showing off the best in the West

Synthetic turf debate
Variable Rate Irrigation first for turf
State Forums rollout
EDITORIAL

Ross Boyle

The first meeting of the Turf industry’s Strategic Investment Advisory Panel (SIAP) has now occurred.

Held at Sydney in early June, it was fulfilling to have the first meeting of the panel completed after an extended period of time – more than 18 months since the creation of Horticulture Innovation Australia (Hort Innovation) and the last meeting of the former Industry Advisory Committee (IAC) which previously provided advice on how the turf industry levy should be spent.

The meeting itself went well, however, the outcomes of the meeting are not all yet public information as the SIAP is only an advisory group, and Hort Innovation needs to ratify these recommendations (see story page 4).

Regardless of these outcomes, I highly recommend growers who would like to be part of the SIAP to put themselves forward. It only makes sense that the industry group recommending how levy money should be spent has a majority representation from growers.

“REGARDLESS OF THESE OUTCOMES, I HIGHLY RECOMMEND GROWERS WHO WOULD LIKE TO BE PART OF THE SIAP TO PUT THEMSELVES FORWARD AS THE INDUSTRY GROUP RECOMMENDING HOW LEVY MONEY SHOULD BE SPENT OUGHT TO HAVE A MAJORITY REPRESENTATION OF GROWERS.”

At this point in time, there are more positions available for growers to join the SIAP, with only seven of the nine positions filled. Growers need only to be levy payers to apply, and the commitment only requires attendance at two or three meetings a year.

In regards to other important turf issues, it is my belief that turf should have a presence at major agricultural shows held around Australia, as it is an often overlooked agricultural commodity at these popular events.

With that in mind, Turf Queensland (QLD) is working on a large scale display at this year’s Brisbane Royal Show, or ‘Ekka’, in August.

The display will be promoting turf growers in QLD as a whole, and will make use of the existing dinosaur statues at the Ekka site where the old Museum was once housed.

Thanks to some innovative thinking by Liz Smith from Horticultural Training Pty Ltd, who has previously assisted us in developing turf displays in Brisbane, a large framework will be constructed in the shape of a tiered cake and have Empire Zoysia covering it – the end result being a display which looks like the dinosaurs are eating a turf cake.

It will be a great attraction and anything to help start the conversation about turf’s place in agriculture and the wider community is a good thing. I encourage other state bodies and growers to pursue opportunities like this to push turf’s message. Hopefully, the promotion of turf at the Ekka will be successful and provide a model for similar promotions at other major agricultural shows.

As chairman of Turf Australia, I have also put turf front-of-mind at one of Australia’s biggest garden events, the QLD Garden Expo, which attracted 25,000 to 30,000 people, with a one hour presentation on each of the three days promoting the virtues of turf.

Looking ahead, the industry has a number of excellent networking opportunities coming-up and I look forward to seeing many growers at the upcoming State Grower Forums and the NxGen Forum and Field Day.

This year’s state-based grower forums replace the Annual Conference which the Turf Australia Board decided to host every second year to save growers travelling interstate each year. The Grower Forums will provide an opportunity to, not only hear from industry-relevant speakers but, provide an enjoyable networking afternoon/evening.

The NxGen Forum and Field Day, for our younger turf growers, is being held in Western Australia and has a great line-up of presenters who should help drive some innovative thinking.

Further information on NxGen is contained in this edition (see pages 6 to 9) and for more information on the State Forums refer to the Back Cover (page 36). Information is also available on Turf Australia’s website at www.turfaustralia.com.au.

Ross Boyle, Rosemount Turf
Chairman, Turf Australia
Leading by example when it comes to a ‘turf levy’

Canadian turf growers are set to follow the Australian Turf Industry example by initiating a ‘turf levy’ to promote the value of turf (known as ‘sod’ in North America). Promotion would be through education and co-operation with allied stakeholders for the benefit of Ontario consumers and trade alike.

**Greg Skotnicki**, president of the Nursery Sod Growers Association of Ontario tells their industry’s story and what hurdles may lay ahead. Perhaps their story reflects only too well what our own industry has been through.

Over the past few years the sod producers in Ontario have seen no growth in the market. With increasing costs and very little movement on prices, they’ve also seen their margins squeezed.

As a small association with fewer than 40 members, the Nursery Sod Growers Association of Ontario (NSGA) has done its best to advocate for the industry with consumer, regulatory bodies and lawmakers alike. With a volunteer board and limited resources, however, it’s clear that to make any real advances the Association needs access to money and professional help.

In December 2014, the NSGA underwent a strategic planning session to help identify where the Association should focus its efforts. The result of the planning session could be boiled-down to a mission and three strategic priorities:

**Mission:**
To promote the value of sod through education and co-operation with allied stakeholders for the benefit of Ontario consumers and trade alike.

**Priorities:**
1. Influence decision makers regarding the value of sod.
2. Create alliances with allied stakeholders.
3. Engage members to be industry spokespersons.

As the board of directors worked through these priorities, it became clear that a volunteer board with limited funds would have difficulty achieving any success in these areas.

The Province of Ontario has been funding agricultural initiatives over the past few years, so the NSGA applied for funding to help tackle our first priority. The funding would be used to engage a public relations firm to understand the sod market, how people purchase and what drives them to buy it or not buy it. Furthermore, the firm would propose a marketing campaign to ‘move the needle’ on sod sales.

With the understanding that a large budget would be needed to help fund the promotion of sod, the NSGA board looked to different ways to raise money. If a marketing campaign required CAD$1 million dollars annually, that would be an average of CAD$25,000 per sod producer – and, it was unlikely that sod producers would voluntarily fund a marketing campaign. So the board began to investigate creating a regulated marketing board.

Ontario has legislation that allows for farm products to be produced and sold in a regulated manner which, done properly, could help the industry raise the funds needed to help promote sod. Furthermore, the legislation could offer price setting authorities which could help return the industry to a profitable level.

The board proposed the idea of a Sod Marketing Board and at the Annual General Meeting in March, 2015 received approval to investigate further.

In the Summer of 2015, the NSGA received approval to fund the marketing study therefore, the process of collecting data and understanding the market began in the Fall of 2015.

Over the past year, the board has been collecting information and studying the potential impact of a sod marketing board and continues to receive support from the membership.

As always, the devil is in the details and the current thinking is to create a sod marketing board that will collect a license fee from producers based on acreage under production. In addition, the NSGA would request a minimum price setting authority that, if given, would create a floor below which it would be illegal to sell sod. By setting a minimum price, the board could ensure that sod producers generate enough revenue to pay the licensing fee, and also return the industry to a profitable level.

The next steps for the NSGA are to create a proposal for the Farm Marketing Commission that outlines a plan of how the funds are to be raised (licensing fee), use of the funds, how the minimum price is to be set, the enforcement of the rules and bylaws. We are hoping to present this proposal to the membership later this Summer for feedback and approval to then proceed.

On the marketing research front, the results of the research will shortly be available for all to review.

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"I HOPE THAT WE’LL BE ABLE TO KEEP OTHER ASSOCIATIONS AND GROUPS UP TO SPEED ON OUR PROGRESS AND, AS ALWAYS WE ARE OPEN TO COMMENTS AND FEEDBACK SO THAT WE CAN PERHAPS ALL HELP TO RAISE THE PROFILE OF THE TURF INDUSTRY WORLDWIDE.”

Nursery Sod Growers Association’s, Greg Skotnicki.
Turf sees outline of robust investment plan

Horticulture Innovation Australia’s Relationship Management Lead, John Vatikiotis (right) outlines the latest news from the recent Turf Strategic Investment Advisory Panel (SIAP).

The Turf SIAP was held on June 9 and 10, and convened by Hort Innovation. The two days covered a range of key focus areas:
- Induction of the Turf SIAP
- Process for development of the Turf Strategic Investment Plan (SIP)
- Update on the Turf Marketing Program
- Research and Development Investment updates

Process for development of the Turf Strategic Investment Plan (SIP)

The development of the new Turf SIP is due for completion December 2016, with the current SIP due to expire June 2017. The consultation process with industry is vital in establishing a robust investment plan for the next five years.

“THE DEVELOPMENT OF THE NEW TURF SIP IS DUE FOR COMPLETION DECEMBER 2016, WITH THE CURRENT SIP DUE TO EXPIRE JUNE 2017. THE CONSULTATION PROCESS WITH INDUSTRY IS VITAL IN ESTABLISHING A ROBUST INVESTMENT PLAN FOR THE NEXT FIVE YEARS.”

A range of options for becoming involved will be made available to industry to enable contributions that will help shape the Turf SIP. These engagement options include access to industry forums, surveys and direct feedback through the Hort Innovation website. A SIP information portal has been established on the Hort Innovation website. Regular updates will be published here and growers can directly register their interest in being part of the SIP consultation.

Review of the Turf Marketing Program

The SIAP unanimously endorsed the direction of the Marketing Plan for 2016/2017, as aligned with the current SIP strategy.

Several discussions were held around using social media to continue to profile the positive aspects of utilising turf. The development of the new marketing plan is scheduled for delivery by the end of 2016, underpinned by the finalisation of the Turf SIP.

R&D Investment updates

With changes to Hort Innovation’s funding model, the Voluntary Contribution mechanism was discontinued and replaced with the Strategic Co-Investment Fund (Pool 2). Panel members discussed the intent of Pool 2 to allow for investment in transforming the industry by seeding longer-term, whole of horticulture benefitting projects through strategic co-investment.

Levy investments (Pool 1) was also discussed, in particular concepts for the betterment of the Turf Industry ranging from economic analysis of the value of turf production, turf maintenance and turf assets in the community, though to accreditation programs and nutrient efficiency. Potential investments in leadership programs specific to the Turf Industry were also discussed. Further scoping will take place to ensure any concept investments are made in line with industry priorities.

The Turf Strategic Investment Advisory Panel’s role is to provide transparent and robust investment advice. The SIAP has a clearly defined Terms of Reference and is guided by the Strategic Priorities set out in the current Strategic Investment Plan (SIP) for industry. Information on the Turf SIAP, including meeting summaries, can be found at the Hort Innovation website at www.horticulture.com.au

Horticulture Innovation Australia
The national, levy funded, turf marketing program has continued to build a strong relationship with the wider public as social media emerges to be one of the most effective ways of distributing advice and interacting with customers. Horticultural Innovation Australia’s turf marketing manager, Craig Perring explains.

The Turf Marketing Plan has now completed two years of its three-year strategy and some key learnings have emerged over the last 12 months.

These include the time it has taken to develop a comprehensive guide to turf-growing contacts and understanding the best way to ensure turf’s voice is heard in the media.

Some of the Plan’s key areas of development, in the past year, include:

1. **Strengthening turf’s authoritative voice**
   - The Turf Australia Consumer Communications Guide has now been developed and, moving forward, will be a useful reference document for the entire marketing program.
   - Engaging turf growers to develop this guide proved a lengthy process, but now the guide is finalised, Bite Communications believes the process will be more streamlined with a list of key contacts for specific state-based enquiries.
   - Both proactive and reactive content on the Lawnspiration Facebook Page has become more detailed as fans’ knowledge increases and Bite Communications further positions Turf Australia as the authority for all things pertaining to natural grass.
   - Infographics continue to perform well on the Lawnspiration Facebook page, however these too must continue to be developed in line with the knowledge, skill level and needs of the viewing audience.

2. **Ramping-up media**
   - Media releases to do with seasonal lawn care advice, continue to garner strong results, particularly in regional areas.
   - With natural vs synthetic not “new” news, reactive outreach to media stories was met with mixed response. In cases where plans for synthetic grass were preliminary (for example, Mosman Council), a reactive pitch to the local newspaper was effective. However in other cases where the plans are already well advanced, reactive pitching may not be a successful strategy.
   - While the research required for news creation can take time to get right, stories developed based on reliable facts provide a strong hook. Hence, turf specific research is regularly required to achieve turf coverage in the media.

For future news and/or environmental campaigns, Bite Communications has recommended the industry invest in new turf specific research to create new information for story content. One such area may be determining the ‘total value’ of turf assets in our community. Turfed areas provide multiple environmental, social and economic benefits which are unfortunately too often taken for granted.

3. **Engaging consumers through Facebook**
   - Facebook has continued to be one of Turf Australia’s strongest channels for communication, with more than 20,000 engaged fans.
   - Involving the Facebook community with the page has generated greater interaction and engagement, and has assisted in positioning Turf Australia as the go-to authority for turf questions and queries.
   - The competition to win a new lawn, with entries received via the Facebook page, attracted many entries and a high level of engagement while the partnership with Yates also provided some benefit in connecting with consumers and further informing them about the many benefits of turf.
   - The Lawnspiration Facebook page engagement was considerable in the last year and exceeded expectations with a lower advertising budget than allocated.

A new Turf Marketing Program will be developed over the next 12 months to build on the marketing achievements to date. Individual growers will be able to have input via the Industry Strategic Planning process.

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**A recent infographic developed by Bite Communications.**
This year’s Turf Australia NxGen Forum and Field Day for young turf growers will focus on, how turf can be used for the benefit of the wider community, how growers can manoeuvre turf into even more spaces, as well as new water-saving technology.

eld in Western Australia (WA), the jammed-pack Forum and Field Day will also give growers the opportunity to see some of Australia’s newest sports stadiums, biggest public green spaces, learn how the WA growers are handling water restrictions while still growing top quality turf and visit one of WA’s best turf farms.

But the event isn’t all hard learning, with a Go-Karting team-building activity, a dinner cruise on the magnificent Swan River and plenty of networking opportunities for growers to enjoy.

One of WA’s most recognisable horticulturists and garden designers, Josh Byrne will kick-off proceedings at the Forum. He will discuss how important green space is in today’s cities, the 202020 Vision for increasing the amount of urban green space by 20 per cent by 2020, and the new campaign from the State’s Green Alliance. Both campaigns aim to bring together the nursery, garden and turf industries to show how important green space is from a mental health, environmental and social perspective. The Green Space Alliance campaign has recently launched an online video featuring a number of high profile horticulturists and is mounting a growing campaign to educate the wider public about the benefits of green space.

