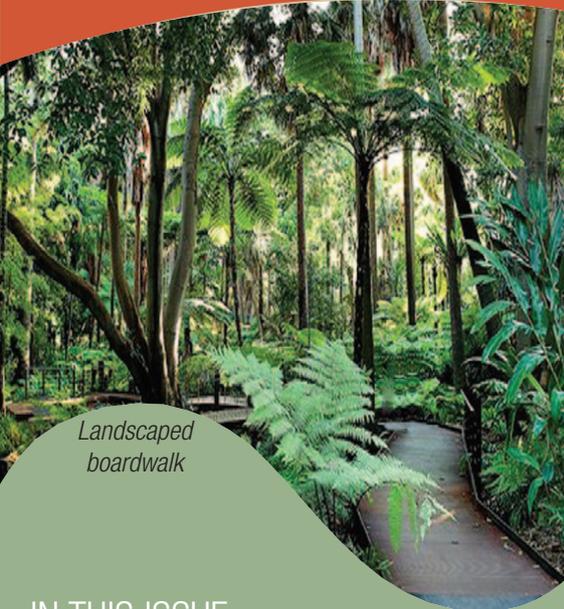


OUT ON A LIMB

An informative newsletter for all those with an interest in horticulture



Landscaped boardwalk



Barry Fitzpatrick

An Eclectic Mix

Welcome to the Winter Edition of 'Out on a Limb' – I trust you'll find it of interest.

Reading through the assortment of material on offer, it is a most eclectic mix.

By way of an opening, let me pose a hypothetical.

What's the difference between a good landscaping job and a poor one?

Some might say – a lifetime of disappointment, others might suggest about six months if you find a reputable professional to fix it, but the real answer is undoubtedly to start with a professional designer whose plans will meet all aspects of client needs, followed by a fully qualified team to carry out the work on site. This hypothetical is offered as a segue into a lead article in this issue by Myles Broad of Eckersley Garden Architecture, titled 'Raising the standard of professionalism within the Landscape Design Industry'. Myles writes about some of the problems inherent in the landscape design industry which in his words "sits in an awkward space as an industry which does not have a registration process or a professional ruling body like landscape architects, nor the opportunity for limited building registration that landscapers have".

It makes for interesting reading.

In another article well in step with the current debate about climate change and planet warming, Andrew Thornhill, a research botanist from James Cook University writes about our much-loved and ancient eucalypts in which he says "despite the antiquity of the eucalypts, researchers assumed they did not begin to spread around Australia until the continent began drying up around 20 million years ago, when Australia was covered in rainforests.

But once drier environmental conditions kicked in, the eucalypts seized their chance and took over, especially in south-eastern Australia".

With global warming now so clearly evident, it is interesting to speculate on the dramatic changes which will affect our plants and gardens going forward. In this regard, I recall Director and Chief Executive of the Royal Botanic Gardens Victoria, Professor Tim Entwisle writing in these pages about how by about 2090, Melbourne's climate will be similar to places such as Dubbo in Central New South Wales and Warwick in Queensland.

Andrew Thornhill goes on to say "Since the 1990s and early 2000s, taxonomy has been slightly superseded by a new field called 'phylogenetics', the study of how organisms are related to each other using DNA, which produces something akin to a family tree. This article makes for very interesting reading for horticulturalists of all genres.

By way of conclusion to this preview, it would seem glyphosate and Roundup are never far from the attention of the news hounds and so it is interesting that yet another article talks about a new sugar molecule which has been discovered that could become a highly effective natural herbicide, providing a sustainable alternative to glyphosate, the active ingredient in a multitude of other branded non-selective herbicides marketed worldwide.

It is indeed an ever-changing world in which we live.

Let me close by wishing you all a safe and prosperous new financial year.

Barry Fitzpatrick.

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Raising the standard of professionalism within the Landscape Design Industry

– an article by Myles Broad of Eckersley Garden Architecture.



Myles Broad (left) and assistant Duncan Lockwood pictured in the offices of Eckersley Garden Architecture in Richmond.

A situation occurred on one of our jobs earlier this year that had the potential to turn nasty. Between designer, client and builder, a decision was made not to apply for a planning permit in a heritage overlay because the works could be deemed 'renovation of existing' rather than a fresh design and build.

