid Fertilisers

Active Ingredient	FRAC Code	Fungicide Group	Risk of Resistance	Mobility	Products
Azoxystrobin	11	QoI (Strobilurin)	High	XMS	Heritage
Fludioxonil	12	Phenylpyrrole	Moderate	C	Medallion
Iprodione	2	Dicarboximide	Moderate	C/LS	Chipco Green
Myclobutanil	3	DMI	Moderate	XMS	Masalon
Propiconazole	28	DMI	Moderate	XMS	Banner Maxx
Pyraclostrobin	11	QoI (Strobilurin)	High	LS	Insignia,
Mascot Eland					
Trifloxystrobin	11	QoI (Strobilurin)	High	LS	Scorpio

### NOTES:

• FRAC (Fungicide Resistance Action Committee) codes indicate the biochemical target site of action. Products with the same code, target the same biochemical site and are therefore cross resistance could occur

• Fungicide Group: Products are grouped together by their mode of action against the fungi. DMI = demethylation Inhibitor; QoI = 'Quinone outer Inhibitor'

• Mobility: C = Contact (= protectant) fungicide; LS = locally systemic; XMS = xylem-mobile systemic (sometimes called 'acropetal penetrant')

Table 1 - FUNGICIDE PRODUCTS USED IN AMENITY – CONTAINING ONLY ONE ACTIVE INGREDIENT

# A QUICK GUIDE TO...

## SUCCESSFUL OVERSEEDING

To ensure that you get the most from your overseeding programme there are a number of issues to take on board

### 1. Planning

Make time for your operation. Realistically evaluate what you want to achieve and draw up a schedule of how to get there. Included in this schedule should be comprehensive evaluation throughout the year after application. Part of your research should include that you are buying the correct mixture, species and variety of grasses for your situation.

### 2. Buy the best you can afford

As with all things in life not all grasses are the same, within any species there are different varieties known as cultivars. In trials some cultivars perform better than others when assessed for traits such as wear tolerance, recovery, shoot density etc.

Know the traits that are important to you and research the best cultivars or mixture of cultivars that suit your situation.

You will pay a premium for a mixture of the better performing cultivars, but you wouldn't expect to pay Ford Mondeo prices for a Lamborghini, and the same is true of grass seed.

### 3. Timing

Throw away the general rule of thumb for overseeding, that it is best carried out in early Autumn.

This can work at any time the soil temperature is favourable. If you have a comprehensive, efficient irrigation supply the warmer soil and air temperatures the better. Alternatively, seeding in advance of warm weather or moisture allows utilising quieter times and waiting patiently for germination.

### 4. Application - Ensure good seed soil contact

Having bought a bag of quality grass seed you want to make sure that you get good



germination in order to take advantage of all the desirable traits you have selected it for.

There is no right or wrong way to create the correct environment for germination, seeding into linear grooves, hollow cores or tine holes can all work, the most important thing is to ensure that the seed has good contact with the soil.

In order to germinate a seed has to take in moisture through its permeable outer coating, as the seeds swell a chemical reaction takes place and germination is initiated. It is vital that the seed remains moist throughout this process in order for the process to take place as quickly and as smoothly as possible.

Fluctuation in available moisture can hinder the process and as with all plants, grass seedlings that have a stressful germination are less likely to ever be as healthy as plants that germinate under most favourable conditions.

Seed that is left on the surface risks being dried out and becoming unviable, similarly seed will not germinate well in thatch and seed that does germinate will be weak and won't survive long, because it hasn't rooted into a good growing medium.

### 5. Work to seed at the required depth

It is important that seed is not sown too deeply. A seed only has a small store of energy for the emerging plant to use during the germination period.

The emerging shoot, called a plumule, needs to be able to push through the soil surface and begin the process of

photosynthesis as quickly as possible, to start processing it owns energy and establishing. If a seed is sown too deep then the plumule has a long way to travel to the surface and risks running out of energy before it gets there. Ask your seed rep what depth you should be aiming to sow your chosen mixture at.

