AUSTRALIAN
Turfgrass
MANAGEMENT

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CHEMICAL WASHDOWN

RESEARCH RAP

volume 3.4
August - September 2001

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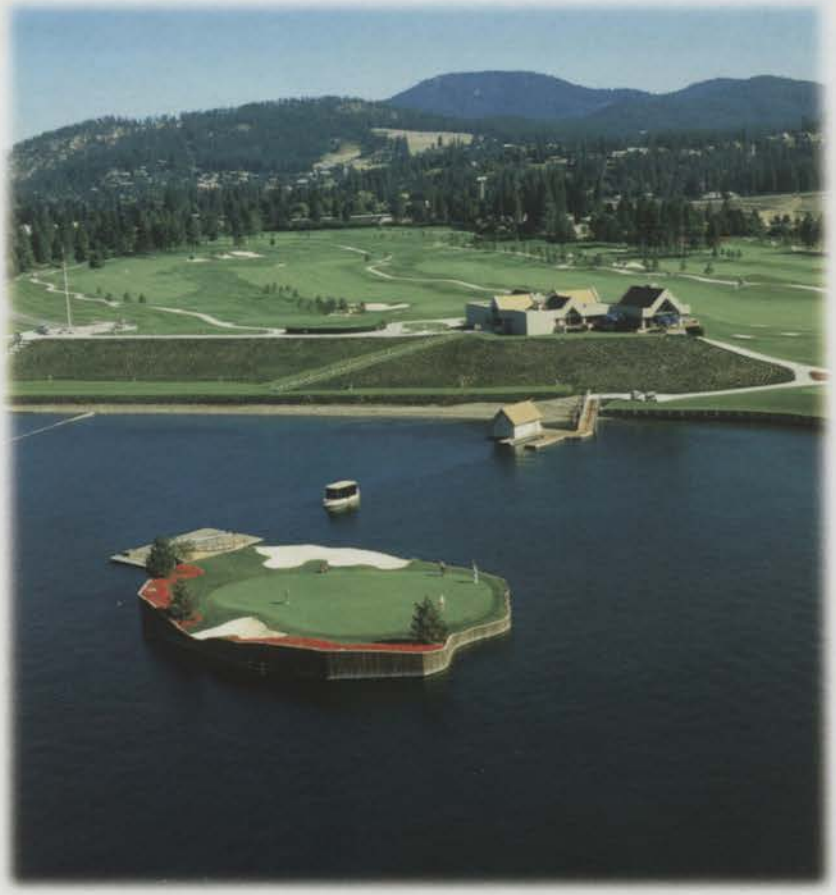

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AGCSA Award - Designed and manufactured by Dint Australia, photograph by Phil George

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research

RESEARCH RAP

This 12-page section is dedicated to profiling the turf research that a number of institutions and turf industry groups are currently undertaking.

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In Volume 2.4 (August 2000) of ATM, Gary Beehag reviewed the influence that particle shape and size can have on the physical properties of sands. In this edition he follows up with a discussion on the importance of particle size distribution and what to look for in different types of sands.

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STRIVING FOR EXCELLENCE

Just under 700 delegates made the most of a comprehensive program of key note addresses, open forums and workshops delivered by leading industry professionals at the 17th Australian Turfgrass Conference in June.

Covering 7,200m², the event also included the largest ever collection of turf machinery, products and associated services that this country has ever seen. The commitment that the companies participating in the Trade Show continue to give this industry is outstanding and the level of professionalism they bring to events such as this is first class.

As you may have guessed from the photo running on the front cover, this magazine has a focus on profiling the 2001 AGCSA Award winners. Awards such as these encourage people to strive for excellence and provide a way for individuals to receive recognition for great work that often goes unheralded. Most importantly though, industry awards bring a certain level of credibility and professionalism to an industry because they are something that people outside the industry can immediately relate to.