It was on auction day of the property that a nose and vindictive neighbour doxed our client into council. Both planning and building enforcement were there within 48 hours of the property's sale. To raise the stakes even higher, the client had already purchased a new property that relied on the sale of the previous one. Then to top it off, we discovered that the builder had let his registration lapse.

It could well have ended in a storm of litigation but thankfully it didn't. Everyone pulled together and got as-built retrospective consent from both building and planning departments. The old property settled and the new one was purchased.

As a long standing, well-respected landscape design company, the situation made us take stock. We needed to look at how we were operating and how we could improve our processes to ensure that this sort of thing didn't happen again. As an office, we had a round table about how we might improve industry professionalism within landscape design. We thought that this forum would be a good opportunity to share those thoughts and begin a conversation about our industry current and into the future.

Landscape Design sits in an awkward space as an industry. We don't have a registration process like architects, or professional ruling body like landscape architects, nor the opportunity for limited building registration that landscapers have. Anyone can wake up tomorrow and paint 'Landscape Designer' on the side of their car without any qualifications or guidelines of how they should operate. We seem to be

hovering around the edge of professionalism, reliant on the skills and qualifications of other industries to make ours work.

That's not to say that we don't operate on a professional level. A quick look around our office sees a range of tertiary and trade qualifications held by a team of driven and passionate people. In the past ten years our levels of documentation and communication have evolved so that any contractor could pick up our plans and know how to construct them. The frustration is that there is no industry standard by which our knowledge and our qualifications can be measured and adjudicated. What is the point of higher education if anyone can jump on board?

What we need is a platform to take the next step as a professional industry. In the same way that landscapers are required to have a limited builder's licence, landscape designers could have a limited drafting and project managing licence. It might be less than a full-blown building draft person's registration, covering just those aspects that landscapers cover in their licence. Or maybe we need to employ drafts people within our businesses so that we can negotiate the entirety of our design, documentation and project management in a fully legal manner?

It seems that identifying the need for permits, to draft and apply for those permits and then to oversee the carrying out of those permitted works is where the industry is headed. The regulatory bodies want to make us fully accountable for the work that we do and ultimately that's not such a bad thing.

There are probably plenty of other business models out there that operate in a wholly professional capacity, just as there are probably plenty flying by the seat of their pants. The great thing that we see Landscaping Victoria doing as an industry body through the Government Grant project they are working on, is starting a conversation that will (hopefully) in the future see landscape designers aligned as a professional body.

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Tools of Trade

- an article by Mick Le Grand of Fitzpatrick & Co.



I have a liability policy, does this cover my tools? No!

Tools of Trade cover is a separate insurance policy that can provide Australia-wide cover for your tools.

If your tools are stolen can your business still run?

If your entire toolbox was stolen, how much would it cost you to replace all of your tools, including the smaller items that you have built up over many years?

Tools of Trade cover can provide cover for all items and not leave you out of pocket or unable to work.

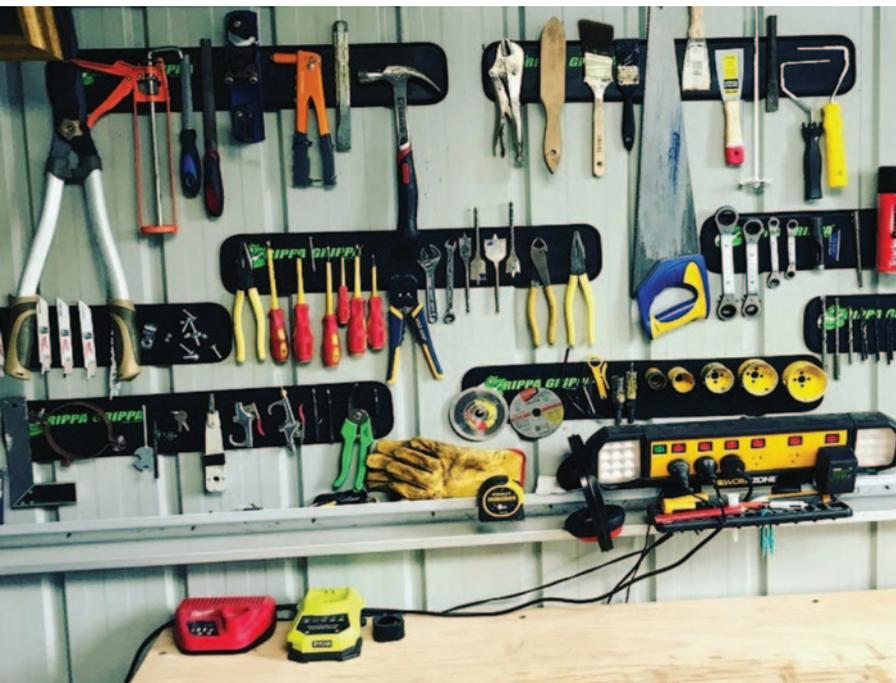
Most insurers do not need an individual list of items, but they will require a total sum insured for your tools. Some may even require you to specify tools if they are over \$2500, depending on the value.

