



Getting the basics right

Laurence Pithie MG looks at what is required to ensure your course is as good as it can be

During the last two decades, advances in turf technology have been considerable along with those in equipment, irrigation systems, tools and products.

This has enabled Course Managers to maintain and present courses at a level much higher than in the past, but only when the basic fundamentals of turfgrass management have been followed.

It is important to remember that these new technologies are there to help, they are not a substitute. Golfer expectations have also increased, largely as a result of improved playing conditions and standards of presentation.

However, due to the economic woes that have affected the industry and beyond, Course Managers are now challenged with providing the

same quality but often with lower levels of resource, namely labour, equipment and materials. No-one likes to see standards fall and the key is not necessarily to work harder and for longer hours but to work smarter. There is a need to understand the key challenges faced when determining work programmes and implementing basic practices. It is all about maintaining a balance between sound agronomics verses playability.

From the Course Manager's perspective, creating a good growing environment is fundamental to the other aspects which include a healthy soil, stress free turf, sound cultural practices, adequate resources and the customer's understanding. Golfers' priorities are more likely to be firm and fast greens, all year round playability,

minimal disruption to play, minimal penal rough and good course definition and presentation. The other major part of this 'balancing' act is budget constraints, therefore all the more reason to get the basics in place and use new technologies to help achieve the desired objectives.

So what are the key fundamentals in turfgrass management? They can be split into four distinct areas, namely;

- Growing Environment
- Nutrient Supply
- Water Management
- Mowing

Growing Environment

The practice of good greenkeeping is to work with the existing environ-



An open environment, ideal for healthy turf



MAIN ABOVE: Foliar feed and marker dye application

INSET ABOVE: Mowing green with brush attachment produces a finer cut quality

INSET LEFT: Light but regular top dressing is essential for thatch control

ment, not against it. Environmental aspects include sunlight, air movement, soil type, grass species and natural vegetation.

The three basic requirements for plant life are air, light and water and it is well documented that grass is a sun loving plant. Grass also accounts for 20% of all plant life on earth. Sunlight enables the turf to photosynthesise and develop energy for growth.

When turf is in deep shade, grasses have smaller leaves and less density which increases their susceptibility to wear, disease and other stresses, therefore a key requirement is to reduce shade as much as possible.

An open environment with good air movement is another critical factor since this helps to dry and cool the surface and reduces the level of humidity, which is a key factor in reducing the risk of disease attack. This, in turn, helps to reduce fungicide costs.

Since trees always win when competing for sunlight, water and nutrients, every effort needs to be made to limit their effect on and around the greens and to maximise air movement.

Soil types are diverse and will vary from course to course, ranging from clay to sand and possibly even landfill. Sandy soils dry out faster and can succumb to high heat stress and increased root damage, whereas clay soils have poor permeability, are slow to drain and easily compactable. Each needs to be managed differently but to achieve a common goal for healthy growth.

Grasses too are likely to be diverse. Each species present in a given sward is there because the environmental factors favour it to be so. If the desire is to change to a more sustainable species then it is the environment that needs to change in order for those grasses to out compete those currently present.

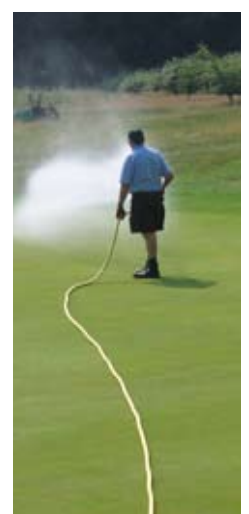
Fescues, for example, will not

flourish when fertility levels are high and drainage is poor. Therefore when contemplating any change to the more desirable species, a thorough understanding of what is involved is required and that means good planning, good communication and a fair degree of patience and understanding.

Nutrient Supply

Plants require turf nutrients to promote healthy growth, being split into two categories of Macronutrients & Micronutrients.

The former include Nitrogen, Phosphate and Potassium, followed by Sulphur, Calcium and Magnesium whereas the latter include less well known elements such as Boron, Iron and Manganese but in minute quantities. Individual plant needs will vary depending upon grass species, soil type, mowing height & so on. Turf, just like humans require a balanced diet,



ABOVE: Hand watering dry areas to ensure even coverage



therefore knowing what is in the root-zone from analysing soil is an important factor.

