



- Establish the objectives - the scope and purpose of your document
- Know your reader - pitch it at the right level
- Structure the argument – prepare an outline of what will be covered
- Organise topics or points into related groups
- Use plain English and correct grammar - keep it clear and concise
- Present the report professionally – headings, styles and consistent layout
- Proofread and edit

As you write, keep focused on the overall objective and think of the reader.

This will guide you on just how much information to include (and what to leave out).

#### about the author



Michael spent his early years in sales and marketing, eventually setting up his own agency then moving into management consultancy. He obtained a degree in Organisational Psychology and became a lecturer in organisational and human behaviour at Huddersfield University before moving into training and coaching. As the principal of Coach the Mind he continually seeks to improve how learning is shared and has sought different ways to make taking on new learning an easier and more exciting process.



#### Know your Audience and Understand your Reader

Your document should be pitched according to the reader. There is no point using long, complex words if the reader will not understand. Equally, if you make your writing too simple, you may alienate your reader and you may be seen as patronising.

Ask yourself a few questions to establish who the reader is.

- What do they know already about the subject?
- What do they need to know?
- Will they understand technical terms?
- What do I want them to do?
- What worries or reassures them?
- What will persuade them to my view?
- What other arguments do I need to present?
- How are they likely to react to what I say?

If you imagine yourself in your reader's position you are more likely to write a good document.

#### Preparing an Outline

Once you have decided what you want to say, prepare an outline. This will help you stick to the point. Make a list of the topics you want to cover, but don't worry about the

order yet. Under each topic list key words, examples, arguments and facts. Review each topic in your outline for relevance to your reader.

#### Organising the Arguments

The classic report structure has four vital stages (the 4 P's):

- Outline the position
- Describe the problem
- Examine the possibilities
- Put forward the proposal

#### Structuring the Report

Reports are normally presented something like this:

1. Title Page
2. Foreword and or Preface
3. Table of Contents
4. Executive Summary Page (sometimes called an Abstract)
5. An Introduction
6. The Main Body, including headings and sub-headings
7. Past position
8. Problem/ Current Situation
9. Possibilities – pros and cons
10. Proposal
11. Conclusions and Recommendations
12. Appendices

#### The Key Sections

The structure and layout of reports will obviously vary according to the organisation and the



purpose of the report, but there are some key components which should always be included:

**The Executive Summary or Abstract** - This should be written last as it summarises all the findings. Its purpose is to give an outline for those who won't read the entire report. Make sure it appears first.

**The Introduction** - This is a key component which sets the scene. It needs to capture the reader's interest and include everything they need to know. This section usually includes:

- Why the report was written, who requested it
- The objectives or terms of reference
- What resources were available
- What sources of information were used
- The approach used to compile the report

**Main Body - Where the bulk of the content appears.**

**Conclusions** - These need to link to the terms of reference, so what you stated you were trying to do in your introduction with your findings. They should therefore flow from the main body of the report and should be clear, impartial and written with the impact on the reader in mind. Bullet points are often used to keep conclusions brief and to the point.

**Recommendations** - While conclusions look to the past, recommendations look to the future.

If you are asked to give recommendations, again there should be no surprises. You need to be realistic and ensure they are clearly linked to your initial objective.

#### **Well-Constructed Paragraphs and Sentences**

Keep paragraphs to one theme. Use one idea in one sentence and keep the sentences as short as you can, without making them sound too simplistic. An average sentence should contain 15 to 20 words, but a good writer will vary the length and rhythm balancing longer sentences with shorter ones. Try and keep your paragraphs relatively short and use lists and bullet points to split information up.

You can make your main assertion then support it by starting with a strong opening sentence, followed by others that expand on the theme. Alternatively, build your argument to a climax so the final sentence is the strongest.

#### **Executive Summary, Conclusions and Recommendations**

These cannot be written until after the main body has been written. So:

- Reread the whole report
- Rewrite any sections that can be improved
- Make a list of key points from each section
- Using new language, compose the first draft of the summary. Include the key points to sum-

marise the entire report

- Unless you are satisfied it is a clear and accurate summary, repeat the steps

#### **Writing conclusions:**

- Compare and cross check all your information, assure yourself it is valid
- Examine the terms of reference and check each has been addressed
- Test out your findings on others to gauge reactions
- Try and end on a positive and upbeat note

#### **Writing Recommendations:**

- Recommendations should follow any conclusions
- Can the recommendations be justified?
- Use bullet points to list recommendations

#### **Proof-Reading and Editing**

Once you are happy with your first draft, wait at least a few hours or even days, then re-read it. Does it flow? Are the headings clear? Is everything you have written valid? Also, don't be afraid to delete anything that is not strictly necessary, bearing in mind the objectives and terms of reference.