Also featured in this edition is RESEARCH RAP, a section dedicated to profiling turf research in Australia, in TECH TALK Gary Beehag discuses the relevance of particle size distribution in sands and we take a look at some of the various systems that turf facilities are installing to deal responsibly with washdown.

Phil George

Editor

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President's Pen

Mark Couchman, AGCSA President

As this is my first, and the most recent since the Conference in Sydney, I would like to take this opportunity to thank all those who attended and supported the Conference. I certainly hope that everyone enjoyed themselves and gained something from either the educational or trade show components of the Conference.

To Peter Frewin, as outgoing President, and Peter Schumacher I would like to reiterate sentiments expressed at the AGM, and thank you both for your commitment and untiring efforts in helping to make the position of the AGCSA as strong as it is today.

I would also like to take this opportunity to welcome David Warwick from Avondale Golf Club and Rob Macdonald from Joondalup Resort as the two Directors on the AGCSA Board. Dave and Rob have been active in the industry for a long time and will be a huge asset to the National Association.

As reported at the AGM the Association has continued to consolidate its position over the past 12 months and even with some initial start up costs that were involved with AGCSATech the association was able to post a profit of approx. $62,500. To this end, the further consolidation of the Association, and with the continued hard work of the staff and the Board, we hope to continue to smooth out the previous boom/bust cycle of the Association.

Congratulations to all the 2001 AGCSA award winners:

* Professor Peter Martin - AGCSA Distinguished Service Award, presented in partnership with Scotts Australia.
* Mark Gahan - The AGCSA Excellence in Golf Course Management Award, presented in partnership with John Deere.
* Andrew Baker - The AGCSA Claude Crockford Environment Award, presented in partnership with Aventis.
* Scott Carruthers - The AGCSA Graduate of the Year

These four men are all worthy recipients and they are a credit to themselves and the awards they represent. On behalf of the AGCSA thank you to the companies whose outstanding support has helped build the AGCSA Awards Program into something well worth striving for.

Next years Conference will be held in sunny Queensland and survey forms have recently been sent out to all members and trade supporters to help the AGCSA structure another great event for all those involved in the turf and golf industries.

In closing I would just like to ask everyone to continue to support the AGCSA in its activities. It is your Association, and only you can guarantee success.

Regards,

Mark K. Couchman.

AGCSA President

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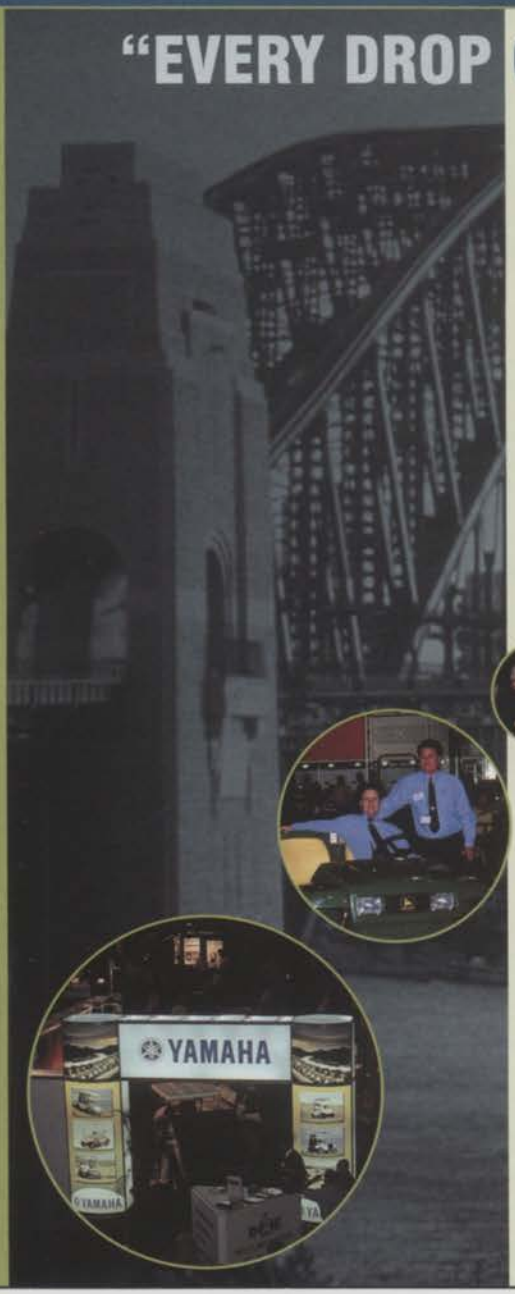
17th Australian Turfgrass Conference & Trade Show Review