Will Pearce from the Sports Turf Research Institute, Queensland, will be presenting research on the Blue2Green system. The system – which features moulded plastic pods which interlock together under a turf installation - can handle heavy machinery driving over it, and effectively catches rainwater and holds it where the turf root system can reach and re-use the water. This negates the need for water tanks to be installed onsite, and reduces the irrigation requirements of the turf. Growers will see how they can use the system when installing turf to make it an even more environmentally friendly option for developments.

John Forrest, a horticulture/turf lecturer at Perth’s Challenger Institute of Technology for 20 years, will discuss education and research programs he has been part of and the results growers can use.

Research into the efficient irrigation of turf will be presented by the University of WA’s (UWA) Dr Louise Barton. At its turf trial area, the University has been conducting a number of research trials into the most effective irrigation methods and how soil amendments can improve irrigation efficiency and has had surprising results (see page 26).

Tendering for commercial jobs with local government is becoming a big part of turf farms businesses, so Warren Stephens from the City of Belmont Local Government Area (LGA) and chairperson of the UWA Turf Industries Research Steering Committee; and Hugh Gardner from the City of Swan LGA and Treasurer Sports Turf Association (WA) will be on hand to present information about how growers can interact and correctly tender for turf supply and installation projects. This valuable information will aim to make the tendering process more successful by ensuring growers know what should be included/excluded and how the Local Government system works when awarding tenders.

A visit to one of Australia’s most iconic public parks, Perth’s Kings Park, will highlight how turf can be managed in large spaces with high patronage. Park manager, Vini Kapur will explain the issues and solutions when overseeing turf in a space continually shared by the public, and the importance of handling turf management issues – particularly sting nematode. In the past, the Park’s turf has been struck with the microscopic beast however, trials using compost rather than chemicals have yielded impressive results.

Field Day activities involve inspecting some of WA’s newest sports complexes as well as hearing how growers interact and correctly tender for turf supply and installation projects. This valuable information will aim to make the tendering process more successful by ensuring growers know what should be included/excluded and how the Local Government system works when awarding tenders.

Growers can also venture into NIB Stadium and talk turf with turf manager, John Lockyer and then visit Perth’s other major stadium the Domain Stadium. The Domain Stadium’s Turf Services manager, Nathan Saville, will be on hand to discuss how the turf, at one of WA’s premier sports stadiums, formerly known as Subiaco, is managed and kept to a high standard.

Rounding-out the program will be a visit to Bullsbrook Turf farm, which features an innovative overhead irrigation system more commonly seen in South Africa. The Maas family have been growing turf at Bullsbrook for nearly 20 years and Nathan Maas will provide a farm tour and overview of the operations. He will also explain how pressure from the urban sprawl and increasing environmental regulations are being handled by their business.
### Date/Time Activity

**Sunday 28th August**
- **Afternoon/Evening** Delegates arrive at hotel
- **6.00pm** Welcome Dinner at Novotel Perth
- **8.30pm** Guest Speaker - Major Sponsor

**Monday 29th August**
- **7.30am** Breakfast
- **8.30am** **Speaker 1: Josh Byrne**
  - Josh Byrne and Associates & ABC Gardening Australia
  - Green Space Alliance
  - The future is bright for horticulture, including turf
- **9.15am** **Speaker 2: John Forrest**
  - Challenger TAFE
  - Turf education and research programs
- **9.45am** **Speaker 3: Will Pearce**
  - Sports Turf Research Institute
  - Up to 39% water saving in turfgrass by using the ‘Blue2Green’ system
- **10.15am** Morning Tea
- **10.45am** **Speakers 4: Warren Stephens**
  - City of Belmont LGA and chairperson of the University of WA’s Turf Industries Research Steering Committee.
  - Hugh Gardner
  - City of Swan LGA and Treasurer Sports Turf Association (WA)
  - Successful tendering for turf supply and/or installation jobs
- **11.30am** **Speaker 5: Dr Louise Barton**
  - University of WA School of Plant Biology
  - Water Management for turf
  - UWA Turf Research
- **12.10pm** Lunch
- **1.00pm** Leave hotel and travel to Kings Park
- **1.15pm** **Speaker 6: Viny Kapur**
  - Grounds Manager
  - Kings Park Botanical Gardens
  - Maintaining highly use turf successfully (including issues with Sting Nematode)
- **2.00pm** Leave Kings Park and travel to Belmont
- **2.20pm** Team Building Activity: Kart World Belmont
  - Monaco Challenge
- **4.30pm** Leave Kart World and return to hotel
- **5.00pm - 6.00pm** Free Time
- **6.00pm** Leave hotel foyer and walk to dock
- **6.15pm** Meet at dock
- **6.30pm** Forum Dinner opened by Major Sponsor
  - City of Lights - Swan River Cruise Networking
- **7.30pm** **Speaker 7: Darren Kirkwood**
  - Director West Coast Turf and chairperson of TGAWA
  - Challenges for the WA Turf production sector
  - The West Coast Turf story
- **9.30 pm** Return to dock

**Tuesday 30th August**
- **7.30am** Breakfast
- **8.30am** **Speaker 8: Adrian Pitsikas**
  - Director of Greenacres Turf Group
  - Hybrid Grass - production and installation
- **9.00am** Bus departs NIB Stadium and travels to Domain Stadium
- **9.30am** **Speaker 9: Nathan Saville**
  - Turf Services Manager, Domain Stadium
  - Challenges of managing WA’s premier sports turf facility
- **10.30am** Bus departs Domain Stadium and travels to Bullsbrook Turf Farm
- **11.30am** Lunch at Bullsbrook Turf Farm
- **1.00pm** **Speaker 10: Nathan Maas**
  - Manager Bullsbrook Turf
  - Bullsbrook Turf Farm story
  - Farm tour
- **3.30pm** Bus departs Bullsbrook Turf Farm

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**venue and cost details**

**venue:**
Novotel Perth Langley, WA

**when:**
Sunday August 28 – Tuesday August 30, 2016
(Fly into Perth airport on Sunday August 28)

**cost:**
See details in Registration Form (page 9)
speaker bios

Dr Louise Barton is a senior lecturer in the Faculty of Science at The University of Western Australia (UWA). Her responsibilities include teaching and conducting various research projects related to soil nitrogen cycling and sustainability. Louise joined the UWA Turf Research Program in 2001, and jointly coordinates the research program with Professor Tim Colmer. Her research interests include improving turfgrass water-use efficiency and developing management strategies for minimising nitrogen losses to ground water and the atmosphere. As well as turfgrass research, Louise also has a teaching role at the University. She is currently a senior lecturer in the School of Earth and Environment, lecturing on environmental science and soil science. She also coordinates agricultural science majors and supervises PhD students.

Josh Byrne is an environmental scientist best known for his role on ABC TV’s Gardening Australia program, where, over the past 13 years, he has demonstrated, to a national audience, the practical ways to create sustainable urban landscapes. He is a director of John Byrne & Associates, a multi-award-winning Freemantle-based consulting practice integrating the field of landscape architecture, build environment sustainability and urban water management. He is also a Research Fellow with Curtin University’s Sustainability Policy Institute where his research activities span high performance housing, water sensitive biophilic design and low carbon residential precincts. He is a former member of Horticulture Innovation Australia’s Industry Advisory Group for the Nursery and horticulture sector, with a specialist interest in drought-resistant species. Josh has also been a board member for the Nursery and Garden Industry and an advocate for the national 2020 Vision urban greening initiative.

John Forrest has worked as the agriculture/turf lecturer at Perth’s Challenger Institute of Technology for 20 years. He holds a Masters in Agriculture from the University of Sydney, and has a Trade Certificate in Golf Course Greenkeeping. He regularly lectures in the areas of soil science, nutrition, plant health and irrigation. He has conducted a number of research projects with industry and has demonstrated, to a national audience, the practical ways to create sustainable urban landscapes.

Hugh Gardener has worked in local government areas throughout Perth and regional Western Australia (WA) for more than 15 years in the horticulture/turf and horticulture sector, with active involvement with Sports Turf Association (WA). His passion is in sports grounds and in working to provide a higher grade community ground to encourage and promote physical activity. He has advised on the construction of playing fields, upgrades and changes to improve the quality of surfaces in numerous soil types. His passion extends to visiting sports grounds whilst on holidays to learn about different management practices.

Barren Kirkwood After completing a Bachelor of Commerce degree and attaining qualifications as a Certified Practising Accountant, Darren’s immediate family went into partnership to create a new turf farm in the Gingin area. In 2000, he took the opportunity to join his family on the turf farm and is currently the managing director of West Coast Turf, which has a production area of 40 hectares, producing seven varieties of turf. West Coast Turf has been involved in the establishment and maintenance of numerous turf facilities throughout the Perth metropolitan and regional areas. Darren has also been in the role as chairperson for the Western Australian Turf Growers Association since 2012, having been an active member of the association since he joined the family business.

Nathan Maas joined the family’s turf growing operation, known as Bullsbrook Turf and Greenfields Turf, after it was founded by his father John in 1999. Bullsbrook Turf operates two farms, one in Bullsbrook which has 34 hectares planted to turf, including Palmetto Buffalo, Empire Zoysia, Wintergreen and two Kikuyu varieties (a straight Kikuyu and Village Green). The original, which has 40 hectares in Greenfields Turf at Wanneroo, has 10ha sown to Wintergreen Couch and Palmetto Buffalo. Bullsbrook Turf has a unique overhead irrigation system set-up across 13ha of turf, which features irrigation lines hung beneath the sprinklers, allowing an element of variable rate irrigation. As the urban sprawl of Perth encroaches, and additional environmental conditions are placed upon Bullsbrook Turf, located in the Ellenbrook catchment area which is now considered a sensitive environmental area, the farm will continue to grow high quality turf.

Will Pearce has a Bachelor of Agricultural Science from the University Of Queensland (UQ) majoring in soil science and horticulture, specialising in turfgrass. He has worked with leading Australian turf researchers on a number of projects including the; EcoTurf project (a collaboration between the Queensland Government and UQ) and chemical phytotoxicity projects. During his time with the Queensland Government and Bioscience Australia he took a lead role with the design, construction and running of the project: Using turf for environmental control (Turf Levy Funded Project TU12022). Since undertaking his role as a research agronomist and trials manager at the Sports Turf Research Institute (STRI) Australian base, Redlands Research Station in Brisbane in 2014; he has designed, constructed, maintained and reported on a number of turfgrass research projects. Some of these include:

- The establishment, wear and shade tolerance of new seeded Green Couch cultivars.
- The phytotoxicity and efficacy of new industry pesticides on warm season turfgrass.
- The efficacy of home lawn fertilisers.
- The Blue2Green system, a new subsurface tanked wicking system (which will be discussed at the NxGen Forum).

Adrian Pitsikas Since establishing the Greenacres Turf Group with his brother and business partner Peter Pitsikas in 1990, Adrian has been instrumental in developing Greenacres into Western Australia’s (WA) largest turf farm. Greenacres is now a WA Registered Landmark with 120 ha in production at farms located at Serpentine (104ha) and its regional farm in Bunbury (16ha), employing 30 full time staff. Adrian holds Diplomas in Irrigation, Horticulture (Turf Management) and Business Management. In 1992, and then again between 2008 and 2012, he was elected president of the Turf Growers Association of WA. In 2001, Adrian was the foundation director of Turf Producers Australia, elected inaugural deputy vice president and served as secretary, treasurer and then chairman until 2013. During that time he was also the WA representative on the Industry Advisory Committee for turf under the umbrella of the former Horticulture Australia Limited. In 1995 Adrian was one of the founding members of the University of WA’s Turf Industries Research Steering Committee. He has continued to be a generous financial contributor to the turf research facility as well as mentor and in kind volunteer support for many research projects and initiatives. In 2015, Adrian was formally recognised by the Turf Industry for his long-term commitment to ensuring the entire industry benefits from Turf Levy investments and was inducted into the Turf Australia ‘Hall of Fame’.

Nathan Saville grew up in the Sydney western suburb of Penrith and prior to moving to Western Australia (WA), he worked at the Penrith Football Stadium. Nathan has been turf manager at Domain Stadium (formerly known as Subiaco Oval) for eight years. Domain Stadium is the home ground to the WA Australian Football League (AFL) teams, the West Coast Eagles and Fremantle Dockers. In his time as turf manager, Nathan has helped the ground host events including AFL games, international rugby union tests, National Rugby League games and World Cup soccer games. Nathan has attended two complete re-surfaces of the oval in 2010 and 2015 following major concerts.

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• The establishment, wear and shade tolerance of new seeded Green Couch cultivars.
• The phytotoxicity and efficacy of new industry pesticides on warm season turfgrass.
• The efficacy of home lawn fertilisers.
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Please complete **one form for each delegate** (payment may be made on one form)

**Registration details:**
- **Title:**
- **First Name:**
- **Surname:**
- **Job Title:**
- **Organisation:**
- **Ticketing Name/Title (if different from above):**
- **Postal Address:**
  - **Number/Street:**
  - **City/Suburb:**
  - **State:**
  - **Postcode:**
  - **Country:**
- **Contact Details:**
  - **W Phone:**
  - **Mobile:**
  - **Fax:**
  - **Email:**
- **Special Requirements:**

**Forum options and costs:**
This great-value forum and activity package has been generously sponsored and heavily subsidised by Horticulture Innovation Australia using the turf levy, and matched funds from the Australian Government, along with other turf industry supporters.

<table>
<thead>
<tr>
<th>FORUM OPTIONS (please circle appropriate costs and total)</th>
<th>Member Cost*</th>
<th>Non Member Cost</th>
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<tr>
<td>FULL REGISTRATION &amp; ACCOMMODATION PACKAGE** (must book by Monday 25th July)</td>
<td>$370</td>
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<td>WELCOME DINNER (Sunday 28 August) - BBQ at Novotel Perth Langley</td>
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<td>$100</td>
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<tr>
<td>DAY 1 ONLY (Monday 29 August) - Speaker Presentations, Kings Park and Team Building</td>
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<td>FORUM DINNER CRUISE (Monday 29 August)</td>
<td>$120</td>
<td>$135</td>
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<tr>
<td>DAY 2 ONLY (Tuesday 30 August) - Stadium tours and Field Day</td>
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<td><strong>TOTAL PAYABLE (all prices include GST)</strong></td>
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**Payment method:**
- **By Cheque:**
  - I’ve enclosed a cheque made payable to Turf Producers Australia Ltd.
- **By Credit Card:**
  - Check this box and complete credit card payment details (right).