"There you are Eric", said the member, "all you need for a great report that I think will surprise the new manager".

"I'll need a bit of luck as well you know" replied Eric.

"Not if you follow my suggestions" replied the member.



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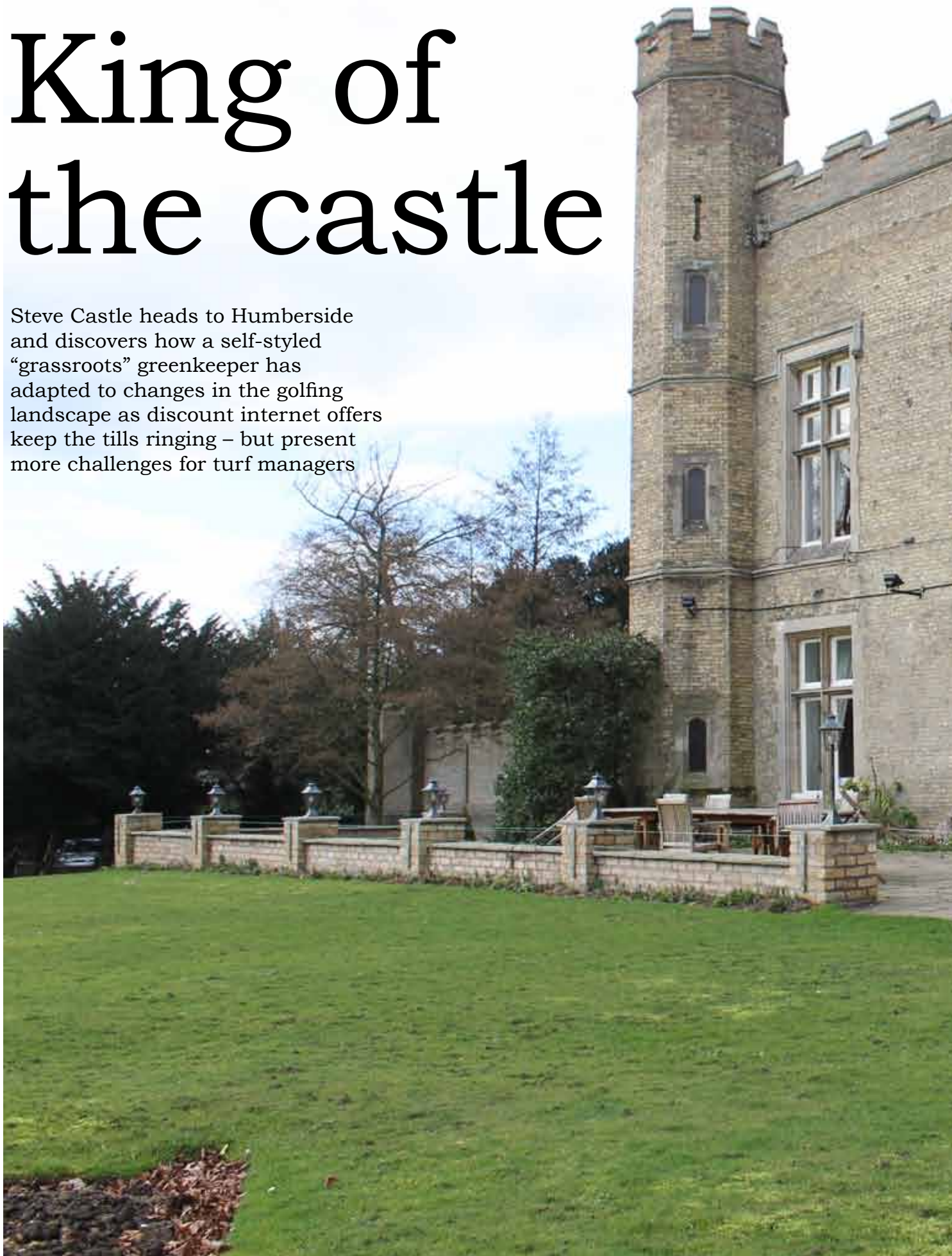
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# King of the castle

Steve Castle heads to Humberside and discovers how a self-styled “grassroots” greenkeeper has adapted to changes in the golfing landscape as discount internet offers keep the tills ringing – but present more challenges for turf managers



**PROFILE**

**Name:** Les Nelson LCGI  
**Role:** Head Greenkeeper  
**Born:** 22 April 1949  
**Handicap:** 19  
**Hobbies:** Looking after grandchildren, playing golf  
**Favourite Sports Team:** Selby Town FC