Insurers will cover any tool regardless of the sum insured but need to know what they are covering so they can adequately protect your assets, and can pay you the right amount, in the event of a claim.

It is important to check your Tools of Trade policy because covers can be limited by either location, theft exclusions or even where you store your tools. For example if a tool was stolen from a toolbox in an un-locked vehicle, shed, or from the back of a ute, it may not be covered depending on the policy.

Can you afford to run your business without your tools?

Or will the small cost of Tools of Trade insurance provide suitable protection to keep your business running in the event your tools have been stolen.



Tools stored in shed



Police collection of more than 400 stolen tools



At risk - thousands of dollars of tradie tools



PO Box 2230 Mt Waverley 3149.
Tel: (03) 8544 1600 Fax: (03) 8544 1699
Toll Free for Interstate & Country Callers: 1300 554 633

Why Life Insurance & Income Protection are Important

- A real life example!



We would like to share a true-life insurance claim story which signals the importance of having the right people and the right cover for your needs.

Tania and her husband Marty approached Fitzpatrick Financial Services unsure what they needed but were concerned about protecting their family in case of ill health. Our adviser reviewed their current life situation, gave them options and helped them implement the policies that they selected.

Less than 12 months later Tania was diagnosed with a severe brain tumour. We have recently been successful in securing the payment of Tania's Total & Permanent Disability payment and she continues to receive her monthly income protection payments.

The letter which follows was received from Tania this week:

"When I met you to discuss our insurance needs, I never ever thought I would need income protection or total and permanent disability cover as I lead a healthy lifestyle. I remember you talking to me about the risk that my family could face if I was out of action as I was a working Mum. I decided to take your advice and take out the insurance policies, but little did I know that within 12 months I would be diagnosed with a malignant tumour in my head. I now need years of rehabilitation, am unable to ever return to work and our world has been turned upside down.

The Life, total and permanent disability and income protection policies you put together for me changed our lives forever. Marty remembers when he called you to tell you what happened to me and you got onto the claims process immediately. We had a lot of forms to complete and you came to our home and sat with me one morning to go

through it all. I am so grateful for the numerous phone calls over six months between the insurer and you so that you could minimise my involvement, as I was unable to comprehend the information. We truly understand and appreciate the time you put into our claim.

We can't believe that we have now paid off our mortgage thanks to these policies. In addition, Marty can go to work and continue to run his business while I get the necessary medical attention and care that I need. My income protection policy allows me to contribute to our family and medical needs. Your advice, guidance and assistance with the payment of the policies covered all our issues and removed all financial stress. I am very grateful that we took your advice and that we had Fitzpatrick Financial Services looking after us."

Life Insurance, and any insurance is a vital aspect of not just your business, but your life. The above story shows the reason why having the right cover and professionals working with you are so important.

For assistance with any of your insurance needs please contact Mick Le Grand, Director of Programs at Fitzpatrick & Co. on 03 8544 1634 or email mickl@fitzpatrick.com.au.

Fitzpatrick & Co have specialised in the horticulture and arboriculture industries for over 30 years providing assistance and financial support to companies, associations and events.

We are there when you need help.