**Send to:**
- **Mail:** Turf Australia, PO Box 92, Richmond NSW 2753
- **Fax:** (02) 4588 5613
- **Email:** admin@turfaustralia.com.au

**Credit card payment:**
- Total number of delegates to be processed on this payment: 
- I hereby endorse Turf Australia Ltd to debit this credit card to the value of: $ 
- **Card Number:**
- **Card Type:**
  - Visa
  - Mastercard
- **Expire:**
- **Verification No:**
  - (last 3 digits on card rear)
- **Cardholders Name** (as it appears on card)
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The rising popularity of synthetic sports and play surfaces has been the nemesis of Australia’s turf grass industry for the best part of 30 years. In the arid climate, the sales pitch of using less water than natural turf has been an easy one for synthetic turf companies to make ... and one which some of Australia’s turf growers have struggled to counteract.

Similarly, the argument that natural turf requires more maintenance has been a hard argument for growers to counter. But recently, health concerns about the rubber infill used in synthetic turf surfaces have come to light, raising questions about its safety. What can Australia’s turf growers do to ensure natural turf is installed instead of synthetic?

The simple answer is: Let the natural turf do the talking. Research has now shown that natural turf has a multitude of positives over the synthetic surfaces, mostly from playing, health, environmental and cost perspectives.

Does crumbed rubber infill cause cancer?

For years, concerns have been raised into the safety of the crumbed rubber infill which is made from recycled car tyres by users of the surface.

The suggestion that the infill poses a cancer risk to those who regularly use the surface piqued again late in 2015 and early 2016 when publicity over the safety of the surface gained momentum.

The United States (US) Synthetic Turf Council has continued to defend its product as safe, highlighting that more than 50 studies have been undertaken which show it has not been scientifically proven that athletes exposed to crumbed rubber have higher rates of cancer than the general population.

Research has also shown that crumbed rubber can contain toxic chemicals, metals and carcinogens, and in 2009, the US Environmental Protection Agency (EPA) studied crumbed rubber and found a number of potentially harmful substances in it, but not at levels to warrant anything other than a “low level of concern”.

However last year, former US women’s national soccer team goalie, Amy Griffin gained significant media attention with her anecdotal reports of the high numbers of soccer players suffering from cancer – predominantly goalies who have had closer contact to the playing surface than other players.
A goal keeper herself, Amy began tracking American soccer players with cancer in 2009 after noticing the number of children who had played soccer on synthetic turf becoming sick with cancer.

In 2014, she raised her concern on the national television broadcaster NBC, saying she had heard from 38 soccer players who had been diagnosed with cancer. By February 2016 with the media still following the story, that number had reached 220 athletes – 166 of those were former soccer players, 102 of those were former goalies.

It prompted the US EPA to back-away from its support of the 2009 research, and for the US Government to commission a study into the safety of crumbled rubber. It also led the US state of New York to ban crumbled rubber as a synthetic surface infill in all community fields (not the synthetic surface, but the infill).

While well aware of the hype surrounding the rubber infill, Marke said it wasn’t worth natural turf growers “running down an opposition product when natural turf has so many positives over synthetic”.

The US Federal Research Action Plan was announced in February 2016 and will see the EPA, together with the US Consumer Product Safety Commission and the Centre for Disease Control, examine how players on synthetic fields might be exposed through skin contact, inhalation and accidental ingestion of the crumbled rubber.

Natural turf environmentally superior

Dr Marke Jennings-Temple, Asia-Pacific operations director for the Sports Turf Research Institute (STRI), which researches sports surfaces for stadiums around the world, deals with both natural and synthetic playing surfaces, and advises clients on the most appropriate for projects – which includes advocating both surfaces.

Dr Jennings-Temple said the issue of health concerns about rubber infill was present in Australia, but said there simply were not a large number of fields which had the product.

The hype surrounding crumbled rubber had led to more synthetic playing surfaces in Australia using alternative manufactured infills, known as EPDM and TPE, which did not contain the heavy metals like the recycled car rubber infill.

“Natural turf is more environmentally friendly, it is carbon fixing, it’s a natural product, there is no carbon cost to natural turf, it significantly lowers the surrounding temperature ... the list of positives to natural turf is very long,” he outlined.

“The research has shown time and again there is not an issue with the rubber infill, but the US debate has certainly heightened the awareness for people in Australia,” he said.

“The results, even using the most conservative of data, have shown there is no increased risk of cancer playing on crumbled rubber infill, but the issue has continued to come up because it is a contentious one when it comes to player and children’s health.

“In Australia, a lot of synthetic surfaces use the alternative products, but they are significantly more expensive than the crumbled rubber ... and there certainly are crumbled rubber fields in Australia.”

But Dr Jennings-Temple said whatever the issue with synthetic turf was, natural turf was a superior product in so many ways, that turf growers should continue to sell the benefits of their product, rather than run down synthetic turf.

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“The research has shown time and again there is not an issue with the rubber infill, but the US debate has certainly heightened the awareness for people in Australia,” he said.
However, he said the success of natural turf being a better playing surface was determined by the correct ground preparation and varieties.

“The real issue with any sports injury,” Dr Orchard said, “was that the person making the decisions about what playing surface to install, or who prepared the surface, was never the person who paid the price of being injured.

“Artificial may be as safe as natural in cold climates, such as Sweden, but I think in hotter climates, like the US, natural appears safer for traction-related injuries.”

In his paper, Is there a relationship between ground and climatic conditions and injuries in football? published in 2002, he concluded: “Injury incidence in American football played on artificial turf has often been reported to be higher than in games played on natural grass. This review concludes that the most plausible explanation for all of these reported findings involves variations in playing surface characteristics.”

“Shoe-surface traction for the average player is the specific relevant variable that is most likely to correlate with injury incidence in a given game of football. Shoe-surface traction will usually have a positive correlation with ground hardness, dryness, grass cover and root density, length of cleats on player boots and relative speed of the game.

“It is possible that measures to reduce shoe-surface traction, such as, ground watering and softening, play during the winter months, use of natural grasses such as perennial ryegrass (Lolium perenne L.) and player use of boots with shorter cleats, would all reduce the risk of football injuries.”

In Australia, management of the natural turf is also a determining factor in injuries, Dr Orchard said.

“Even for natural grass there is more traction with some grass types over others,” he added.

“Ryegrass is probably safest.”

In his 1999 study of Anterior Cruciate Ligament (ACL) injuries to Australian Football League players, Dr Orchard concluded: “Low water evaporation and high rainfall significantly lower the risk of ACL injuries in AFL footballers. The likely mechanism is a softening of the ground, which lowers shoe-surface traction.

“Consistent extra watering and covering of grounds during periods of high water evaporation may lower the rate of ACL injuries.”

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Natural turf is cheaper

Economic studies have now shown it is cheaper to install and maintain a natural turf surface over the 30-year life span of a synthetic surface.

In 2012, the Victorian Department of Sport and Recreation released the document Artificial Grass for Sport. The guide was for use by sporting clubs, schools and local governments when they were considering developing new sports fields using synthetic turf.

ECONOMIC STUDIES HAVE NOW SHOWN IT IS CHEAPER TO INSTALL AND MAINTAIN A NATURAL TURF SURFACE OVER THE 30-YEAR LIFE SPAN OF A SYNTHETIC SURFACE.

The 155-page guide comprehensively covers how to decide on what synthetic surface to install, how to choose contractors to install it and how to manage the project from start to finish.

However, in economic analysis between natural turf and synthetic turf on various sporting fields, natural turf was consistently cheaper across all playing surfaces in both installation and maintenance over the lifetime of the field.

After breaking down the installation, annual maintenance costs and replacement costs – using the economic modelling data available at the time – a figure for the ‘whole of life’ cost of the fields was calculated.

For a soccer field, with a 10-year lifespan, the natural turf cost was $851,167, while a synthetic turf field was $1,128,996. For a 25-year cost of a soccer field, natural turf cost $1,671,667 while a synthetic field was $1,965,996.

It was similar for lawn bowls, the only discrepancy coming if the synthetic surface was sand filled, which protected it from damage.

Over 10 years, a natural bowling green would cost $376,667 and over 25 years $755,667. For a sand filled rink, costs would be $429,600 (10 years) and $753,000 (25 years) while a non-sand-filled green would be more expensive at $417,400 (10 years) and $764,500.

A natural turf hockey ground over 30 years would cost $1,710,000 while a commercially maintained ground would cost $2,320,000 and a club maintained ground would cost $1,870,000.

### Soccer - Whole of life costing comparison

Dimensions: 105m x 68m + 3m run offs = 111m x 74m = 0.82 ha

#### Natural Turf

<table>
<thead>
<tr>
<th>Construction</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Earthworks</td>
<td>$40,000</td>
</tr>
<tr>
<td>Drainage (5m spacing)</td>
<td>$40,000</td>
</tr>
<tr>
<td>Irrigation</td>
<td>$50,000</td>
</tr>
<tr>
<td>Concrete works, spoon drain</td>
<td>$8,000</td>
</tr>
<tr>
<td>Topsoil supply, placement and shaping</td>
<td>$140,000</td>
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<tr>
<td>Amendments</td>
<td>$5,000</td>
</tr>
<tr>
<td>Grassing</td>
<td>$11,000</td>
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<tr>
<td>Grow in (12 weeks)</td>
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<tr>
<td><strong>Total Cost</strong></td>
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<table>
<thead>
<tr>
<th>Annual Maintenance</th>
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<tbody>
<tr>
<td>Mowing (x 70 cuts)</td>
<td>$14,000</td>
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<tr>
<td>Fertilising (x 8)</td>
<td>$8,000</td>
</tr>
<tr>
<td>Pest control (weeds, insects: x 3)</td>
<td>$3,000</td>
</tr>
<tr>
<td>Aeration (verti drain x 2, slicing x 4)</td>
<td>$5,000</td>
</tr>
<tr>
<td>Irrigation (3 ML/year)</td>
<td>$3,000</td>
</tr>
<tr>
<td>Overseeding</td>
<td>$2,000</td>
</tr>
<tr>
<td>Topdressing</td>
<td>$7,000</td>
</tr>
<tr>
<td>Surface repair, sod goals (500m2)</td>
<td>$5,000</td>
</tr>
<tr>
<td>Repair - irrigation system</td>
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<tr>
<td>Miscellaneous</td>
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<td><strong>Total Cost</strong></td>
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<table>
<thead>
<tr>
<th>Replacement</th>
<th>Cost</th>
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<tbody>
<tr>
<td>Earthworks, levelling, minor drainage</td>
<td>$27,000</td>
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<tr>
<td>Amendments</td>
<td>$6,000</td>
</tr>
<tr>
<td>Grassing</td>
<td>$11,000</td>
</tr>
<tr>
<td>Grow in</td>
<td>$11,000</td>
</tr>
<tr>
<td><strong>Total Cost</strong></td>
<td><strong>$55,000</strong></td>
</tr>
</tbody>
</table>

**Replacement cost per year**: $3,667

Natural turf has an indefinite lifespan if properly maintained, generally resurfaced between 10 and 20 years.

#### Synthetic Turf

<table>
<thead>
<tr>
<th>Construction</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Earthworks</td>
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<tr>
<td>Base construction works</td>
<td>$138,844</td>
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<tr>
<td>Synthetic grass (including infill)</td>
<td>$355,158</td>
</tr>
<tr>
<td><strong>Total Cost</strong></td>
<td><strong>$570,996</strong></td>
</tr>
</tbody>
</table>

* Average cost of key suppliers for FIFA 1 Star pitch

<table>
<thead>
<tr>
<th>Annual Maintenance</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weekly cleaning</td>
<td>$10,000</td>
</tr>
<tr>
<td>Monthly grooming</td>
<td>$8,000</td>
</tr>
<tr>
<td>Annual surface treatment</td>
<td>$2,000</td>
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<tr>
<td>Miscellaneous</td>
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<td><strong>Total Cost</strong></td>
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</table>

<table>
<thead>
<tr>
<th>Replacement</th>
<th>Cost</th>
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</thead>
<tbody>
<tr>
<td>Uplift existing surface</td>
<td>$11,000</td>
</tr>
<tr>
<td>Disposal of existing surface</td>
<td>$11,000</td>
</tr>
<tr>
<td>Minor base repairs</td>
<td>$16,000</td>
</tr>
<tr>
<td>Synthetic grass</td>
<td>$200,000</td>
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<tr>
<td>Infill</td>
<td>$110,000</td>
</tr>
<tr>
<td><strong>Total Cost</strong></td>
<td><strong>$348,000</strong></td>
</tr>
</tbody>
</table>

**Replacement cost per year**: $34,800

Synthetics need to be replaced every 8 - 12 years.

#### Total cost of ownership: 10 years

<table>
<thead>
<tr>
<th>Cost of Ownership</th>
<th>Turf</th>
<th>Synthetic</th>
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</thead>
<tbody>
<tr>
<td>Construction</td>
<td>$305,000</td>
<td>$570,996</td>
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<tr>
<td>Maintenance</td>
<td>$510,000</td>
<td>$210,000</td>
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<tr>
<td>Surface Replacement</td>
<td>$36,667</td>
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<tr>
<td><strong>Total Cost of Ownership</strong></td>
<td><strong>$851,667</strong></td>
<td><strong>$1,128,996</strong></td>
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</tbody>
</table>

#### Total cost of ownership: 25 years

<table>
<thead>
<tr>
<th>Cost of Ownership</th>
<th>Turf</th>
<th>Synthetic</th>
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</thead>
<tbody>
<tr>
<td>Construction</td>
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<td>$570,996</td>
</tr>
<tr>
<td>Maintenance</td>
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<td>Surface Replacement</td>
<td>$91,667</td>
<td>$870,000</td>
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<tr>
<td><strong>Total Cost of Ownership</strong></td>
<td><strong>$1,671,667</strong></td>
<td><strong>$1,965,996</strong></td>
</tr>
</tbody>
</table>

Inflation has not been factored into any of these calculations. All costs were calculated in 2009 and are GST inclusive.