"EVERY DROP COUNTS"



With a focus on what is sure to be one of the most important and critical issues facing all turf managers over the next five to ten years it was appropriate that Duncan Malcolm, Chairman of the Irrigation Association of Australia should deliver the welcome and key note address to delegates in attendance at the 17th Australian Turfgrass Conference and Trade Show held at Sydney's Darling Harbour.

Although delegate numbers were down from last years 'joint' staging of the Millennium Turfgrass Conference in Melbourne, the *Every Drop Counts* show in Sydney was successful in attracting turf managers in numbers unmatched by any of the previous 16 Australian Turf Conferences.

Just under 700 delegates made the most of a comprehensive program of key note addresses and open forums delivered by leading industry professionals and the schedule of workshops on topics such as water quality management, salary packaging and total asset management presented on day four of the conference were extremely well received and are sure to play a key role in future events.

Just as enticing to local turf manages and to those from interstate was this countries largest ever collection of turf machinery, products and associated services that came together on a trade show floor that was over 7,200 square meters in area. A total of 85 companies ensured that almost every conceivable product or service available to professional turf managers was on display to delegates and the 800 or so 'turfies' that descended on Sydney's Convention Centre for the Trade Show only.

The commitment that the companies participating in the Trade Show continue to give this industry is absolutely outstanding and the level of professionalism that they bring to events such as this is first class. The 'trade' play a crucial role helping the AGCSA promote and encourage the profession of turf management in this country and as turf managers they deserve our recognition and support.

Highlights of the week included the AGCSA Golf Championships presented in partnership with Toro, the AGSCSA Awards Presentation Ceremony followed by the Welcoming Cocktail Reception. With one of the best views you will find anywhere as a backdrop, the cocktail reception proudly supported by Rain Bird allowed delegates to make and renew acquaintances .

Straight-faced funny man Elliot Goblet and the energetic tunes of the 'Stolen Moments' ensured that the conference dinner drew applause and those still up for an early start on the Friday boarded the 'Turfgrass Tour' that took in the Concord Golf Club, Parramatta Golf Club and Stadium Australia.

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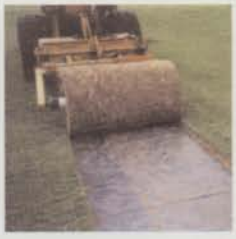

AGCSA Golf Championships

Conditions were picture perfect at the Lakes Golf Club

Stableford Winner: Anthony Dobinson

Open Winner: Daryl Sellar

Victorious NSW Team: (Left to Right) Scott Riley, Martyn Black, Michael Waring and Andy Hugill.

The conference began with a field of over 70 Golf Course Superintendents 'slugging it out' on the pristine surfaces of The Lakes Golf Club in an effort to be crowned AGCSA Golf Champion for 2001. Competitors were blessed with weather that Sydney is famous for and Superintendent Peter Brown and his staff had the course in absolutely magnificent condition.

In the Open event, contested by those talented enough to have a handicap of twelve or below, Darryl Sellar from Glenelg Golf Club was able to negotiate the terrifyingly quick SR 1020 bentgrass greens and a run of pin placements that would have sent tour professionals scampering for the tournament organizers office, to card a 5-over 78 to win the event by just one shot over Kenton Boyd from Fox Hills.