New structure for nursery industry

Members of the nursery and garden industry have agreed to come together as a national association. The change will see a move from the current federated model to one where businesses and associations are directly involved in their national body. Currently members join a state or territory association that funds a national body, the Nursery and Garden Industry Association, to represent national issues.

NGIA President, Karen Brock (pictured left) says it is a very exciting and positive step forward after several years of consultation that began in 2016. The decision was made in Sydney at a meeting on November 12.

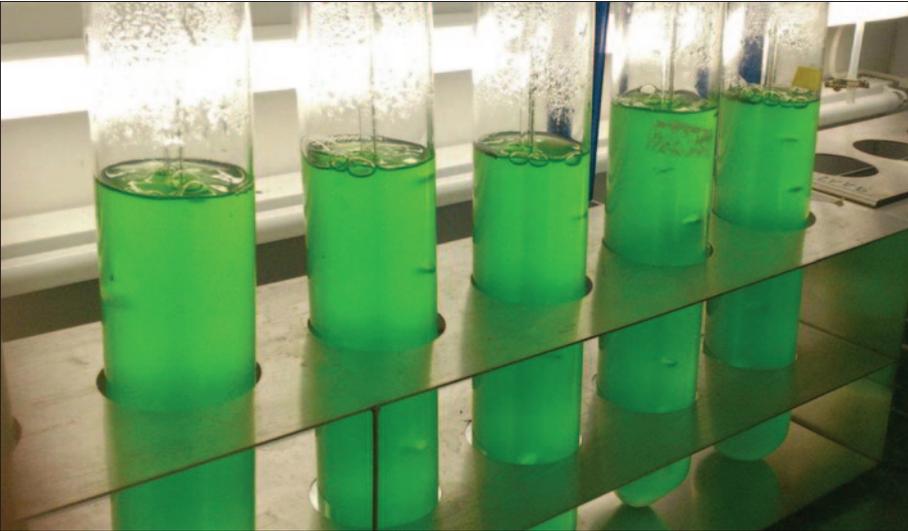
"The next stage is the setting up of a Transition Team to put together an information memorandum and advise on how to set up the new entity.

"Members of Transition Team will come from among what I describe as the industry's brain trust, a diverse group of six or seven people who can represent the industry," says Karen.



Potential new herbicide derived from sugar

A new sugar molecule has been discovered that could become a highly effective natural herbicide, providing a sustainable alternative to glyphosate, the active ingredient in Roundup and a multitude of other branded non-selective herbicides marketed worldwide.



The newly discovered natural molecule could be as effective as conventional glyphosate herbicides but potentially safe and non-toxic to humans and animals. (Credit: Klaus Brilisauer - WWW)

A team of scientists from Germany's University of Tübingen has discovered a novel and unusual sugar molecule that is harmless to animals and humans but can effectively disrupt the growth of various plants and microorganisms.

The impressive new research began with the identification of a new sugar molecule that was isolated from a freshwater cyanobacteria called *Synechococcus elongatus*. The researchers knew this particular organism could significantly inhibit the growth of other similar bacterial strains, however exactly how it did this was unknown.

Eventually, the research team honed in on a previously undiscovered and unusual sugar molecule they referred to as an antimetabolite, due to the molecule's novel ability to disrupt metabolic processes. The molecule is called 7-deoxy-sedoheptulose (7dSh) and after developing a new process to synthesise the compound, its mechanism of action was extensively studied.

It was discovered that 7dSh exerts its inhibitory actions by blocking an enzyme that plays a role in the shikimate pathway. This pathway is a metabolic route fundamental to the growth of many plants, bacteria and fungi, but it is not found in humans or animals. This means a targeted disruption of the shikimate pathway is ideal for herbicides used to manage weeds in farming.

Glyphosate, one of the world's most widely used commercial herbicides, exerts its renowned weed-killing actions by targeting this same shikimate pathway. In recent years however, concerns have been growing surrounding the human safety of glyphosate and many countries are beginning to regulate the infamous chemical's use.

"In contrast to glyphosate, the newly discovered deoxy sugar is an entirely natural product," says Klaus Brilisauer, one of the researchers on the project. "We believed it to have good degradability and low ecotoxicity. We see an excellent opportunity here to use it as a natural herbicide."