Source: Artificial Grass for Sport, Victorian State Government - Department of Planning and Community Development
**The Synthetic Turf Debate (continued)**

**Hockey - Whole of life costing comparison**
Dimensions: 91m x 55m + 5m run offs = 101m x 65m = 0.66 ha

### Natural Turf

<table>
<thead>
<tr>
<th>Construction</th>
<th>Item</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Earthworks</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Drainage (5m spacing)</td>
<td>-</td>
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<tr>
<td></td>
<td>Irrigation</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Concrete works, spoon drain</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Topsoil supply, placement and shaping</td>
<td>-</td>
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<tr>
<td></td>
<td>Amendments</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Grassing</td>
<td>-</td>
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<tr>
<td></td>
<td>Grow in (12 weeks)</td>
<td>-</td>
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<tr>
<td></td>
<td><strong>Total Cost</strong></td>
<td><strong>$400,000</strong></td>
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</table>

<table>
<thead>
<tr>
<th>Annual Maintenance</th>
<th>Item</th>
<th>Cost</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Mowing</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Fertilising</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Pest control</td>
<td>-</td>
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<tr>
<td></td>
<td>Aeration</td>
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<td></td>
<td>Irrigation</td>
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<tr>
<td></td>
<td>Overseeding</td>
<td>-</td>
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<tr>
<td></td>
<td>Topdressing</td>
<td>-</td>
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<tr>
<td></td>
<td>Surface repair, sod goals</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Repair - irrigation system</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Miscellaneous</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td><strong>Total Cost</strong></td>
<td><strong>$40,000</strong></td>
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<table>
<thead>
<tr>
<th>Replacement</th>
<th>Item</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Earthworks, levelling, minor drainage</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Amendments</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Grassing</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Growing in</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td><strong>Total Cost</strong></td>
<td><strong>$55,000</strong></td>
</tr>
</tbody>
</table>

**Total cost of ownership: 30 years**

<table>
<thead>
<tr>
<th>Item</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Construction</td>
<td>$400,000</td>
</tr>
<tr>
<td>Maintenance - $40,000 x 30 years</td>
<td>$1,200,000</td>
</tr>
<tr>
<td>Surface Replacement - $55,000 at yrs 15 &amp; 30</td>
<td>$110,000</td>
</tr>
<tr>
<td><strong>Total Cost</strong></td>
<td><strong>$1,710,000</strong></td>
</tr>
</tbody>
</table>

### Artificial Grass

<table>
<thead>
<tr>
<th>Construction</th>
<th>Item</th>
<th>Column 1 Cost</th>
<th>Column 2 Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Earthworks</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Base construction works</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Synthetic grass (including infill)</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td><strong>Total Cost</strong></td>
<td>$670,000</td>
<td>$670,000</td>
</tr>
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</table>

Lights, fencing, goals & accessories not included.

<table>
<thead>
<tr>
<th>Annual Maintenance</th>
<th>Item</th>
<th>Commercial Maintenance</th>
<th>Club Maintenance</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Weekly cleaning</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Monthly grooming</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Annual surface treatment</td>
<td>-</td>
<td>-</td>
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<tr>
<td></td>
<td>Miscellaneous</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td><strong>Total Cost</strong></td>
<td>$20,000</td>
<td>$5,000</td>
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</table>

<table>
<thead>
<tr>
<th>Replacement</th>
<th>Item</th>
<th>Column 1 Cost</th>
<th>Column 2 Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Uplift existing surface</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Base and shockpad repair</td>
<td>-</td>
<td>-</td>
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<tr>
<td></td>
<td>Synthetic surface system</td>
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<td>-</td>
</tr>
<tr>
<td></td>
<td><strong>Total Cost</strong></td>
<td>$350,000</td>
<td>$350,000</td>
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</table>

**Total cost of ownership: 30 years**

<table>
<thead>
<tr>
<th>Item</th>
<th>Column 1 Cost</th>
<th>Column 2 Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Construction</td>
<td>$870,000</td>
<td>$870,000</td>
</tr>
<tr>
<td>Maintenance $20,000 x 30 years</td>
<td>$600,000</td>
<td>-</td>
</tr>
<tr>
<td>Maintenance $5,000 x 30 years</td>
<td>-</td>
<td>$150,000</td>
</tr>
<tr>
<td>Surface Replacement $1,050,000</td>
<td>$1,050,000</td>
<td>$1,050,000</td>
</tr>
<tr>
<td><strong>Total Cost</strong></td>
<td>$1,671,667</td>
<td>$1,965,996</td>
</tr>
</tbody>
</table>

Inflation has not been factored into any of these calculations. All costs were calculated in 2009 and are GST inclusive. Source: Artificial Grass for Sport, Victorian State Government - Department of Planning and Community Development

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**Note 1:** The figures shown below are based on high quality sporting surfaces (sand dressed artificial grass and its natural turf equivalent).

**Note 2:** On the Artificial Grass side of the page, Column 1 shows the ‘worst case’ scenario for maintenance - all undertaken at commercial cost. Column 2 figures reflect most of the maintenance being undertaken by club volunteers.

**Note 3:** These figures represent 2010 costings, but are for ‘indicative’ purposes only. Therefore detailed cost breakdowns have not been sought.
Synthetic turf and its contribution to player injuries in the Australian Football League (AFL) will be the subject of an ongoing review after another injury was attributed to the surface this season. Liz Mecham explains.

An AFL investigation into the use of synthetic turf around natural turf playing fields came after an injury to Geelong player, Daniel Menzel who injured his ankle playing at Etihad Stadium by sliding into the boundary fence in early June. The Geelong forward said he felt the synthetic surface contributed to the injury because it allowed him to slide with speed into the fence.

A wide ring of synthetic turf, to allow for vehicles to drive on, begins within centimetres of the boundary line of the playing field at Etihad Stadium. A similar ring of synthetic turf is installed at the Melbourne Cricket Ground, however, it begins at least one metre from the boundary line.

The issue was already a hot topic with the AFL after Brisbane Lions forward, Michael Close suffered a season-ending knee injury on the Stadium’s artificial turf near the interchange bench last season.

An AFL investigation into that incident dismissed concerns that the turf had contributed to Close’s injury, similarly, the surface and its safety passed both the AFL and independent safety assessment tests in June.

However, the AFL has now formed a player Working Group to assess safety concerns from the playing group around synthetic turf.

THE PLAYERS ALSO FEEL THAT THE SYNTHETIC TURF IS HARDER AND MORE ABRASIVE THAN NATURAL TURF, LEADING TO MORE PAINFUL INJURIES WHEN LANDING OR SLIDING.

AFL Players’ Association.

The group will review the synthetic product involved at stadiums, the maintenance of it and how close it should be to the boundary line.

Geelong player, Jimmy Bartel, a Board Member of the AFL Players’ Association, said the issue had been addressed with the Association and a statement released, by the association, said players won’t be accepting things as they are, labelling the synthetic surface “like concrete”.

“I think in today’s age we can find something like a better alternative that has a little bit more give in it than that style of Astroturf,” Jimmy Bartel said.

“It is like concrete and if people saw how Dan Menzel hurt his ankle — he just slid across the top of it like when you’re running in footy boots on concrete.

“I think we can find a better alternative that makes it safer and very usable for all of the machinery.”

The Statement said it had asked every club for feedback on the “fake grass” and had raised concerns with the AFL “with a view to finding a better solution”.

“Players have expressed concerns regarding the proximity of the synthetic turf to the playing surface, which makes it more difficult to slow down and/or change direction, potentially contributing to injuries such as that suffered by Daniel Menzel,” the statement said.

“The players also feel that the synthetic turf is harder and more abrasive than natural turf, leading to more painful injuries when landing or sliding.”
Two Victorian turf farms are echoing what research is continuing to say: “That conscientious Work, Health and Safety management can make a farm more profitable by using an onfarm safety culture.” Liz Mecham speaks to both Evergreen Turf and Lilydale Turf to spell-out quite simply what growers can do to ensure that their safety culture pays-off.

**Case Study – Evergreen Turf**

When it comes to operating a turf business with clearly defined safe work practices, Evergreen Turf chief executive officer (CEO), Paul Mahoney doesn’t mince his words. "It’s a lot easier investing time in employees to get them to work and home safely, than spend your time at the Coroner’s Court," he strongly states.

To him, it is that simple.

Evergreen Turf has recently undergone the auditing and approval process and now holds Certification to International Standards ISO 9001 (Quality), 14001 (Environmental) and 18001 (Health & Safety).

“The integration of the three standards (Integrated Management System - IMS) provides for a more effective approach as policies and procedures are not managed in isolation but rather take into account the wider implications across the three standards,” Paul explained.

Pursuing the standards wasn’t necessarily about being better than other turf growers, but in a competitive market, could mean the difference between being engaged as a contractor, and not.

Paul makes no apology for pursuing a safety focus at Evergreen.

Taking on the CEO role two years ago, he has a background in senior management in the oil and gas industry, which has safe working practices ingrained in its culture.

“The idea that safety and learning safe work practices is time consuming is an interesting one because anyone can be taught a new way of doing things, and if you do it often enough, it becomes a learned practice and second nature … to the point where you never start a job without filling in a work card and assessing the safety aspects of a job,” he said.

“It is perhaps something that they didn’t have to do previously, but now our guys do as a matter of course.

“And at the end of the day, you are putting time into ensuring your employees, contractors and the wider community are safe … that’s not wasted time if it means they get home at the end of each day.”
Paul said the staff at Evergreen had accepted the changes brought about by the new workplace safety practices, because none were developed “on high and handed down”.

“We didn’t sit on high and hand down changes, the staff were part of the identification of safety issues and how they could be addressed … simple things like our head office is on a farm, with 2.5 kilometre dirt road access, and we looked at ways to make that safer,” he explained.

“There is now a speed limit and employees have headlights on so if dust is raised they can be easily seen. Those things have become standard practice now.”

The three International standards Evergreen recently achieved ensure the business and its 45 employees over two states (Victoria and New South Wales (NSW)) now have processes in place to document every job they complete.

Evergreen Turf operates a 48 hectare turf production/nursery farm in Victoria and another in NSW, and has a large landscaping operation, sportsfield construction and maintenance division, a major projects group which builds racecourses, elite sports stadiums and golf courses, and employs 45 staff.

Paul said at any time, staff could be operating in up to 20 different locations in Australia so operating under a single system was vitally important.

He said Evergreen had safety practices in place built up over the previous 30 years, but in the last two years, the system for identifying safety risks, developing mitigation strategies and continually reinforcing safe work practices has moved to the forefront of our thinking.

“Through the implementation of the IMS we have developed our underlying health and safety mantra which is ‘Stop, Think, Plan. Act.’ and our health and safety processes support this at all times,” he said.

It is displayed in all areas of operation from offices, to vehicles and plant and equipment. The system operates at a number of levels:

Policy: what do we aim to achieve?

Procedure: how do we do things?

Forms: what have we done?

“It requires us to have more robust documentation across our operations from Standard Operating Procedures (SOP’s) to Safe Work Method Statements (SWMS), risk assessments, staff training records, reporting and analysis,” Paul said.

“In terms of day-to-day functions, our staff members have to complete paperwork (soon via mobile phone) before commencing work (pre-start checks) and then at commencement (Job Start Card) and at any time issues may arise.

“The Job Start Card has become a key document as it asks staff to assess their job site, identify any potential risks, mitigate them and then work safely.”

SOPs and SWMS now operate over all of Evergreen’s activities, from harvesting to laying, operating a forklift, chemical-use and watering records – each step of the process is now documented.

Paul said the additional paperwork which came with being a safer workplace “is what it is”, but the business was moving to an online system in the near future, where all documentation will be able to be accessed and completed via a mobile phone.

The accreditation means Evergreen needs to continually assess its activities and practices and improve them where possible.

“The whole thing with the accreditation is you don’t just get it and then sit back on your laurels,” Paul stressed.

“There is a continuous process of self-assessment and improvement.”

Continued...
Case Study – Lilydale Instant Lawn

Lilydale Instant Lawn’s Occupational, Health and Safety (OH&S) manager, Denise Lusk has some sage advice for turf growers who are apprehensive about where to start when initiating or improving workplace safety on their farms. “Just start. Just take the first step … it feels like a big step … but once you start, you are on your way to a better safety culture,” she said.

It is advice Denise, who is happy to give out when it comes to workplace safety on turf farms, having refined their processes six years ago in their own business. The business is now accredited with CM3 (an OH&S/WHS accreditation business) and has accreditations for workplace safety through the Lawn Solutions Australia group.

Denise is a big advocate of sharing advice when it comes to safety, and promotes using state-based occupational/workplace health and safety authorities and associations to help improve operations. Lilydale Instant Lawn’s push to overhaul its safety procedures and culture came from a major client who had enlisted CM3 to ensure that any business they dealt with was OH&S compliant.

“But it was a fantastic opportunity to see how, as a business, our processes/procedures were. It took many months of work to raise our level to the high standard it is today,” Denise explained.

Documentation, reporting and reviewing is now a big part of Lilydale Instant Lawn’s safe operating procedures with its 30 staff across the entire gamut of the business, which includes four turf farms growing about 190ha of turf at Yarra Glen, Pakenham and Bairnsdale.

“We are not only farmers who grow turf, we are also in the logistics business as we also deliver the turf,” Denise said.

That meant the business needed to get across all the changes with the new National Heavy Vehicle Regulator when it came into operation last year.

“To do this,” Denise said, “we joined the Victorian Transport Association to get a better understanding of definitions and to ensure compliance with the logistic side of our business.”

Denise doesn’t shy away from the fact the initial learning curve when they started improving their processes and becoming accredited operators was a daunting one.

“It was a pretty intense three months, but it set us up so that we have the processes and systems now and we continue to review our processes, educate and train our staff. The safety culture at Lilydale Instant Lawn has certainly changed over the years, our staff now see the benefits of Lilydale Instant Lawn’s OH&S system,” she added.

Although at times Denise felt it was a slow process to change people’s mindsets on safety, “… it has been very worthwhile”.

Over the last two or three years, the business has had three visits to their different farms by WorkSafe. Denise said, although the visits still make her tense, she has found WorkSafe inspectors happy to help the business be more compliant.