**It's fair to say that, unlike many of the courses I visit, golf is just one of the attractions at Cave Castle rather than the primary concern. The complex is in the small market town of South Cave around 15 miles from Hull, and boasts a striking hotel with 70 bedrooms. It hosts weddings and conferences plus an on-site health club – but there's also an 18-hole parkland golf course to maintain.**

When Head Greenkeeper Les Nelson joined Cave Castle in 1996, the club did not own a single buggy. Now they have 23, and the main reason behind this is the key to the facility's hugely increased popularity. In the last decade or so they started offering golf breaks, and the upturn in business has largely been due to 'word of mouth' recommendations as well as the introduction of a website.

Les explained: "The phrase 'golf break' can mean a huge group or just two people and we offer a selection of special offers and tailored packages. We really look after the golf breaks, they're met personally when they arrive and receive a gift. They must account for a large percentage of our income now, and two staff are employed to deal with enquiries and the organisation of the breaks from start to finish. The online traffic has been fantastic for us and it's amazing how much it's transformed the finances here over the last few years."

But how do the club's members (around 300 of them) react to this?

"We give the members the first two hours' tee times then the golf breaks usually tee off around 10am. At times, the course is so busy it's absolutely ridiculous. Members go out and play as soon as it's light – we've had members teeing off for a medal at 5am in the summer. They pick their cards up the night before then play the next morning.

"We do have a good size team – six including myself – to deal with this. The visitors are actually easier to work around than members because they have specific tee times and we know exactly how many of them are playing. Sometimes it's so busy you intend to cut all the fairways and only get nine done – so we do the other nine first thing the next day."

It's obvious that this must have created serious challenges for the team, and has hugely shaped their strategy – particularly regarding their attitude to the rough.

Les explained: "We're so busy we don't have time for people to be searching for golf balls. You tend to find that visitors will accept losing a ball out of bounds or in one of our ponds, but they won't accept losing a ball in the rough. So, we cut all the rough at an inch and a half and over time the new trees we recently planted will replace the rough as a hazard. Golf is a business and we need to get people round the course.

"I'm a grassroots greenkeeper at a grassroots course. I used to work at Boothferry Golf Club, a local municipal, and the course was in poor condition when I joined. When I came here it was exactly the same, in fact members were walking out and joining other clubs.

"Slowly but surely we've pulled it round, and the success of the golf breaks shows this. When I came here I said to the greenkeeping team 'my aim is that something improves every week'. It didn't matter how small it was. The plan was to put right what we already had before launching into new projects."

The course is partly on a sandbase and partly on clay, with limestone close to the surface. The greens are 50/50 meadowgrass and fescue. The team have thrown themselves into a series of projects – from tree planting to define several fairways to constructing paths to ensure the increasing number of buggy users were able to negotiate the course safely, and with minimum damage to the turf. What sort of budget has Les had to work with?

"We don't have a budget as such. I don't get every piece of machinery I ask for, but I get a straight answer – yes or no, and if it's no I get a list of reasons why in five minutes. There is no greens committee so it's just me, the owner Mel Hogarth and his son Steve who discuss things.

"That also means that decisions about the course – such as whether we close or not during a spell of bad weather – rest solely with me and I feel that's how it should be. If we have to ban buggies, even in the middle of summer which we've had to do over the last few years with these wet summers we've had, it's my call. The absence of buggies may mean a golf break does not wish to come but we always try and accommodate them at some other time. It's all for the benefit of the course.

"If we have a group of 20 coming on a golf break, and one of them needs to use a buggy, we can make the odd exception. But this does make it a bit of a tough juggling act because if the members see a visitor

## KEY MACHINERY

2 John Deere Fairway Mowers  
2 Toro Mowers (1 Sidewinder)  
2 John Deere Zero Turns  
2 John Deere Greens Mowers  
Toro Spiker  
2 John Deere Tractors  
1 Sprayer  
1 John Deere Gator

out on a buggy, they wonder why they can't have a buggy!

"Of course, the other way of looking at it is that's quite a big responsibility to have on your shoulders. But whatever I decide I've been backed to the hilt.

"For example, we don't have temporaries because I've never liked them. So we put two holes on each green in winter. We put one on the front of the green, maybe just a foot on, and one at the back. So when it's frosty we use the one that's only a foot on."

Les learned his trade at Oakdale Golf Club under Oakdale's former Head Greenkeeper Walter Heeles. Les showed me his 'Trainee's Log Book' – basically the 1978 version of CPD! It recorded in step by step fashion how he was schooled in everything from using tractors to pest control with Walter's signature alongside each module when it had been completed.