Needless to say, there is much more work yet to be done before 7dSh could be commercially deployed as a natural herbicide. While early indications suggest the compound is an effective herbicide, and also non-toxic to human cells, broader studies are needed for verification. The signs are promising though, with the compound offering not just potential as a natural herbicide but also demonstrating antibacterial and antifungal properties, suggesting human medical potential as well.

The research was published in the *Nature Communications* journal.



*Could this new technology spell an end to the ravages of weeds such as the common dandelion - *Taraxacum officinale*?*

A detailed eucalypt family tree helps us see how they came to dominate Australia

Andrew Thornhill - Research botanist,
James Cook University.



Eucalypts are classified by their various characteristics, including the number of buds.

Eucalypts dominate Australia's landscape like no other plant group in the world.

Europe's pine forests consist of many different types of trees. North America's forests change over the width of the continent, from redwood, to pine and oak, to deserts and grassland. Africa is a mixture of savannah, rainforest and desert. South America has rainforests that contain the most diversity of trees in one place. Antarctica has tree fossils.

But in Australia we have the eucalypts, an informal name for three plant genera: *Angophora*, *Corymbia* and *Eucalyptus*. They are the dominant tree in great diversity just about everywhere, except for a small region of mulga, rainforest and some deserts.

My research has sequenced the DNA of more than 700 eucalypt species to map how they came to dominate the continent. We found eucalypts have been in Australia for at least 60 million years, but a comparatively recent explosion in diversity 2 million years ago is the secret to their spread across southern Australia.

Hundreds of species

The oldest known *Eucalyptus* macrofossil, from Patagonia in South America, is 52 million years old. The fossil pollen record also provides evidence of eucalypts in Australia for 45 million years, with the oldest specimen coming from Bass Strait.

Despite the antiquity of the eucalypts, researchers assumed they did not begin to spread around Australia until the continent began drying up around 20 million years ago, when Australia was covered in rainforests. But once drier environmental conditions kicked in, the eucalypts seized their chance and took over, especially in south-eastern Australia.

There are over 800 described species of eucalypts. Most of them are native only to Australia, although some have managed to naturally escape further north to New Guinea, Timor and Indonesia. Many eucalypts have been introduced to other parts of the world, including California, where Aussie eucalypts make cameos in Hollywood movies.

Eucalypts can grow as tall trees, as various multi-trunk or single-trunk trees, or in rare cases as shrubs. The combination of main characteristics – such as leaf shape, fruit shape, bud number and bark type – provided botanists with enough evidence to describe 800 species and estimate how they were all related to each other, a field of science known as “taxonomy”.

Since the 1990s and early 2000s, taxonomy has been slightly superseded by a new field called “phylogenetics”. This is the study of how organisms are related to each other using DNA, which produces something akin to a family tree.

Phylogenetics still relies on the species to be named though, so there is something to sample. New scientific fields rely on the old. There have been a number of eucalypt phylogenetic studies over the years, but none have ever sampled all of the eucalypt species in one phylogeny.

Our new paper in *Australian Systematic Botany* aimed to change that. We attempted to genetically sample every described eucalypt species and place them in one phylogeny to determine how they are related to each other. We sampled 711 species (86% of all eucalypts) as well as rainforest species considered most closely related to the eucalypts.

We also dated the phylogeny by time-stamping certain parts using the ages of the fossils mentioned above. This allowed us to estimate how old eucalypt groups are and when they separated from each other in the past.



Gum trees are iconic Australian eucalypts. (Image: Shutterstock)

Not so ancient

We found that the *eucalypts* are an old group that date back at least 60 million years. This aligns with previous studies and the fossil record. However, a lot of the diversification in the *Eucalyptus* genus has happened only in the last 2 million years.

Hundreds of species have appeared very recently in evolutionary history. Studies on other organisms have shown rapid diversification, but none of them compare to the eucalypts. Many species of the eucalypt forests of south-eastern Australia are new in evolutionary terms (10 million years or less).