“The inspectors are more than happy to go through your systems, give advice and recommend changes if needed,” she said.

“I use these visits to check out our systems and improve the safety in our business.

“The last inspector at our Pakenham farm ended her visit saying she wished other businesses would be as pro-active as we were.
Which made all the hard work worth it.

“At the end of the day, the workplace inspectors aren’t there to trap you, they will always be understanding and helpful if a business is trying to improve itself.

“However, if there was a serious accident or worse, I would not want to be sitting down with WorkSafe explaining how we had not got around to improvements.”

Denise also encourages growers who are unsure of where to start, to “just start”.

“Pick up the phone and ring another business who you know has a system in place and talk about how they do things,” she stressed.

“There is so much information out there now and unfortunately it’s still a bit piece-meal. But by looking around, and getting information from lots of sources, you can build a picture of what you can use and need.”

Some simple and effective changes have been creating what Denise calls, Lilydale Instant Turf Safety Centres. These are areas on each of the properties dedicated to OH&S which have not been costly to set-up, but cover all the day-to-day safety requirements for staff.

“In these areas, no matter which farm you are operating from, you will find all relevant SWMS & Risk Assessments, First Aid, Personal Protection Equipment, etc.,” she said.

At the end of the day, Denise said while she – and the business – had learnt and grown exponentially from six years ago when they went through their first accreditation, it had been a good process to undertake.

“For any small business it can be costly, but honestly you cannot afford, as a business, not to do it,” she urged.

“There wouldn’t be a turf business around that was operating with the same machinery or the same way they did when they started out … safety is the same.

At the end of the day, Denise said while she – and the business – had learnt and grown exponentially from six years ago when they went through their first accreditation, it had been a good process to undertake.

“Just because that’s the way you’ve always done it, doesn’t mean it can’t change.

“I’d like to think that turf farms are generally heading for a high level of safety across the board and this makes us proud to be a part of the turf industry.

“At the end of the day, it does mean more work, but neither Garry (Denise’s husband and managing director) nor I want to be the person to make the call to an employee’s family saying they’ve been injured or killed.”

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Further reading: LinkedIn profile of Denise Lusk, Managing Director of Lilydale Instant Lawn. Click here to read more: [LinkedIn profile link]

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Understanding the workplace trends in office environments might seem a long way from growing turf, but the trends, ideas, staff movements and employment of productive staff all resonate in the turf industry according to human resources company, wattsnext. Liz Mecham found out what growers can take away from improved human resource management.

While Human Resource (HR) management isn’t something many turf growers pay enough attention to, a company engaged by Turf Queensland (QLD) earlier this year has found some far-fetched HR practices are the turf industry’s biggest assets when employing and engaging staff.

wattsnext National Head of Delivery, Amy Evans addressed two Turf QLD workshops earlier this year on workplace trends, social media and succession planning.

While the three topics might seem as far apart as any, the sessions have been invaluable to turf growers who have been able to see how such things are not just office-based trends, but some of the key issues the turf industry is dealing with.

Amy explained that while some workplace trends, like office design, might have nothing to do with turf, the trend towards health and wellness and encouraging staff to have more fresh air and open space was something turf could capitalise on to attract the best employees.

Similarly, the turf industry’s position of having multiple generations working together can mean the trend of Generations X and Y using social media can be harnessed and used to turf’s advantage.

However, the high numbers of inter-generational family business structures in the industry also means the issue of succession planning can be a combative one for turf businesses.

“The Turf QLD workshop participants provided a good example of the many different generations currently employed on turf farms along with the current HR trends and the different ways in which each generation works,” Amy said.

“The world of business is a whole new one where, for the first time, we have five generations all working under one roof, and the trends in the workplace are being led by their different wants and needs, and particularly by the younger workers known as the ‘millennials’ who have very different wants in a workplace to previous generations.”

Social media

Amy said regardless of what industry a worker was employed in, social media was “becoming the norm” and those businesses without a large number of Generation X and Y employees “who are not embracing it, are being left behind”.

“Turf has an issue with attracting talented employees … but Generations X and Y want to see more than just pictures of a turf farm on a website, they want to see how and why turf farmers do what they do,” Amy said.

“You can use social media to market farms and the industry.”

The generational gap between social media users was evident, Amy said, when in the workshops the question of who uses social media to market their business was raised.

“We had two generations in the room at the workshops, and the younger generation were all on it, but the older generations don’t understand it, and don’t have anything to do with it,” she said.
"In some cases, they think they are too old to learn, but they are mistaken."

Amy said after explaining the way social media applications like Twitter, LinkedIn, and has, since, been an active user.

"The feedback on how growers can better use social media has been fantastic, and we’ve had growers get in touch with us to learn more about how it can benefit their business since the QLD workshops," Amy said.

"That shows growers want to know more, but the push to promote the industry through social media needs to be a whole of industry push to really sell the turf industry to the wider audience.

"In doing so, it can help attract the employees with the talent the industry needs, and promote the benefits of turf and the turf industry."

**The new age employee**

Amy said the way in which an employee worked had changed significantly with generations.

As much as 75 per cent of the Australian workforce is now made up of "millennials" – people born after 1990 – meaning understanding them as an employee was important for turf growers who employed them.

"There is a real trend towards third-space workplaces,” Amy said, "where employees work from a coffee shop, or multiple locations, and there is a lot more flexibility around where the workplace is.

"The turf industry needs to know what it’s competing against for employees.

"There is a tech savvy workforce out there that measures work completed by output, rather than hours spent in a workplace,” Amy also explained the "revolving door" of the workplace which showed younger generations would "job hop" and have five different careers over their lifetime.

It was something turf growers needed to be mindful of, and understand that younger employees were not going to have a long tenure in the one workplace if they didn’t feel valued.

"The feedback from growers was that if the younger employees were only going to be there for a short amount of time, was it worth investing the money in training them in the turf industry if they were only going to leave?" Amy said.

"Understanding how to keep an employee is a big thing. And the worst outcome is not training them but they stay.

"The younger employees will stay because they are engaged and valued in the workplace they are in, not just for the sake of it, like previous generations might have. Making employees feel valued is not hard or costly."

Amy also explained the new online portal known as, Glass Door, which allowed employees to rate employers with stars, like TripAdvisor, meaning any future employees could look up a turf grower to see how previous employees ‘rated’ them as a boss.

"Turf growers can’t escape the online trends like this,” Amy said, “they have to embrace it and be part of it.”

However, Amy said the turf industry, and agriculture in general, had a big advantage over other industries in the health and wellness trend which has seen employees want more fresh air, and open work spaces.

"That’s a big bonus for the turf industry, because the turf workplace is already out in the open and in the fresh air … how is turf competing again the plethora of other, office-based jobs?” she asked.

**Generational change**

When having at least two generations working in a turf business, discussion about how the different generations worked created much conversation between workshop participants, Amy said.

"Understanding the different ways in which the generations work can be beneficial to any business and there were certainly some trends which were evident in an office-based business and the turf industry,” she said.

This included the trend towards “reverse mentoring” where the younger generation mentored the older generation in areas they were skilled in, such as social media and technology, not just the older generation teaching the younger ones.

"There is a lot of reverse mentoring that can happen in the turf industry – on one side there is the technological knowledge and on the other there is the practical knowledge and the knowledge of building relationships – generations being able to mentor one another can be very beneficial to a turf business,” Amy stressed.

Amy said the session on succession planning was well received.

"Understanding what succession planning is and what it means to each individual business was well known, as was the legal and financial side of the planning, which many of the turf growers had undertaken,” she said.

"But it was the softer, more emotional side of the planning which many hadn’t done or understood.”

That included setting clear parameters around what the parents wanted out of the succession change and what the younger generation, who were taking over, wanted, what their visions and challenges were with the change, and the way it can impact family harmony.

**The high numbers of inter-generational family business structures in the industry also means the issue of succession planning can be a combative one…**

"What we have found talking about succession planning is that the younger generation expect a definitively ‘5pm on Friday’ retirement handover, when it actually needs to be phased-in for the older generation," Amy explained.

"And when there is conflict, while many businesses have the legal and financial plans in place, how to deal with that conflict and what measures a business should put in place to deal with, or avoid, it haven’t been handled well at all.”

"Each generation works through the change differently," Amy said, "And that’s ok, but there needs to be forms of acceptance on both sides of that.

"If there hasn’t been a good framework of understanding of the emotional aspect of the generational change and succession planning, then there can be a lot of angst caused."

Amy said setting parameters or frame works to deal with this can be as simple as well structured family meetings, or getting an unbiased and independent third party involved to work through any issues.
Variable Rate Irrigation (VRI) is about to have a big impact in the turf industry if the first installation of the technology at Australian Lawn Concepts (ALC) is any indicator of its ability to transform production. Liz Mecham reports.

“Easily I can say that it’s already saved us 10 per cent in water costs, and it will pay itself off within 12 months … and we’ve only been operating it fully for two weeks,” ALC’s John Keleher said, when explaining his new VRI system.

“If nothing else, it will save me the $20,000 a year I used to have to spend on gravel to fix roads which were sodden with the irrigator going over them and then trucks driving on them – straight away they aren’t being wet by the irrigator so I don’t have that cost of gravel.”

ALC’s decision to install VRI technology came when trying to find ways to improve productivity and yield on the Queensland (QLD) farm, rather than buying more land, and took 18-months of research into the New Zealand-developed product.

“We looked into precision agriculture because it is more economic to develop the land you already own than buy more, and we wanted to be more efficient with our use of the finite resource that is water,” John explained.

“We harvest turf on a square metre basis, sell it on a per square metre basis, but we irrigate on a 60ha basis.”

The VRI technology was retro fitted on a 10-year-old, seven-span (600 metre) pivot irrigator which covers a 60 hectare area on ALC.

“Under that pivot, John said, are three varieties of turf which all have different harvesting and irrigation requirements, not to mention soil types.

The installation of the system has seen new electronic taps fitted on each outlet which are connected to a GPS-system housed in a central control unit.

Computer-based management software has site soil type and variety information added to help manage the way in which the water is applied. Water is then applied at varying rates depending on where the pivot is geographically located on its circular lap. Variable flows occur from each of the individual taps along the length of the pivot span.

John said the system had already brought back into production areas which had been out of production, or low yielding.

“That 60ha area has so many different soil types, it ranges from sandy soil to heavy black soil to creek beds, and we were working around all that … constantly turning taps on and off and it was hard work, whereas now, the irrigator works around all of those things for us,” he added.

“Already we can see that where we used to have to try and work around an area that would easily get water logged, we can now just irrigate it for as much as it needs, and areas which had dried-off too much before harvest can have an irrigation without damaging areas around it.”

Scheduling the irrigation has also become a much less labour intensive operation.

“We literally had to go out at all hours and turn taps on and off – now I can do that from my phone or ipad when I’m sitting at home,” he said.

Granted, John said, there had been a steep learning curve for himself and staff with learning the programming of the new system and re-training themselves to a new way of irrigating.

“But all of that has also helped us have an even greater understanding of what our paddocks are really like,” he stressed.

The system has also come at a cost, but one much less than many expect.
For the 600m pivot span, the system cost ALC $60,000.
“When you break it down, that’s $10,000 per 100 metres, or $100 a linear metre, and when you can more effectively and efficiently grow every square metre of turf underneath it … it doesn’t take long to work out its going to pay for itself very quickly,” John explained quite convincingly.
“It will pay itself off for us within a year.”
Savings are also being seen in the form of water cost savings, with John suggesting 10 per cent savings would “easily” be achieved immediately, and when savings to the cost of roads were taken into account, along with bringing an additional five per cent back into production from noted wet areas, the benefits quickly added-up.
The Turf QLD Field Day held at ALC earlier in the year attracted growers from three states, with an estimated 90 people attending. John believed it was because there was a thirst for knowledge about precision agriculture in the turf industry.
“People in our industry are looking at ways they can be more efficient, increase their yields, and be more precise with what they are doing,” he said.
“VRI has great capacity in our industry to really give some benefits to growers, and at the same time, make us better users of our water resource.”

John Keleher will present at the Queensland and Victorian State Forums respectively on July 27 and August 25. For a copy of a State Forum program visit www.turf.australia.com.au
Variable Rate Irrigation – a productive new approach to precision agriculture

Innovative technologies including variable rate irrigation (VRI) were showcased at the recent Field Day held at Australian Lawn Concepts’ farm at Boyland in Queensland.

The Growsmart Precision VRI technology, installed on the property by Dover and Sons, is the first variable rate irrigation system utilised for turf production in Australia.

More than 75 growers from three states were on hand to see the potential for their own turf growing operations with variable rate technology.

One of the biggest challenges for the Australian turf industry has been growing and sustaining high quality, even turf on spatially variable soils with the traditional blanket irrigation application. Under this method, it is almost impossible to avoid damage to a turf area on the point of harvesting while continuing to deliver enough water to the remainder of the turf growing area.

This challenge can be overcome by using VRI technology, which can apply water when and where it is needed and reduce negative environmental impacts.

The irrigation requirements of turfgrass underneath a spray irrigation system can vary due to many factors such as species, growth stages, root zone characteristics and turf quality requirements. By using VRI, improvements to the quality of turf produced by delivering only the water the turf needs, while water savings can be achieved through a reduction in irrigation to heavier soils, less run-off and the better delivery of water to the turf growing area.

Concurrently, with a VRI system, irrigation can be completely avoided over pre-harvest areas, buildings, tracks, roads, waterways and non-productive areas. The Growsmart Precision VRI system allows growers to apply exactly the right amount of water to specific areas under your irrigator by individually pulsing sprinklers on and off, while also controlling the irrigator speed to modify the application depth along the length of the irrigator. Control of the irrigator speed and individual valves allows the amount of water applied to each area to be regulated, optimising water application.

A recent advancement announced by Lindsay is the integration of Growsmart Precision VRI with FieldNET® which provides complete remote pivot management, with VRI control, monitoring and reporting capabilities.

“The correct amount of water on every part of the field is essential for optimum, even turf growth,” Lindsay Regional manager for Australia and New Zealand (NZ), Richard Hall said.

“When coupled with FieldNET, Precision VRI gives growers the flexibility they need along with the efficiencies that result from full remote capabilities.”