He went on to take his Level 2 and Level 3 in Sportsturf in the eighties, obtained his Level 4 in the nineties, and is now preparing to retire. So, what's changed during his time in greenkeeping?

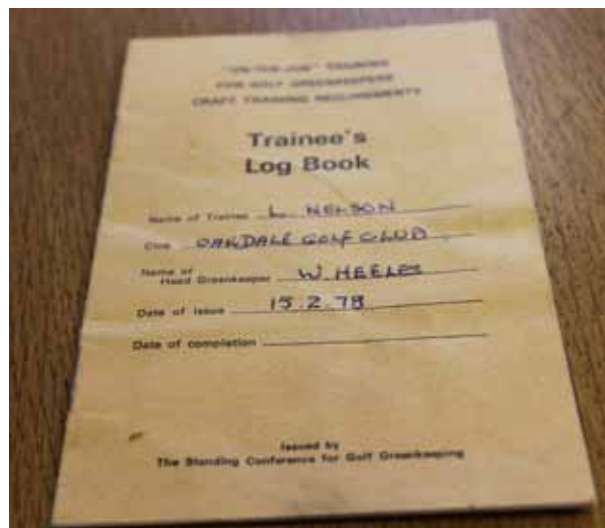
"There's definitely more pressure. Golfers are more demanding and play all year round. I think a major reason for that is the quality of clothing. You can buy good quality, waterproof winter gear now which you couldn't years ago.

"On the other side of the coin, it's easier to provide quality surfaces all year round now because machinery has improved so much. For example, the old trail gang mowers were horrible machines compared to modern day machinery.

"There is still a lot to do here, and hopefully someone new can take the course on to the next level and fulfil its potential. I'll miss greenkeeping, but I'm ready for retirement!"

ABOVE RIGHT: One of the new paths created for the increased use of buggies

BELOW: the 1978 version of CPD!







# Drawing boundaries for biostimulants

Dr Terry Mabbett explores biostimulants and casts his eye over seaweed and compost tea

**Behind the growth of biostimulants is a general agreement that the quality of above ground turf biomass is dependent on the health and vigour of the root system. For soil-structural, environmental, turf management and operational reasons, individual grass plants are unable to achieve full root growth potential. If the part you can't see isn't performing as well as it should, then the part you can see is not as good as it could be.**

Biostimulant is a relatively new 'buzzword' describing a disparate collection of substances and micro-organisms claiming to stimulate

plant growth and enhance turf quality.

Biostimulants are filling gaps left by old-fashioned pesticides and fertilisers as they become increasingly persecuted by EU legislators and shunned by some turf managers.

In a race to place wares on the biostimulant stall many which are clearly not biostimulant in function or effect are sneaking through.

Synthetic fertilisers and pesticides are just about the only things generally excluded from the politically acceptable collection of living and non-living things currently sheltering under the biostimulant umbrella.

## What is a biostimulant?

To my mind, a biostimulant is a chemical factor (it all comes down to chemistry) acting directly on and through the plant's metabolism, to enhance plant growth (also development in the case of agricultural crops) for the overall benefit of individual grass plants and turf.

The defining terms of a biostimulant should encompass the capacity to mitigate stress caused by physical factors (e.g. drought or flooding; extremes of temperature; drying winds etc) and biological agents (insect pests, plant pathogens and weeds).

Whether the prefix 'bio' should denote the origins of the prospective biostimulant is another matter.



**ABOVE:** The quality of above ground turf biomass is dependent on the health and vigour of the root system. Healthy soil core with a strong root mass shown here and **MAIN ABOVE:** Good visual and play experience is essentially dependent on the health and vigour of that part of the sward you cannot see (Pictures courtesy Syngenta) **RIGHT:** Underperformance of turf above ground is a strong indicator of problems below ground.





nitrogen fixing bacteria, soil conditioners, amino acids, humic acids, fulvic acids, minerals, plant nutrients, trace elements, activated nutrients, growth simulators, chelates and carbon rich organics.

### Seaweed and compost tea

Meaningful discussion on biostimulants clearly requires setting of boundaries and therefore deciding what's in and what's out. This can only be done by taking a closer look at prospective substances to see if they conform, pass the test and warrant that increasingly sought after and commercially valuable label.

What sort of active ingredients make a true biostimulant? A logical answer falls at the first hurdle because there are no generally accepted boundaries in this new, man-made collection of biological actives – it's still a grey area and open to individual interpretation.

Discussions around seaweed extract and compost tea, perhaps the two best known compositions, and containing many ingredients and actives some of which are biostimulants, best illustrates the non-definitive nature of the debate.