This includes many of the tall eucalypts that grow in the wet forests of southern Australia. They are not, as was previously assumed, ancient remnants from Gondwana, a supercontinent that gradually broke up between 180 million and 45 million years ago and resulted in the continents of Australia, Africa, South America and Antarctica, as well as India, New Zealand, New Guinea and New Caledonia.

The eucalypts that grow natively overseas have only made it out from Australia in the last 2 million years or less. Other groups in the eucalypts such as *Angophora* and *Corymbia* didn't exhibit the same rapid diversification as the *Eucalyptus* species.

What we confirmed with the fossil record using our phylogeny is that until very recently, and I mean in terms of the Earth being 4 billion years old, the vegetation of south-eastern Australia was vastly different.

At some point in the last 2-10 million years the *Eucalyptus* arrived in new environmental conditions. They thrived, they most likely helped spread fire to wipe

out their competition, and they then rapidly changed their physical form to give us the many species that we see today.

Very few other groups in the world have made this amount of change so quickly, and arguably dramatically. The east coast of Australia would look very different if it wasn't dominated by gum trees.

The next time you're in a eucalypt forest, take a look around and notice all of the different types of bark and gumnuts and leaves on the trees, and know that all of that diversity has happened quite recently, but with a deep and long link to trees that once grew in Gondwana.

They have been highly advantageous, highly adaptable and, with the exception of a small number of species, are uniquely Australian. They are, as the press would put it, "a great Australian success story".

AUTHOR: Andrew Thornhill - Research botanist, James Cook University.

Disclosure Statement: Andrew receives or has received funding in the past from the Australian Research Council (ARC), the US National Science Foundation (NSF), and Australian Biological Resources Study (ABRS).

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Eucalyptus regnans (Mountain Ash)

THE BENEFITS & THE RISKS OF PLANT SOURCING

Now more than ever, professionals in the nursery industry need to be aware of the risks that come with plant sourcing, or they may find themselves and their businesses at risk.

What are the risks?



Social licence

Increasingly, social licence is an area of risk, not only for our own sector but across many others. A recent example of social licence and the pressures it exerts is the discussion around agrochemicals, namely neonicotinoids and glyphosate. Other social licence issues include worker conditions and the sustainability of production inputs e.g. water, plastics and energy, global warming and environmental impacts.

Social licence is a relatively new term originating from the mining sector and one that can be broadly described as the level of trust that society has in a business to conduct its operations in what is perceived as a legitimate, transparent, accountable and socially acceptable way. In this sense, it is separate from legal mechanisms, however it can be an impetus for legal reforms. A business with poor social licence may well be able to operate, but it will lack support from the public and this will negatively impact upon the successful operation of the business.

For these reasons, responsible sourcing is becoming the norm of businesses around the globe, with the public expectation that businesses exercise due diligence in all their operations. The nursery industry sector is no different.

Biosecurity

Biosecurity is a significant risk in plant sourcing and covers the proliferation and impacts that plant pests, diseases and weeds have on the environment, our economy and our way of life. Recently, several state governments have changed their legislation in respect to biosecurity and introduced the concept of a general biosecurity duty or obligation.

For example, the following is an extract from the QLD Biosecurity Act 2014:

What is a general biosecurity obligation?

- 1. This section applies to a person who deals with biosecurity matter or a carrier, or carries out an activity, if the person knows or ought reasonably to know that the biosecurity matter, carrier or activity poses or is likely to pose a biosecurity risk.*
- 2. The person has an obligation (a general biosecurity obligation) to take all reasonable and practical measures to prevent or minimise the biosecurity risk.*
- 3. Also, the person has an obligation (also a general biosecurity obligation)—*
 - a. to prevent or minimise adverse effects on a biosecurity consideration of the person's dealing with the biosecurity matter or carrier or carrying out the activity; and*
 - b. to minimise the likelihood of causing a biosecurity event, or to limit the consequences of a biosecurity event caused, by dealing with the biosecurity matter or carrier or carrying out the activity; and*

- c. not to do or omit to do something if the person knows or ought reasonably to know that doing or omitting to do the thing may exacerbate the adverse effects, or potential adverse effects, of the biosecurity matter, carrier or activity on a biosecurity consideration.*

Given this, each person within the broad industry supply chain would reasonably be expected to know the biosecurity risks of what they are doing and is responsible for these risks. Similarly, each person should also take steps to prevent, eliminate, or minimise the biosecurity impacts of their actions. For example, this would include sourcing disease-free plant stock, employing basic hygiene practices in the field and notifying authorities in the advent of finding unusual pest or disease symptoms.