Lindsay NZ will be working with turf growers in Australia and industry experts to produce a series of free fact sheets for growers answering the following questions:

• What is variable rate irrigation (VRI)?
• How can VRI benefit turf growing operations?
• What pre-planning is required if you are considering installing VRI technology?
• What is involved in the installation of a VRI system and setting-up the technology to optimise results?
• What help is available for growers to find further information and, once their system is installed, to ensure it is producing the best results possible? ©

For more information, contact your local Growsmart by Lindsay dealer, Lindsay’s Northern Australia territory manager, Philip Bell (philip.bell@lindsay.com), or visit www.growsmartprecisionvri.com

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Turf’s success with erosion control

Using turf as a barrier to trap sediment and act as an erosion control method is not a new theory, but a research project based around construction sites has given that theory some solid data to back it up. Shane Holborn explains.

The research project, Optimising turf use to minimise soil erosion of construction sites 2009/2010, was conducted by Dr Rob Lynch from LandLoch Consulting and, investigated the value of turf to stabilise the soil and trap sediment.

Conducted over the past five years, the research reinforced turf as an erosion and sediment control measure by quantifying its effectiveness.

The project was in response to the problem of soil exposure following earthworks in urban areas potentially causing significant, unwanted, soil movement. Soil was being lost from the site and sediment deposited into waterways, leading to increased levels of nitrogen and phosphorous and the growth of algal blooms.

Regulations state that developers must limit the movement of sediment from construction sites and turf can obviously assist with this.

Turf has been shown to reduce sediment movement in two primary ways:

1. By preventing soil from detaching from steeply-sloping areas, including ‘cut and fill’ slopes with steep inclines.
2. By trapping sediment.

If a slope can be prevented from eroding, sediment is also retained. The project found turf could be used to protect the soil surface when planted as full sod on slopes with a gradient of up to one-in-three.

Even in poor growing conditions where there was dispersive soil, root growth was found to be sufficient after eight days to prevent runoff by tunnelling under the sod and not lifting the turf. In areas where water was moving at speeds greater than 1.5 metres per second, reinforced turf was recommended.

Even in poor growing conditions with a dispersive soil, root growth was found to be sufficient after eight days to prevent runoff by tunnelling under the sod, with no lifting of the turf.

When planted from cut sod during summer, tests showed that Blue Couch, Soft Leaf Buffalo Grass, Green Couch and Kikuyu all developed a strong root system after 28 days. Once rooted into the underlying soil, all turf types were found to be highly effective in resisting both detachment and tunnel erosion.

The surface cover provided by full sod was sufficient to prevent soil movement when raining, or when overland flow occurred from very heavy rainfall (200 to 240 millimetres per hour).

Turf grass was particularly effective in trapping larger particle sizes (>0.05mm) and in reducing sediment in the 0.02 to 0.05mm range.

Even though the amount of sediment entering the system varied during the experiments, a relatively low concentration of sediment was measured in water that had passed through each of the tested, grass species.

Shallow or sheet flows were often found on uniform slopes away from concentrated drainage lines. It was also found that taller, broader-leaved turf was the most effective in trapping sediment suspended in shallow flowing water.

Soft Leaf Buffalo was optimal at a slightly higher flow rate compared to Kikuyu. However, other species such as Blue Couch, Green Couch and Zoysia were also found to be very effective and may have other advantages in relation to availability, cost or suitability to local conditions.

Turf grass was particularly effective in trapping larger particle sizes (>0.05mm) and in reducing sediment in the 0.02 to 0.05mm range.

Experimental work also suggested turf grasses used for sediment trapping should be mowed at the upper end of the normally recommended range for mowing height. Turf grass strips can be laid on the contour at the base of a runoff zone.

The size of the turf buffer strips was dependent on soil type and the amount of runoff. For most soils, a minimum strip width of 2m, but preferably 3m, is recommended. For highly permeable sandy loam soils, the strip width can be reduced to between 1 and 2m.

For more information refer to Turf Industry magazine Winter 2013 pages 8 – 10 or visit Turf Australia’s website: www.turfaustralia.com.au

This project has been funded by Horticulture Innovation Australia Limited using the turf levy funds and funds from the Australian Government.

Funded by the turf levy, Standards Australia has started the process of developing an Australian Standard for, The use and installation of turf as an erosion, nutrient and sedimentation control measure.

This exciting new initiative will result in turf being able to be specified in development and/or rehabilitation projects as an erosion, nutrient and/or sedimentation control measure.

The process of finalising the Australian Standard will take up to 16-months and this includes a nine week period of public comment once the Technical Committee has drafted the Standard.

Turf Australia is represented on the Technical Committee via Richard Stephens, the Business and Industry Development manager and a working group is to also be established with Lynne Davidson from Jimboomba Turf the turf grower representative.
The University of Western Australia’s (UWA) Turf Research Facility has, for the past two years, been investigating whether amending sandy soils will increase turf’s water-holding capacity. This investigation was in response to the ongoing challenge of keeping turf green, in WA, during times of limited water resources. The results, so far, of this three-year project show conflicting findings. Researcher, Pieter Poot reports on where the project is to date.

Maintaining turfgrass under limited water supply is challenging, especially in sandy soils (such as on WA’s coastal plain) which have a relatively low water retention capacity and a tendency to become water-repellent. During summer turfgrass, on sandy soils, is often dependent on frequent irrigation (for example, every two to three days).

Amending sandy soils with materials containing smaller particle sizes, such as clays, or which have a porous structure, for example zeolite, that stores water internally, has been shown to increase the water-holding capacity of these soils. These materials, therefore, are likely to, slow the movement of irrigation water beyond the root zone, increase the water in the soil that is available for turfgrass and decrease the demand for irrigation.

The aims of the current three-year project were to obtain independent evidence of the efficacy of a range of soil amendments in decreasing the irrigation requirements of turfgrass and to identify the mechanisms responsible for the variation in efficacy. The results from the first two years of the project, however, show that while soil amendments do help, the gains in some areas are cancelled out in higher losses in others.

The background
As a result of population expansion, many Australian cities are predicted to face water shortages due to, increased temperatures, declines in rainfall and an increased demand for water.

Western Australia’s capital city, Perth, might experience a substantial water deficit as early as 2020. More than 10 per cent of Perth’s annual water-use is associated with irrigating community parks, gardens and sports fields. In addition, a substantial fraction of household water is used for watering home gardens including turfgrass. Water restrictions have been introduced to both scheme water and bore water, in response to increasing water demands and declining rainfall.

Turf growers and home owners are, therefore, facing the ongoing challenge of maintaining turfgrass with less water. As there is increasing evidence that public and private green spaces are important for maintaining physical as well as mental health, developing approaches for maintaining turfgrass under limited irrigation is essential.

Setting-up the experiment
The research, conducted at the UWA Turf Research Facility at Shenton Park has sandy soil typical of the Perth metropolitan area.

Six amendment types, for example, five inorganic and one organic, as well as the corresponding inorganic/organic blends, were rotary hoed into the top 10 centimetres of the experimental plots which measured 2.5m by 3.5m.

Combined with untreated control plots, these 11 amendment treated plots were organised in blocks of 12 plots, with 8 blocks all together in the experiment.

Soft Leaf Buffalo (‘Palmetto’) was laid in late October 2013 and given three months to establish before commencement of two irrigation treatments; a low irrigation treatment administered twice a week (43 per cent evapotranspiration (ET) replacement; four blocks) and, a high irrigation treatment administered three times a week (65 per cent ET replacement; 4 blocks).

Results of the first irrigation cycle indicated that the plots with clay-type amendments (such as, bentonite and kaolinite) and those including compost had higher top soil water contents. Despite this,
Amendments used

<table>
<thead>
<tr>
<th>Amendment treatments included in the experiment. Values represent the percentage at which amendments have been added.</th>
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</thead>
<tbody>
<tr>
<td>Bentonite (5%)</td>
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<tr>
<td>Compost (10%)</td>
</tr>
<tr>
<td>Kaolinite (Ca and silt amended; 10%)</td>
</tr>
<tr>
<td>Ready Grif™ (10%)</td>
</tr>
<tr>
<td>Spongelite (5%)</td>
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<tr>
<td>Zeolite (5%)</td>
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Figure 1: Time course of turf colour as dependent on level of irrigation and amendment treatment in the second irrigation season. Dotted lines indicate the start and finish of the experimental irrigation treatments. Note that the black lines and symbols indicate the control treatment (i.e. plots without any soil amendments) and that a higher 'hue' value means a greener turf colour. Error bars are only shown for the control treatment for clarity reasons.

Figure 2: Weekly decline in soil volumetric water content following irrigation for the low irrigation treatment, as dependent on soil depth (0-10 versus 10-60cm) and particular week (1, 7, 16, 26) after starting the experiment (October 27, 2014). Note that the first two measuring points in each week (labelled 1 and 2) were obtained in the morning and afternoon after overnight irrigation, whereas the other three (labelled 3, 4 and 5), were measurements on day 2, 3 and 4 after irrigation, respectively. For amendment abbreviations and colours see legend to Figure 1.

Continued...
Do soil amendments reduce turf water use? (cont.)

Their greener colour at adequate water supply is likely a reflection of a higher nutrient availability. The slight delay in browning in some amendment treatments, as observed in the first summer, was not apparent in the second summer.

Soil water content: The loss of turf colour after the onset of the low irrigation treatment was strongly related to a reduction in top soil (such as surface 10cm) water content. By mid-December minimum weekly top soil volumetric water contents dropped to average values below 6 per cent for all treatments.

Conclusions to date

Results of the first two years of the amendment project have shown that compared to control plots many of the amended plots have:

1. Increased soil volumetric water content in the top 10cm of the soil.
2. Decreased infiltration of water to deeper soil layers.

However, the reduced loss of irrigation water to deeper soil layers in amended plots appears to be offset by increased losses of irrigation water through soil evaporation and/or turf transpiration. The lack of clear differences between treatments in both years of this project suggest that these processes (decreased deep drainage but increased initial evapotranspiration) cancel each other out.

This explanation may also elucidate why some of the amendment treated plots in the first irrigation season showed delayed turf browning. As the turf was young and establishing, root density in deeper soil layers would have been much lower in the first than in the second year, leading to larger irrigation water losses in the deeper draining control plots in the first year.

The above reasoning would entail that using amendments in the topsoil is only likely to reduce turf irrigation requirements in situations where root systems are still relatively shallow and/or irrigation volumes are large. In both cases a substantial part of the irrigation water would be lost through deep drainage which would not be the case if amendments were applied.

In addition, results of the first two years indicate that it does not seem possible to sustain soft-leaf buffalo grass at irrigation levels below 50 per cent ET replacement administered twice a week.

Where to now?

Hydrological modelling of water flows based on bare soils have corroborated that increased evaporative losses are likely from soils with amendments in the surface layer and have indicated that placement of amendments in bands deeper in the soil would minimize soil evaporation losses.

Therefore, we have established a soil column experiment to test whether deeper placement of amendment bands can indeed reduce turf irrigation requirements. Results of this new experiment will be presented in a future issue.

Acknowledgements

This project has been funded by Horticulture Innovation Australia (project TU13000) using the turf industry levy, with co-investment from the Water Corporation, a consortium of local government authorities, amendment product suppliers, Turf Growers Association (TGA WA), Sports Turf Australia (WA), the WA Land Authority and funds from the Australian Government.

In addition, in kind support has been provided by: Baileys Fertilisers, Turfgrass Fertiliser Supplier, Irrigator Repairs, M.E.Y. Equipment, Mower Supply, Mow Master and Mower Service.

Greenacres Turf Farm is thanked for providing the turfgrass for the research site and Darren Kirkwood from the TGA of WA for his support in the preparation of the field site. Members of the UWA Turf Industries Research Steering Committee are thanked for their support and advice.

University of Western Australia’s Turf Research Open Day (February 18, 2015). Pieter Poot providing an outline of the research results of the amendment project to a variety of stakeholders in the turf industry.
New Biosecurity Act 2015 to strengthen and safeguard Australia

Turf will fall under Australia’s new Biosecurity Act 2015, but for the most part, growers won’t notice a change or need to alter any of their activities. Liz Mecham looks at how the new Biosecurity Act 2015, which is seven years in the making, came into operation on June 16, 2016, and now replaces the century-old Quarantine Act 1908.

The Biosecurity Act 2015 sets-up new requirements and regulatory powers that will affect how the Department of Agriculture manages biosecurity risks associated with goods, people and items entering Australia.

In regards to the new Biosecurity 2015 Act, turf growers will be most impacted by changes to the terminology used when describing biosecurity issues, events and staff.

From a communication perspective, the Australian Department of Agriculture and Water Resources will no longer refer to ‘quarantine’, using “biosecurity” in almost all instances.

This includes the following:

- There are no longer Quarantine officers, they are to be replaced with biosecurity officers and biosecurity enforcement officers.
- Imported cargo, plant and animal material, will now all be referred to as goods.
- While the words aircraft, vessels and ships will still be used, so will conveyances, a new term defined by the Act that includes these modes of transport.
- The words biosecurity risk will be used rather than quarantine.
- There are no longer Quarantine Approved Premises or Compliance Agreements, which will be referred to as approved arrangements.
- References will be made to about the ‘person in charge’.
- Words like abandonment and forfeiture will be used, rather than seizing goods or conveyance.
- References will be made to a Biosecurity Import Risk Analysis or a BIRA and not about an Import Risk Analysis (IRA).

Those growers or researchers who import turf varieties will need to understand the new arrangements in terms of importing plant species.

This comes in the form of regulations around importing plant species, the way in which they are inspected, and the rules around biosecurity zoning of inspection premises.

Any turf growers who currently have Quarantine Approved Premises will have new arrangements and should contact the Australian Department of Agriculture and Water Resources for specific information.

In the event of a biosecurity outbreak, such as a disease or pests in the Turf industry, the Biosecurity Incident Management System (BIMS) has been developed to provide guidance on contemporary practices for the management of biosecurity incident response and initial recovery operations.

BIMS takes an ‘all hazards’ approach, meaning it can be used in response to pests and diseases that affect animals (including aquatic), plants, the environment (including the marine environment) or in response to vertebrate pest incursions.