Testament to the difficulty of the course, Anthony Dobinson from the Killara Golf Club took out the stableford event with a modest total of 31 points and lead by NSWGCSA President Martin Black, New South Wales were victorious in the state teams event.

The AGCSA National Golf Championships were again sponsored by the Toro company and their gracious support was appreciated by all.

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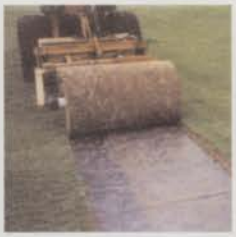
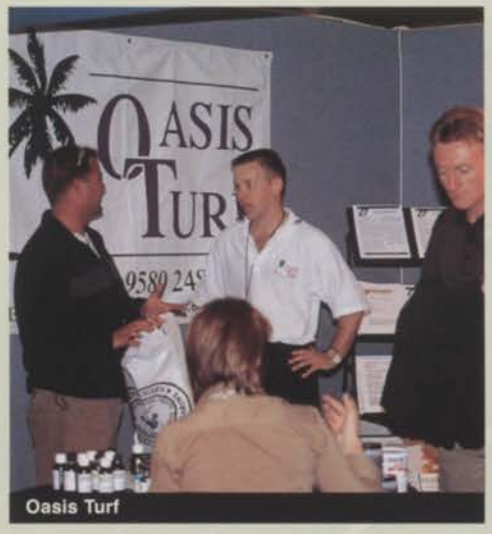


17th Australian Turfgrass Conference & Trade Show Review

Australian Golf Course Superintendants Association



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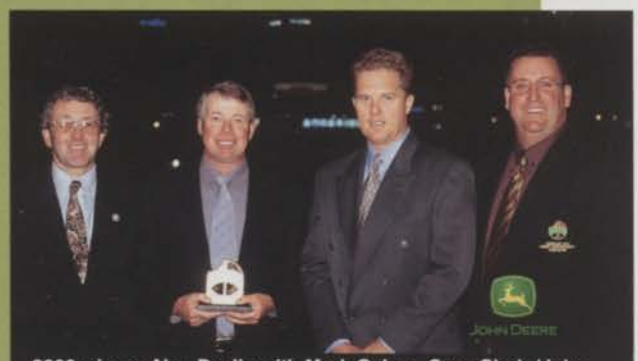
2001 AGCSA Awards

left to right: Richard James, Professor Peter Martin and previous winner Peter McMaugh

Louise Gall (Aventis) with Andrew Baker



2000 winner Alan Devlin with Mark Gahan, Greg Clark (John Deere) and Peter Frewin

Scott Carruthers with former AGCSA President Peter Frewin

The AGCSA Awards program continues to grow in stature and without exception, award nominees and winners for 2001 bare testament to the level of quality and professionalism to which these awards aspire.

Presented in partnership with Scotts Australia, the AGCSA Distinguished Service Award was bestowed upon Professor Peter Martin for his contribution to the industry as a researcher and educator. Peter is a wonderful communicator and his ability to instill a 'culture of learning' amongst his students is legendary.

Recognising a demonstrated commitment to environmental stewardship, and presented in partnership with Aventis Environmental, Andrew Baker from the Sanctuary Cove Resort was announced the winner of the AGCSA Claude Crockford Environmental Award. The award acknowledges the dedicated effort that Andrew and his staff have made over the last five years to adopt environmental best practice.

Presented in partnership with the John Deere Company, Mark Gahan from the Dunes Golf Links and 13th Beach Golf Links is the worthy recipient of the AGCSA Excellence in Golf Course Management Award. The Dunes Golf Links located on Victoria's Mornington Peninsula is recognized as one of the areas great golf courses and his ongoing work in the construction of the 13th Beach Golf Links on the other side of Port Philip Bay is a credit to Mark and his staff.