Seaweed is an alga containing significant amounts of alginic acid, highly beneficial substance which aids soil crumb formation which is clearly beneficial but not a direct biological property. Seaweed also contains plant hormones including auxin-like compounds and gibberellins. These appear to fit the bill as biostimulants but as a later focus shows these are actually plant growth regulators. Muddying the water auxin-like compounds found in seaweed but which are completely different to indolyl-acetic acid (IAA). Unlike natural and classical plant produced auxin (IAA) which stimulates shoot growth and inhibits root growth, these novel actives stimulate both shoot and root growth.

Compost tea is rich in nutrients. If you consider compost tea in its entirety to be a biostimulant then should you differentiate between its nutrients on the basis of origin? Some will have been an integral part of the plant tissue and released during decomposition, while others originating from fertiliser applications could have remained on the surface of the plant (root zone or leaves) as a fertiliser residue.

Compost tea is rich in microbes – bacteria, fungi, protozoa and nematodes – used as 'friendly fire' against pests, pathogens and diseases when compost tea is applied as a foliar spray. The effect

Not in doubt is entry into the plant to deliver the effect, and not from an external position in the root zone or on the leaf surface.

In the absence of boundaries, the term biostimulant can be used to describe and justify just about anything and everything, including essential plant nutrients and even water which clearly stimulates grass growth during periods of drought.

Indeed a quick review of commercial products marketed as biostimulants reveals an 'all things to all men' collection of non-living (physical and chemical) and living (biological) things. These are plant hormones, enzymes, vitamins, yeasts and other 'friendly' fungi,



is biological but is directed against malign microbes and not via the plant's metabolism, and therefore not the action of a biostimulant.

But chemicals in compost tea which can enter plant to deliver a direct growth response will satisfy the criteria of a biostimulant. Compost tea contains humic substances, a general name covering a wide range of chemicals, such as fulvic acids, with their origins in the decomposition of plant and animal matter into humus. Larger humate molecules play an important role in soil crumb formation, an important property and function but not those of a true biostimulant. On the other hand, small molecules like humic acids and fulvic acids are thought to be vehicles and carriers of essential plant nutrients into the roots and as such are model biostimulants. Classic example is biostimulants applied in the run-up to winter, to enhance the availability and utilisation of tissue strengthening nutrients like potassium and calcium and the 'greening' benefits of iron.

**Setting boundaries for biostimulants**

In the absence of any formal boundaries the following is my take on the status of several key groups of factors which appear to be key and central to the biostimulant debate.

**Plant hormones**

Plant hormones immediately spring to mind when canvassing for the biostimulant or its 'bio' and 'stimulation' components. Plant hormones are used in agriculture and horticulture as plant growth regulators, targeted at plant development – fruiting, flowering and bulb initiation. But that dimension doesn't apply to turf grasses which are not expected to or required to flower and set seed.

Plants generally contain optimum concentrations of individual plant hormones which are in balance. Any turf treatment which pushes a plant hormone over its correct level could have an over-stimulatory effect. This may occur through direct effect of the hormone on its target and function (e.g. promotion of cell division or cell elongation), or an indirect effect due to creation of imbalance with other plant hormones. Even under normal conditions a plant is not all things to all plant organs. Natural plant auxins stimulate growth of stems and shoots but at the same concentration will inhibit root growth.

Perhaps more pertinent and practical is the effect of environ-



mental conditions on the production and behaviour of natural plant hormones. For instance, production of cytokinin in roots and its transport to shoots is known to be inhibited by flooding, drought and high temperature. Provided other hormones are maintained at correct levels, turf stressed by these factors could benefit from cytokinin treatments. In this case any positive response would qualify as biostimulation.

Clouding the issue is North American research showing effects obtained may depend on turf grass species. Application of gibberellic acid to Bermuda grass (*Cynodon dactylon*) swards during cool fall (autumn) conditions provided a

**TOP:** Biostimulants can play a vital role in keeping grass green and 'mean' during the harsh winter months.

**SECOND TOP:** Good-looking and playing greens in February, perhaps the 'leanest' month of the year for managed turf. Measured use of biostimulants will have played an important part in coming through winter in this condition.

**RIGHT ABOVE:** Seaweed extract is a 'treasure trove' of beneficial ingredients and actives including biostimulants

**RIGHT BELOW:** Clovers (white clover and bird's foot trefoil shown here) possess powerful nitrogen fixing properties via symbiotic relationships with nodule-forming Rhizobium bacteria. However, their weed status in managed turf far outweighs any biostimulant boost from the nitrate thus produced