This has not changed with the introduction of the new Biosecurity Act 2015, as the BIMS rests under the auspices of the Emergency Plant Pest Response Deed (EPPRD). Plant Health Australia is the custodian of the EPPRD, which is a legally binding agreement between Plant Health Australia, the Australian Government, all state and territory governments and national plant industry bodies.

Information about the new Biosecurity Act 2015 is available at: W: www.agriculture.gov.au/biosecurity T: 1800 900 090 or E: newbiosecuritylegislation@agriculture.gov.au

Fast tracking access to ‘top’ turf chemicals

By Liz Mecham

Turf growers wanting access to additional chemicals may have to wait a bit longer as the process for fast tracking chemical registration moves along.

Last year, the Improved Access to Agvet Chemicals for Agricultural Industries Project was launched to develop a sustainable approach for collaboration regarding Agvet chemicals between large numbers of agricultural industries and to streamline and improve the registration process for Australian producers.

Turf Australia, and other agricultural industry bodies, put forward a list of five chemicals it felt were the most important to have registered for the industry at an inaugural collaborative forum.

Last month a second forum, again to help define a list of chemicals of importance, was held and Turf Australia, once more, put up five chemicals.

The Forums have helped create a priority list of chemicals, which chemical companies – Australian and international – can use when planning their business development and future chemical investments.

The exercise has been instrumental in a number of chemical companies looking at their overseas turf-registered products and possibly fast-tracking some of these that can fill gaps identified through the forum consultation process.

Turf Australia agrichemical delegate, David Raison.

The list has also prioritised chemicals for further discussions, identifying their relative ease or difficulty in becoming registered.

“Some of the chemicals listed could be registered if international data can be used as proof of efficacy, rather than an Australian trial being needed, others will take a lot more work to get over the line,” Turf Australia’s agrichemical delegate at the Forum, David Raison said.

David said while the process means turf growers won’t have immediate access to chemicals, it had successfully opened up options for growers in the future.

“The (AgVet Collaborate Forum) exercise has been instrumental in a number of chemical companies looking at their overseas turf-registered products and possibly fast-tracking some of these that can fill gaps identified through the Forum consultation process,” he explained.

The chemical priority chemical list now has 10 chemicals listed for the turf industry which are predominantly foliar or pre-emergent herbicides.

Of those listed, two have received no support for registration and will be dismissed.

The remaining eight, however, have been listed as priorities to receive label or permit registrations.

Growers will have to wait until permits or registrations are issued before they can use the chemicals.

Agvet Collaborative Forum facilitator, Rohan Rainbow said priorities, solutions and registrant support could be amended through the Agvet grants application process for high priority pest issues identified on the priority list, for example, through changes from permit to label with written support from registrants.
Sydney’s Hawkesbury Valley region is a competitive one when it comes to growing and selling turf, but Liz Mecham learnt that for the Mifsud family operation, Rivers Edge Turf, start to finish service to clients is where you can create a point-of-difference.

A relative newcomer to the turf industry, Rivers Edge Turf began in 2009 as a joint investment between Jim and Mary-Doris Mifsud and their son, Jonathan. In 2012 another son, Michael, joined the business team, bringing with him skills as a diesel mechanic having completed his apprenticeship with Mercedes Benz between 2007 and 2011.

The business operates as a family-owned and run operation, with Jim, Jonathan and Michael in charge of the turf production, and Mary-Doris managing the business financials and marketing.

The turf industry had no connection to the family, but agriculture did. The idea to invest in the turf industry, Jonathan said, came after seeing the industry developing and having potential to build-on their experience in the vegetable industry.

Jim has worked in agriculture for the last 45 years, including the vegetable industry. Jonathan’s retail skills were honed while working-up to a management position in Woolworths between finishing school in 2004 until 2008, when the family’s turf idea began to take shape.

“We all decided on turf as it appeared to have growth opportunities and also, we all have the agricultural experience with growing things,” Jonathan said.

Full care service
Jonathan said the competitive nature of the turf industry in Sydney led the business to pursuing excellent customer service as their point-of-difference to other turf producers.

“We treat every job, whether it be residential or commercial, with the same care and professionalism, providing a whole start to finish package,” he explained.

The business services a whole range of markets, Jonathan said, including dealing with homeowners directly, and both commercial and residential landscaping clients, along with sporting field clients.

In regards to caring for their clients, Jonathan said having all of the information (about the job) at the start of the job was the key to a successful sale and installation.

“We like to make a point of getting the correct information required from potential clients, before they decide on a particular turf variety,” he said.

“These include questions like what is the size of the area, is it sunny or shaded, is there high traffic, and also the general turf aesthetics of what they are looking for, do they want a finer leafed turf, a spongy or thin finish … it all helps make sure the job is managed to what the customer’s expectations are.”

Jonathan added that: “Most turf types have their pros and con, and experience shows that factors other than a good price and/or availability of a specific turf type should be considered before being recommended to clients or potential clientele.”

The selection of turf on the farm has come from market research with what suits the largest range of clients, along with having the equipment to install a wide range of turf roll sizes.

“Our work also consists of supplying and installing turf to sporting venues and parks near and far from the Sydney area,” Jonathan said.

I would recommend growers get on board with as many programs that are available to them - they are great educational and professional networking tools for staff in the industry.

Rivers Edge Farm, Jonathan Mifsud.

PROFIE – providing service from start to finish
“Having the knowledge and equipment to carry-out larger projects is helpful.”

The large area jobs, Jonathan explained, made use of the business’ ability to supply, deliver and install maxi rolls of turf.

“The maxi rolls of turf are much less labour intensive and allow us to be more efficient with our time. This in turn reaps client satisfaction,” he said.

Varieties to suit the job

The 20-hectare Rivers Edge Turf farm is nestled on the fertile banks of the Hawkesbury River in Western Sydney.

The farm currently grows Sapphire Buffalo (2 hectares (ha), Kenda Kikuyu (3ha) and standard Kikuyu (6ha) with the balance of the property currently under cultivation.

The plan for the business is to have the entire 20ha planted under natural turf within the next 15 months.

Jonathan said the choice of turf varieties had been dictated by market demands, and the need to grow turf varieties that suited Sydney’s changing urban backyard market.

“We have found the Sapphire Soft Leaf Buffalo to be a great success in the residential sector of the business,” he said.

“This is mostly due to its nice, fine looking appearance, and tolerance to wear and shade, which has been a big factor in the ever shrinking Sydney courtyards and backyards.

“And, most importantly (to clients), it is low maintenance.

“Kikuyu varieties are popular with the commercial sector, like parks, industrial sites and other general larger open high wear areas, due to its vigorous growing habit in full sun situations.”

Always learning

As part of the business’ drive to remain competitive in the Sydney marketplace, Jonathan said he had been continually learning how to make his business more so, from a retail and financial perspective.

“Turf Australia has run some very informative programs in the past few years which we have taken advantage of,” Jonathan said.

“The Cost of Production Calculator Workshop was very insightful and we are currently using it in our business.

“We have found this to be of great assistance to help us be in the loop with our industry and to learn how to run our business in a more sustainable and profitable way.”

Continual learning is something Jonathan encourages other growers to do, with programs delivered by state bodies and Turf Australia integral to the wider turf industry.

“I would recommend growers get on board with as many programs that are available to them - they are great educational and professional networking tools for staff in the industry,” Jonathan stressed.

“This will help the turf industry nationally to thrive and grow into the future. Every turf business is better off if the industry improves its professionalism.”
Record attendance at Variable Rate Irrigation workshop

Queensland (QLD) turf growers have had a focus on new technology and innovation in recent months, with the roll-up at a recent workshop one of the biggest.

The May workshop featuring Variable Rate Irrigation Technology and Variable Rate Fertilising attracted one of the largest crowds ever seen at a Turf QLD event, with 90 people attending – travelling from as far afield as Sydney, Darwin and Cairns. The workshop featured the new Variable Rate Irrigator at Australian Lawn Concepts and the results of the Variable Fertiliser Spreading Work being undertaken at Golden Finch Lawns. The roll-up, highlighted the importance growers placed on learning about new innovation and technology.

Similarly, using current technology and social media was an eye-opening experience for growers, who learned how they could better use the tools at a workshop earlier in the year (see story about watts next on page 20). The QLD Industry Development Officer has now become a prolific ‘tweeter’ since the workshops and has been engaging with a wide range of consumers and industries. It has provided an excellent platform to educate the wider public about the turf industry through small snippets of information, correcting misinformation, and providing images to support the industry and its growers through positive promotion.

The Rural Water Use Efficiency Irrigation Futures (RWUEIF) Program supported by the QLD Department of Natural Resources and Mines is now underway in north QLD with centre pivots and lateral irrigators and pumps now all tested so baseline readings can begin for six months. After six months, data will be analysed and tweaks made to the system to see if more efficiencies can be gained. The benefits of the program have already been noticed outside the turf industry, and it is hoped there will be an extension of the program past its current July 2017 end date.

Results and case studies from the southern RWUEIF test farms are now available to view online at www.qtpa.com.au and make for interesting reading. The reduction in water use and thereby water costs and energy costs shown in the data was expected, but not so much the significant yield gains which were achieved. A lot can be taken away from these case studies by growers who can now see the tangible benefits of investing in efficiencies through technology.

WA on-show this August

West Australian turf growers continue to put a solid foot forward to ensure the industry is recognised as a positive contributor to the environment and the social fabric of Perth.

Turf growers in the State will also be the feature of Turf Australia’s NxGen Conference, being held from August 28 - 30, and have a great networking opportunity immediately thereafter at the State Forum on August 31.

One of the most high-profile activities that the turf growers have been involved in is the launch of Western Australia’s (WA) Green Space Alliance (GSA) promotional video. The video highlights the importance of green space in cities and features well known horticultural identities and the development of a discussion paper.

The recently released discussion paper entitled Improving Urban Liveability, addresses how urban planning and water management policy in Perth impacts liveability, as well as an associated position statement.

GSA has the overarching vision of: “To live in a community that values green spaces at its core, which deliver benefits to everyone through improved health, wellbeing and liveability by using innovative water and urban planning solutions.”

GSA members include the Australian Institute of Landscape Architects (AILA), The Australian Institute of Horticulture (AIH), The City of Belmont, Landscape Industry Assn WA (LIJAVA), Nursery and Garden Industry Assn WA (NGIAWA), Parke and Leisure Assn WA (PLAWA), Sports Turf Assn (WA) (STA (WA), Tree Guild WA and Turf Growers Association WA (TGAWA).
Observers and active participants include; The Department of Sports and Recreation WA, The Department of Water WA, Water Corporation, Horticultural Media Association WA (HMA WA) and The Urban Development Institute of WA (UDIWA).

To view the GSA papers and the video go to http://www.parklandwa.org.au/1034/green-space-alliance

As previously mentioned, the State will be on show during August when the under 40 turf growers visit as part of the NxGen Conference. Perth’s great stadiums – Domain Stadium and NIB stadium – will feature, along with some interesting speakers helping growers understand how to sell their turf into local government and the broader public through effective promotion of turf’s benefits and latest research and innovations.

The event will be a great opportunity for young WA growers to network with their eastern state counterparts without having to leave the state. For more information on the NxGen Conference see pages 6-9. Immediately following NxGen is the WA State Forum. Again, another great networking opportunity for growers to get together and catch-up while hearing from interesting speakers. More information about the event will be distributed closer to the date, but put Wednesday, August 31 on the calendar. The day will run from 2.45-8.30pm and cost $55 for TA members ($75 for non-members) includes all presentations, afternoon tea, dinner and networking drinks.

For more information contact Eva Ricci M: 0422 120 990, T: (08) 9437 2180 or E: idowa@turfaustralia.com.au

Education high on the radar for Victoria

Ensuring turf and green space is included in any government planning has been high on the agenda for Victoria in recent months. A submission supporting the State Government’s Department of Environment, Land, Water and Planning Water for Victoria discussion paper has been completed. The strategy lays out the ideology for how the Government looks at water use across the State. Pleasingly, there is the acknowledgement of the importance of water to users in agriculture and horticulture. It also identifies the importance of green space to mental health and community wellbeing and the importance of keeping them green. The submission supports the Government’s acknowledgment of this and suggests ways in which it can be even more supportive of the turf and nursery and garden industries.

Growers are encouraged to support the use of the Economic Framework for Green Infrastructure Document (highlighted in the last edition of the magazine) to help local governments value green space. The document helps put an actual value on green space, which is often hard to value as it has no direct economic benefit to the Local Government area, but is significantly valuable to the community aesthetics and health. Copies of the document can be viewed and downloaded from https://www.yu.edu.au/sites/default/files/cses/pdfs/green-infrastructure-economic-framework-summary-report-fin.pdf

The Victorian State Forum for turf growers will be held on Thursday, August 18, at the RACV Healesville Country Club. The afternoon/evening event is an excellent networking opportunity for growers to get together and hear from a range of speakers. The forum will run from 12.30pm to 8.30pm and cost $55, which includes all presentations, lunch, afternoon tea, networking drinks and dinner. Further information about the event will be available via the eNews bulletins.

In the lead-up to the State Forum, the telemarking with Kevin Kosky will be held on August 24. When held in other states, these workshops received rave reviews for giving the staff who answer customers enquires a variety of tools and a simple method to better interact with customers over the phone. To register contact the Victorian IDO at E: david@ngiv.com.au

Also on the learning front, growers can take advantage of the Small Business Victoria workshop program being run in conjunction with the Nursery and Garden Industry Association of Victoria (NGIV). The workshops are an excellent avenue for gaining more business skills for growers. On July 11, the workshop will focus on Employing people the right way, on July 21, Keep the Cash Flowing; August 17, Improve Your Time Management; and on September 5, Developing an Online Strategy. All workshops are held at the NGIV office in Malvern East. To book, contact E: ngiv@ngiv.com.au

Promotional activities for turf in the future include growers participating in the Better Homes and Gardens Live Expo at the Melbourne Convention and Exhibition Centre on October 14 - 16, while the Victorian IDO will be on radio during August, spruiking the benefits of turf and green space on 3AW with Jane Edmanson.