This Years AGCSA Graduate of the Year is Scott Carruthers. Scott works under Richard Kirkby at the Pennant Hills Golf Club and in addition to assuming senior roles on course construction projects and assisting with the training of younger staff, Scott achieved a three-year aggregate mark of 89.94 at the Northern Institute of TAFE, Ryde Campus. This was the highest mark of an Apprentice Greenkeeper in NSW. In recognition of his efforts, Scott receives an all expenses paid trip to attend the 18th Turfgrass Conference and Trade Show.

left to right: Scott Carruthers, Andrew Baker, Professor Peter Martin, Mark Gahan all holding their AGCSA Awards kindly produced and donated by Dint Australia.

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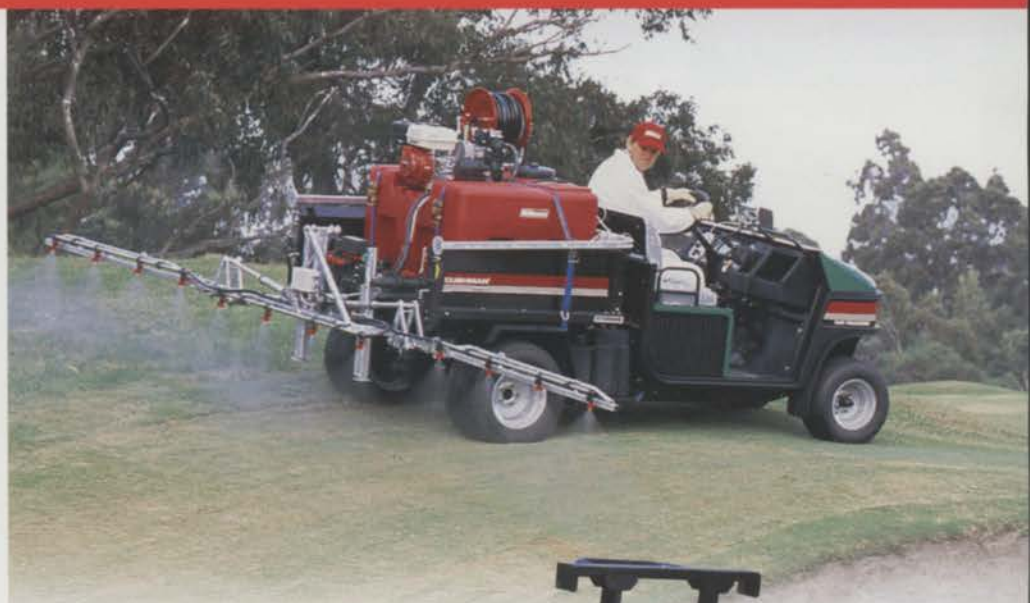

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AGCSA 2001
Award Winner

AGCSA Claude Crockford Environmental Award

Aventis

Andrew Baker: Sanctuary Cove Golf Club

It was a thrill and an honour to have the AGCSA and Aventis Environmental Science recognise my nomination for the prestigious AGCSA Claude Crockford Environmental Award.

To be nominated by fellow Superintendent Mr. Steven Marsden who himself is working tirelessly on improving the Lakelands Golf Course, was something very special so imagine my elation at actually winning the award at a presentation made in Sydney at the 17th Australian Turfgrass Conference.

The award recognizes the many strategies implemented at Sanctuary Cove Golf Course over the last five years so to accept the award on behalf of the members and staff of Sanctuary Cove who collectively have made a huge commitment to better environmental practice, made me very proud.

It is fair to say that most contemporary developments, and certainly most new golf course construction projects receive stringent attention from public interest groups and government regulators so it certainly hasn't always been plain sailing and I am sure that our achievements so far would have been almost impossible without the structured and detailed guidance that we received from Audubon International.

The Audubon Cooperative Sanctuary Program is an initiative of Audubon International and strives to assist, inform and educate its members working towards environmental stewardship, the conservation of bio-diversity and the sustainability of their facilities.

Whilst staying inside the realms of acceptable aesthetics and economic viability, I believe that the majority of turf managers want to operate with as much sensitivity for the environment as possible. The Audubon program gave us the tools and more importantly the confidence and understanding that we needed to change our maintenance procedures and 'environmental best practice' has, over the last five years become our primary objective.