Failure to do so could lead to prosecution under the act not to mention the flow on impacts to their business industry and the broader community.

How do I manage these risks?

It can be hard to be across all the risks which are possible in sourcing plants, likewise it's hard to see what happens behind the scenes at a nursery. There is however a way for you to limit your risk in plant sourcing and that's by sourcing your plant stock from a nursery accredited through the Nursery Production Farm Management System (FMS).

In operation for over a quarter century, the Nursery Production FMS accredits not only production nurseries but also growing media manufacturers and greenlife markets.

The benefits and risks of plant sourcing - continued

The Nursery Production FMS is made up of three programs:

The core program is the Nursery Industry Accreditation Scheme Australia (NIASA), which this covers industry best practice in crop hygiene, crop management, general site management and water management. NIASA provides a level of assurance around consistent product quality and performance as well as a signalling that a business is responsible, sustainable and professional. NIASA is also endorsed through the Smart Approved Water Mark scheme.

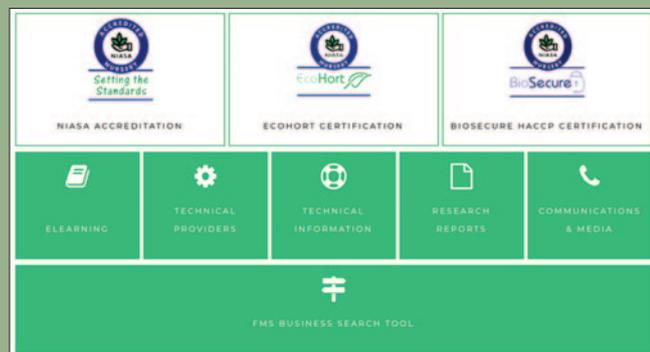
EcoHort is an environmental management system which is designed to further assist NIASA accredited operations to improve their business and environmental sustainability through a risk assessment and continuous improvement process. The core issues addressed include water, pesticides, waste, land & soil use, energy, pollution, and biodiversity.

BioSecure HACCP is the industry's dedicated on-farm biosecurity management program designed to assist NIASA accredited businesses to systematically assess and manage their current and future pest, disease and weed risks. Based on HACCP principles (Hazard Analysis Critical Control Points) this program anticipates and prevents biosecurity issues before and during production rather than only relying on an endpoint inspection. BioSecure HACCP has received numerous endorsements from the government, including being approved as the first industry owned and operated biosecurity program to meet interstate market access requirements in a co-regulatory relationship with state and territory governments.

Each of the programs are independently audited by professionals, which means that you can be assured that NIASA accredited businesses are meeting the best standards in the industry.

Purchasing your plant stock from a NIASA accredited production nursery is a clear sign that you are managing your biosecurity risk and responsibly sourcing your plant stock. For more information on the Nursery Production FMS and a list of accredited businesses visit the program website here:

nurseryproductionfms.com.au



Useful links & resources:

(Please note: some of these addresses do NOT have 'www' in front)

- Landscape Industries Association www.landscapingaustralia.com.au (includes links to all State Landscape Associations)
- Nursery & Garden Industry Australia www.ngia.com.au (includes links to all State NGLs)
- Australian Institute of Landscape Design & Management (AILDM) www.aildm.com.au
- Australian Institute of Landscape Architects www.aila.org.au
- Aborigiculture Australia aboriculture.org.au
- Dial Before You Dig Australia www.1100.com.au
- Outdoor Design Source www.outdoordesign.com.au
- Fitzpatrick & Co Insurance Brokers www.fitzpatrick.com.au
- Landscape Jobs Australia www.landscapejobsaustralia.com.au
- Plant Safely www.plantsafely.com.au
- 202020 Vision www.202020vision.com.au



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In preparing this information we are providing you with general advice. This advice has been prepared without taking into account your personal objectives, financial situation or needs.



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