For more information contact David Reid T: (03) 9576 0599 or E: idovic@turfaustralia.com.au

New South Wales

Soils providing important information for growers

New South Wales (NSW) is finally experiencing some winter weather after a very long summer and season for turf growers. Hopefully these cooler months will give growers a chance to recuperate from the busy season and, no doubt, have some much needed family time.

The Turf Australia State Forum is heading to NSW on August 16, at Oakville House, Oakville, near Windsor. It will be a good opportunity for growers to obtain some great information and tips on improving business profitability. One of the subjects planned for the NSW Forum is a review of the results from the Turf Nutrition Project run by Turf NSW and Greater Sydney Local Land Services. This project was established as part of a Turf Capacity Building Program and, with a lack of turf farm nutritional research, it was felt this project would provide both growers and the general industry with valuable information. The project included soil and tissue testing on 17 turf farms in NSW with 34 samples collected.

The results indicated that most sites displayed soil with a deficiency in Nitrogen reserves. Other deficiencies occurred, on a smaller scale, including Potassium. At most farms, tested pH and salinity were not identified as a problem. Each farm involved in the Program will receive a detailed report with recommendations that assist in improving the soil and plant health as well as how to reduce the chances of leaching important nutrients.

Growers are also encouraged to continually review the health of their soil and turf as part of their business practices and continue to maintain correct nutrient levels, increase growth capacity and avoid problems. Dr Mick Battam, who was involved in the testing and report for the Project, will present results at the August 16 Forum.

The NSW Industry Development Officer recently attended the Australian Turfgrass Conference in Melbourne and heard some great presentations on techniques and advancements in sports turf management. The event also was a great networking opportunity.

With a focus on working with government bodies and industry groups, Turf NSW has also recently been involved in the Agvet Chemical Prioritisation Workshop held at Canberra as well as the NSW Bio Security Forum held at Sydney.

A strong reminder is sent to turf growers to ensure that all requirements and regulations for pesticide use, storage and handling are adhered. Recently, the Environment Protection Authority NSW (EPA) issued fines and 44 official cautions to eight turf farming premises in the Hunter Valley, following completion of the Hunter Pesticide Compliance Program. Turf NSW continues to work hard to ensure members are informed and given opportunities for training in this area. We will also continue to work with the EPA to assist in providing the relevant information to our members, so please refer to the Turf NSW website at www.turfnsw.com.au or EPA website at www.epa.nsw.gov.au for more information and the regulations.

For more information contact Jenny Zadro M: 0408 441 119 or E: ido@turfnsw.com.au
So, you think you know about turf?

Turf Australia has recently showcased the benefits of natural turf through presentations and exhibits at a variety of Landscape, Sports and Urban Planning conferences and conventions. What was obvious at these events was the majority of specifiers who had no idea of the many benefits of natural turf, or how to quantify these benefits. Richard Stephens, Business, Industry and Development manager, explains how the turf industry must now do a lot of marketing to “open these specifier’s eyes” to the virtues of turf.

The fact that town planners, architects, property developers, urban designers and even some landscape architects are oblivious to the many benefits of natural turf only means one thing – the whole industry must turn some of its marketing focus to educate these groups.

It has potentially become one of the biggest marketing issues that the turf industry must address. As a result, Turf Australia will work with Horticultural Innovation Australia (HIA) to ensure that some of the marketing funds are directed at educating and informing ‘specifier’s’ and specifiers, I ran a Q&A.

In addition, individual turf business need to ensure all existing and potential customers are aware of the many specific facts and figures related to the benefits provided by turf. Specifiers need this information so they can justify the allocation of space and funds are directed at educating and informing ‘specifier’s’ and specifiers.

The many environmental benefits of turf

Levy funded research has shown that there are four key areas where the environment benefits from natural turf: Water quality, Atmosphere quality, Land quality and Other.

Natural turf improves water quality by: filtering and purifying ground water; reducing runoff; and; harvesting and trapping water to provide ground water recharge.

Turfgrass has been proven effective for removing pollutants and chemicals from ground water runoff. Also, the turfgrass canopy acts as a sponge and can absorb large amounts of water and increase the rate of ground water recharge.

So, as I did during my various presentations to these specifiers, I ran a Q&A.

There are 25 questions among the dialogue below that demonstrate some of the many benefits of natural turf, the answers are provided at the end. Test yourself and all potential customers are aware of the many specific facts and figures related to the benefits provided by turf. Specifiers need this information so they can justify the allocation of space to turf and, more importantly, be able to validate the purchase of the more valuable turf varieties.

So, I did during my various presentations to these specifiers, I ran a Q&A.

Question 1 (an easy one to start): Which of the following ground covers provides the highest levels of water filtration, purification and run-off reduction?

a) Concrete
b) Synthetic grass
c) Pavers
d) Natural turf or lawn

Our atmosphere quality benefits from natural turf because:

- As a living plant, turfgrass absorbs carbon dioxide and generates oxygen.
- Lawn maintenance, including mowing, uses substantially less carbon than the 1.2 tonnes of carbon sequestered, per hectare, per year by turf or a healthy lawn.
- Turfgrass also reduces air pollution via entrapment.

Question 2: How many m² of healthy turfgrass provides enough oxygen for a family of four?

a) 15m²
b) 30m²
c) 50m²
d) 75m²

The land quality benefits provided by turfgrass include:

- A reduction in nutrient movement, such as, absorbing nitrogen and phosphorous.
- Providing an effective, cheap and durable form of erosion control, because of the dense root system.
- Soil improvement and restoration.
- Support for a large population of soil flora and fauna, microorganisms and earthworms.
- Providing significant alleviation from the affects from urban heat islands.

Turbidity is a measure of sediment loss or erosion from a dedicated area. Erosion Control Research conducted at Redlands Research Station in Cleveland, Queensland, compared the turbidity of the run-off from six plots with different sediment and erosion control options. Each plot, was 3 by 10m with an 8 per cent gradient. The plots consisted of: full turf; turf strips; coir logs; silt bags or socks; hydromulch (hydro spray grass) and; bare soil.

Questions 3 to 8:

From the most amount of turbidity in the run-off to the least, or the most erodible to the least erodible, place the following in the correct order:

a) Full turf
b) Turf strips
c) Coir logs
d) Silt bags or socks
e) Hydromulch (hydro spray grass)
f) Bare soil

An example of the erosion control capacity of turfgrass is in, and around, New Orleans, Louisiana in the United States (US). Three thousand miles of levee banks have been strengthened by Couch turf grown through reinforcement mats to ensure their integrity. This was following the catastrophic failure of the New Orleans levee banks during August 2005 after hurricane Katrina.

Various levee bank strengthening options, including concrete, were trialled against each other. The sheer weight of concrete meant they sank into the soft Louisiana ground which reduced their overall effectiveness. Research carried-out at the University of Colorado, in the US, found Couch turf covered slopes, grown through turf

So, you think you know about turf?
reinforcement mats, could withstand more than 12-hours of constant, high velocity, flooding without sustaining any damage.

**Alleviation from the effects of ‘urban heat islands’**

Natural turf has been described as nature’s air conditioner by reducing temperatures in two ways; providing shade of heat absorbing surfaces, and dissipating heat through evapotranspiration. Also, research from the United Kingdom found that turf coverage in areas more than 5000m² can have a greater cooling effect than tree canopy.

**Questions 9 to 12:**

On a hot Summer’s day, place the following surfaces from hottest to coolest:

- a) Bare soil
- b) Concrete
- c) Natural turf
- d) Synthetic grass

**Other environmental benefits** of turfgrass include: noise and glare reduction; fire prevention and; biodiversity and ecosystem services.

**Questions 13:**

Based on US research, 21m of turfgrass near a roadside can abate vehicle noise by up to:

- a) 10%
- b) 20%
- c) 30%
- d) 40%

**Social and community benefits of turf**

There are many social and community benefits of turf, including how open green space, promotes physical exercise, improves mental health and provides a pleasant and useable space for community interaction and engagement.

The Husqvarna Annual Global Green Space Report surveyed almost 5000 respondents worldwide, and discovered:

- a) 88% consider access to green space is a human right.
- b) 75% say getting some fresh air boosts their work performance.
- c) Family; access to nature; plants and green space are the top three contributions to happiness and wellbeing.

**Question 14:**

The European Quality of Life survey of 21,294 residents showed that respondents who had good access to green areas had an improved mental health rating of:

- a) 20%
- b) 30%
- c) 40%
- d) 50%

**How consumers value turf**

Research shows Australian consumers value the many benefits of turf, because they believe it:

- Softens the look of the home.
- Adds value to the home, by up to 18 per cent, a figure that was verified by a survey of LJ Hooker Estate Agents which showed that homes with a healthy lawn can receive 15-18 per cent more dollars.
- Provides an ideal surface for the family.
- Is attractive and stylish.

**Questions 15 to 19:**

When 2000 Australian consumers were asked: “Do you know the cost of 1m² of natural turf, supply only”, what percentage said:

- 15) Don’t know
- 16) Less than $5
- 17) $5 - $10
- 18) $10 - $15

Make sure you look at the answers to these questions because they may surprise you.

**How the cost of turf compares with alternative ground covers**

The Department of Sport and Recreation, in Western Australia, compared the total cost of natural turf and synthetic sports fields over 25 and 50 years. While natural turf requires mowing, fertilizing and irrigating, synthetic grass requires regular cleaning, moss and algae prevention, seam and joint inspections, infill monitoring and maintenance as well as watering. A consistent moisture levels in the sub base material as well as to prevent overheating during the summer.

The Department’s cost comparison (installation and maintenance) of natural turf versus synthetic sports fields over 25 and 50 years found the following:

**AFL/Cricket:** Synthetic grass is more than triple the cost of natural turf.

**Hockey:** Synthetic grass is approximately 25 per cent more expensive than natural turf.

**Lawn Bowls:** Synthetic grass is more than double the cost of natural turf.

**Rugby:** Synthetic grass is more than double the cost of natural turf.

**Soccer:** Synthetic grass is more than double the cost of natural turf.

**Tennis:** Synthetic grass is cheaper than natural turf.

The Guideline Schedule of Rate for Landscape Works, published by the Landscape Association of New South Wales and the ACT has enabled the comparison of the average cost of various ground covers, including allocations for: site preparation; underlay; soil; surface preparation; supply; install and optional finishing.

**Questions 20 to 25:**

**Including site preparation, supply and installation for 100m² of ground cover, what is the cost range for:**

- 20) Concrete
- 21) Sandstone
- 22) Synthetic grass
- 23) Pavers
- 24) Mass garden plantings
- 25) Natural turf

The bottom line is natural turf is the cheapest ground cover option, by a big margin. Even the high end of natural turf is cheaper than the low end of any alternative.

Turf Australia developed a Ground Cover Area Calculator, which sits on our website www.turfaustralia.com.au enabling anyone to enter the proposed ground cover area.

**To sum up, Natural Turf:**

**Has a cooling effect:** Temperature on a lawn in midsummer can be 40°C less than synthetic grass!

**Is environmentally friendly:** Improves water quality, absorbs carbon dioxide and produces oxygen.

**Promotes wellbeing:** Open greenspace promotes physical exercise and improves mental health.

**Uses less water than you think:** Drought-tolerant and water-efficient options are available.

**Is a natural product:** Self-replenishes, provides a natural fire barrier, reduces noise and can increase home values by up to 18 per cent!

For more information:

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**Answers:**

1 = d  
2 = a  
3 to 8 = f, c, d, b, e, a  
9 to 12 = d(40 hotter), b(20 hotter), a(10 hotter), c(natural turf)  
13 = d  
14 = c  
15 = 55%  
16 = 4%  
17 = 10%  
18 = 12%  
19 = 20%  
20 = Concrete $8000 to $15,100  
21 = Sandstone $18,100 to $25,600  
22 = Synthetic grass $5675 to $27,925  
23 = Pavers $23,000  
24 = Mass garden plantings  
25 = Natural turf a measly $2520 to $3175.
State Forums are soon to rollout across the country with social media, variable rate irrigation, simple accounting techniques that improve profitability and the latest in turf’s nutrition programs all packed into the agenda.

Hosted by Turf Australia and the State Turf Associations, all forums, except Western Australia’s (WA), will run from 12.30pm – 8.30pm. At $55 a head for TA Members ($75 a head for non members) this includes all presentations, lunch, afternoon tea, dinner and networking drinks and provides great value.

Queensland (QLD) is the first to rollout on July 27, at The Sebel, Pelican Waters, near Caloundra.

With Social Media in some cases becoming as important as a grower’s harvester, at all State Forums, Cynthia Mahoney will spell-out the concept quite simply and explain how turf growers can generate more business by using it.

John Keleher from AHC will be at the QLD and Victorian Forums to give growers an insight into using variable rate irrigation for the first time on a turf farm and how savings can be made.

Mick Battam from AgEnviro Solutions will tell New South Wales (NSW) growers about the final results from the recent Turf Nutrition Program.

While accountant, Greg Sharpe will outline how simple accounting techniques can use your taxation figures to improve profitability at the QLD, NSW and Victorian Forums.

Growers will also hear how the invaluable turf levy is being used to make growing more profitable through the various research, development and marketing programs being managed by Horticulture Innovation Australia.

And most importantly, you will be able to catch up and network with fellow turf growers and colleagues from our great industry!

FORUM DATES

<table>
<thead>
<tr>
<th>State</th>
<th>Date</th>
<th>Time</th>
<th>Venue</th>
</tr>
</thead>
<tbody>
<tr>
<td>QLD</td>
<td>Wednesday July 27, 2016</td>
<td>12.30pm – 8.30pm</td>
<td>The Sebel, Pelican Waters, near Caloundra (take advantage of the special corporate rates and spend the night)</td>
</tr>
<tr>
<td>NSW</td>
<td>Tuesday August 16, 2016</td>
<td>12.30pm – 8.30pm</td>
<td>Oakville House, Oakville, near Windsor</td>
</tr>
<tr>
<td>VIC</td>
<td>Thursday August 25, 2016</td>
<td>12.30pm – 8.30pm</td>
<td>RACV Healesville Country Club</td>
</tr>
<tr>
<td>WA</td>
<td>Wednesday August 31, 2016</td>
<td>2.45pm – 8.30pm</td>
<td>Ambrose Estate, Wembley Downs</td>
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• E: admin@turfaustralia.com.au  
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