Up until my involvement with Audubon, I, like many other turf managers had been hoping for firm, prescriptive guidelines from government regulators and had become increasingly frustrated that their own policy meant that one hand was permanently tied behind their back.

In such a litigious landscape, I understand their unwillingness to provide "must do" guidelines but the job of convincing an in some cases unsympathetic management and membership on the need for change is made all the more difficult without firm direction.

Government guidelines in Australia are full of terminology like, "you should", "we could" and "try this". Invariably, this means that important initiatives are often put straight on the 'back burner'. Wouldn't it be a great advantage to take "you must" to our management and committee?

However, these are the cards that have been dealt to the Australian turf manager and in the short-term at least, there is not much we can do about it.

The Audubon Cooperative Sanctuary Program is split into six categories and for us, the program was able to provide the type of guidance that we needed:

1. Environmental Planning
2. Wildlife and Habitat Management
3. Water Conservation
4. Water Quality Management
5. Integrated Pest Management
6. Outreach Education

Upon completion of a detailed audit of our facility, Audubon required us to provide historical and current documentation of water and soil testing as well as records on the usage of pesticides, fertiliser and water use. The audit familiarised Audubon with our facility and when coupled with photographs, videos and maps, they had enough information upon which to base their recommendations.

All six areas needed the 'stamp of approval' for certification and each completed step was one closer to achieving full certification.

Key initiatives 'kick started' through the Audubon Certification included:

- Routine use of mechanical aquatic weed harvesting as opposed to chemical control.
- The promotion of wildlife habitats & corridors.
- Landscape master planning which includes the planting of bird attracting tree species.
- Installation of an approved chemical storage facility.
- Installation of lake aeration. Fish stocks are benefiting from the healthier water quality.
- Strategic installation of information signage around the courses depicting relevant bird varieties and distributions.
- Introduction of wetland plants to lake-edges (buffer zones). These include: Cumbungii, typha and isolepsis.
- Recycling of 1200m^3 of organic waste, which is reused as mulch as part of a structured management program.
- Introduction of native fish species to waterways.
- The introduction of a climatically more suited grass variety (tifgreen 328) on greens' surfaces, which has drastically reduced pesticide usage.
- Installation of machinery washdown filtering plant has reduced the risk of storm water contamination.

Recognising the need for support from the membership base, staff and community, the 'outreach education' initiatives set down by Audubon became critical in facilitating the programs and once convinced of the obvious benefits of the long-term strategies that we hoped to put in place, even groups that were initially reluctant to embrace the changes, played a key role in the lengthy certification process.

Following three years of intense interaction with Audubon and a dedicated commitment to make change where it was required, certification was finally achieved in August 2000 and I have recently been requested by Audubon to become a steward for their organization. This would involve assisting other turf managers throughout Australia who are working towards achieving full or partial certification and although I anticipate this new responsibility to encroach on my current commitments, I am certain that witnessing the development of environmentally sustainable golf course maintenance practices at other facilities will be extremely rewarding.

Winning the award has been extremely rewarding on many levels and I encourage other turf managers to nominate for this award in the future.

We need to demonstrate to our members, management and the wider community that we are indeed true professionals and that their environment is in capable hands. Only then can we expect Golf Course Superintendents to be viewed with the respect they deserve.

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AGCSA 2001 Award Winner

AGCSA Excellence in Golf Course Management Award
Mark Gahan, The Dunes Golf Links and Thirteenth Beach Golf Links

JOHN DEERE

To be nominated for the 2001 AGCSA Excellence in Golf Course Management Award was pretty special but to actually be announced as the winner of Award and join the company of previous winners such as Alan Devlin, Pat Pauli, Richard Forsythe and John Geary was a moment that I will never forget.

As much as the award recognizes personal achievement, it is just reward to the entire maintenance staff at The Dunes and Thirteenth Beach Golf Links who have done a tremendous job at both facilities over the last couple of years.