### 6. Watering

Assuming adequate soil temperatures and good seed soil contact the seedlings of some species can appear within seven days although generally 14 -21 days is more likely.

During this period irrigation is really the only controllable resource you have. Ideally the surface should be permanently damp and as soon as the surface feels dry and no material particles stick to your hand the surface should be covered with a light sprinkling of water.

### 7. Establishment

When seedlings start to appear and the sward is forming, applications of water should become less frequent and heavier, allowing drying time between applications in order to prevent damping off.

With regards to first cut it is obviously an advantage to raise the height of cut especially for bent grasses, this need not be as drastic as you think and many newer cultivars of bent grass can take a first cut as low as 7-9mm, for ryegrasses on tees 10-12mm is fine.





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# Back in time

## to this month in... 1972

Do you have any old artifacts from days gone-by?

Perhaps your grandad was a greenkeeper and has something stored away in the loft? Maybe an Association tie, or a journal? If so we would love to hear from you. We are particularly interested in the early part of the last century, but anything you have would be worth considering for future editions of this article.

Please contact us on 01347 833800 or email Elliott Small, BIGGA Past Chairman,

elliott.edna@hotmail.co.uk

*Back in time* looks back at cuttings of greenkeeping news from days gone-by. 2012 will be a landmark year, as it will be the centenary of Greenkeeping Associations, as well as 25 years since BIGGA was formed. Each month we will look back at the current month, but in a different year, from over the last hundred. This month we travel back to September 1972.

## The British Golf Greenkeeper

The September 1972 issue of *The British Golf Greenkeeper*, the official magazine of the British Golf Greenkeepers Association, edited by Fred Hawtree, contained an article (below) from the Chipman Chemical Company on The Treatment of Fungal Diseases.

Included in the advice was "By knowing the conditions which fungi find most desirable it is possible to produce a non-conducive environment by good cultural turf management practices."

The tractor shown on the cover is a Howard Bolene 1477, which is being seen towing a barge on the Grand Union Canal.



SEPTEMBER 1972

5p

### The treatment of Fungal Diseases

*The CHIPMAN CHEMICAL COMPANY* condenses much useful advice on avoiding and treating fungal disease.

Late Summer and Autumn marks the opening of the season for unvisited and unwanted guests of British golf greens. These are the fungal diseases and the reluctant hosts are our very hardworking turf grasses. Fungi are parasitic and being unable to synthesize organic food, attack the plant material of their host, penetrating the cell wall or entering wounds or natural openings and leaving the characteristic symptoms of disease in the grass plant when the infected cells die.

Some common turf fungi depend solely upon living grasses for support, whereas others are able to continue to survive after the host has died, living on the dead plant material. Both can produce thousands of spores capable of infecting a fresh host. In addition some fungi can form a 'resting body' which is able to persist for many years, even in unsuitable conditions and carry over disease from one year to the next. There are therefore many sources of infection, and if allowed to develop and spread these fungi can cause severe damage.

By knowing the conditions which fungi find most desirable it is possible to produce a non-conducive environment by good cultural turf management practices. It is significant that the conditions which discourage fungi and also those which most favour the healthy growth of fine grasses. Worthwhile measures can be summarised as follows:-

*Aim to reduce surface moisture*

- Improve drainage where necessary.
- Carry out spiking, slitting, raking, mowing regularly and at the optimum time.
- Switch dew from grass.
- Remove any barriers to the flow of air across the turf.
- Reduce shade.
- Avoid leaving grass long in winter.
- Avoid smothering turf with top dressings.

*Maintain fertility and acidity*

- Use balanced fertilisers at the correct time.
- Avoid the late use of fertilisers high in nitrogen as compared with other elements.

*Avoid mechanical damage*

- Remember that spores enter through the wounds.

HON. EDITOR: F. W.

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