Plant nutrition is all about supplying the plant with relative proportions and ratios relative to individual needs. A lack of nutrition leads to poor turf health and a lack of vigour and density of the sward. Moss, dollar spot and anthracnose can also become more prevalent where low fertility exists.

Over-feeding can be even more harmful to turf, leading to a build-up of organic matter and thatch. This has a direct and negative impact on surface quality, reduced surface drainage, shallower rooting and an increased risk of varying turf diseases.

A feeding programme based on foliar or liquid feeds and tank mixes is more effective and less expensive, using a variety of products and amendments such as seaweed extracts and humic acids.

There is no set feeding programme or amount of each nutrient to be applied since there are too many mitigating factors. Recommended amounts of NPK to be applied should act only as a guide and in line with both soil analysis and desired objectives. It is an old saying that grass does not grow on an analysis sheet but it is also foolish to ignore the facts.

Water Management

This relates mainly to irrigation and drainage; namely the supply and removal of water to and from the playing surface. Aeration can

be added to this, since this essential cultural practice helps with the internal movement of water as well as other agronomic benefits. Water is an essential component of photosynthesis along with oxygen and sunlight.

It is used for the absorption and transportation of plant nutrients and also acts as a cooling agent by regulating temperature. Water also maintains leaves in a turgid state and if depleted then turf wilt occurs. At least 25mm is lost through evapo-transpiration when conditions become hot and dry and this amount of loss needs to be replaced by irrigation to maintain good turf health.

During prolonged spells of dry weather, good water management requires a 'hands-on' approach which means applying water by hand held hose to the dry spots, ridges and shoulders of the green. Although turf performs better when drier conditions prevail, the turf should not be put under extreme stress which can weaken the turf and lead to other agronomic problems such as dry patch. However, over-watering is a cardinal sin and results in the air space within the soil becoming filled with water, leading to a decline in root growth. Other problems such as softer surfaces, algae and thatch are then likely to follow.

Good drainage is essential for all year round playability and wear tolerance. Healthy turf cannot survive in a waterlogged soil therefore the quick and efficient movement of water through the soil and into a

ABOVE: Overseeding to enhance sward quality Royal Portlucaw.

permeable layer or drainage system is paramount to providing good growing conditions.

This also favours the more desirable grasses which in turn leads to better playing conditions and a lower maintenance requirement. Most if not all soils can be drained and on those where higher amounts of silt and clay are present, a variety of drainage practices will be required in order to improve permeability.

Mowing

The three basic considerations for mowing are the type of mower used, sharpness of reels & blades and the height of cut being used. In principle, the lower the height of cut, the more stress that is placed on the turf since the plant has less surface area to photosynthesise, produce energy and store carbohydrates.

The shorter the plant becomes then the greater the level of input of nutrients, water and management practices that are required. It is, as stated previously, a balance between mowing height, golfer expectations and plant health. For greens mowing, key considerations are labour requirement, time and cost.

The type of grass species present and the policy objectives will also have a bearing on mowing height. Other practices such as grooming, brushing rolling and top dressing will all have a part to play in addition to mowing and it is imperative that mechanical stress such as scalping is avoided.

Much emphasis has been placed on greens speed and a faster putting speed is now judged by many as a mark of quality. However, it is trueness and smoothness that are the most important factors and a more realistic mowing height will result in less stress on the turf.

Summary

Getting the basics right include creating a healthy growing environment both around the playing surfaces and in the soil below.

It is also about implementing a balanced feeding program, ensuring good drainage and irrigating for the benefit of the turf. Sound cultural practices of aeration and top dressing are additional to operating realistic mowing heights and frequencies of cut.

These fundamental practices need to be at the cornerstone of course policy and that modern turf technologies are there to assist in maintaining then golf course.



about the author

Laurence was the first greenkeeper to attain BIGGA's Master Greenkeeper Certificate in 1991 and is also a recipient of both Greenkeeper and Groundsman of the Year in 1984 and 1988 respectively. He has served the industry for 39 years, working at numerous courses throughout the UK

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