I am employed by golf course owner Duncan Andrews as Director of Golf Course Operations with the dual responsibilities of maintaining The Dunes Golf Links and managing construction of the Thirteenth Beach Golf Links. Providing invaluable assistance is Denise Hill Symonds at the The Dunes and Steven Hewitt at Thirteenth Beach.

The Dunes is 27 holes of classic links golf and from the back tees it is approximately 6,400m in length. Tony Cashmore designed eighteen holes and the late Colin Campbell designed the nine-hole Cups course.

Our aim in presentation of the course is to allow it to reflect its true links appeal by fluctuating in colour and character in tune with the seasons. Bunkers are menacing in the form of wild windswept scars and although not immaculate, the Santa anna fairways and Cobra bentgrass greens are tight and firm enough to allow exponents of 'pitch and run' to prosper.

The course is managed by a maintenance staff of ten, which includes one mechanic who maintains our mainly John Deere equipment in excellent condition. Course irrigation is controlled by a Rainbird Nimbus system running either Hunter or Rainbird Eagle sprinklers. We are fortunate to have access to an abundant supply of good quality bore water that is low in salts. Fertiliser is used sparingly but high soil pH does mean that nutrient supplements are required from time to time. We are constantly trialling nutrient sources for use on greens but we do aim to imitate the old Scottish greenkeepers that follow a 'lean and mean' approach. This strategy seems to have the added benefit in assisting our war on Poa annua spp.

Green fee paying golfers expect greens to be in top condition every time they visit the course so scheduling and managing renovations has always been a problem for us but a program of regular dusting and water injection to improve aeration and relieve compaction is generating positive results.

Not long after the course was opened, in 1995 The Dunes was rated by Golf Digest at number 88 in Australia's top 100 golf courses and since then has steadily climbed to 24 in 1999. We eagerly anticipate the new 2001 list!

Thirteenth Beach Golf Links is a 27-hole golf course and housing subdivision directly west of the Barwon Heads Golf Course and adjacent to the thirteenth beach surf beach on Victoria's surf coast.

The golf course site ranged from thick tea tree covered sand dunes to flat grazing land and salt-water lakes and marches. The sand dunes are calcareous sands that are very similar to what we have on the other side of Port Philip Bay where it has proved to be an excellent greens growing material. Penn G2 bentgrass has been selected for use on the greens and the local native couch abundant on the site has been encouraged to grass the fairways. 'Washed' Plateau couch has been laid on tees and Fine Fescues were chosen to colonize roughs and green surrounds. A number of indigenous plants have been reintroduced around tees and in the roughs.

Designed by Tony Cashmore, construction of the course has required minimal disturbance to the existing landscape and in fact the entire shaping project was achieved using an excavator, a scraper and an articulated loader.

Construction of the course took 15 months and was completed in March 2001. It will be open in December 2001 and the months leading up to then will be dedicated to fine-tuning, which will include completing the landscaping and finalising the mowing patterns. The owners are delighted with the results and we are all confident that Thirteenth Beach will rank amongst Australia's top golf courses.

Winning this award is a tremendous honour and I wish to take this opportunity to thank the AGCSA and John Deere for supporting the industry with an award such as this.

Mark Gahan, Tony Cashmore and Tom Watson at the Dunes, Febuary 1996.

Editor's Note:

Recently, I had a discussion with Duncan Andrews, an owner of the Dunes and 13th Beach Golf Links, who explained the passion that Mark has for his work.

When Duncan bought the Dunes in the early 1990's he quickly went in search of a new Golf Course Superintendent. After receiving a number of applications it was a hand written eight page letter from Mark Gahan who had been the construction superintendent when the Dunes was first built.

The letter went into great detail about the types of grass he had used, particulars of certain holes, what he would do differently if he had his time over and how he planned to improve the course should he get the job.

Duncan was so impressed by Marks passion and knowledge that he rang straight away to offer him the job.

The rest as they say is history.

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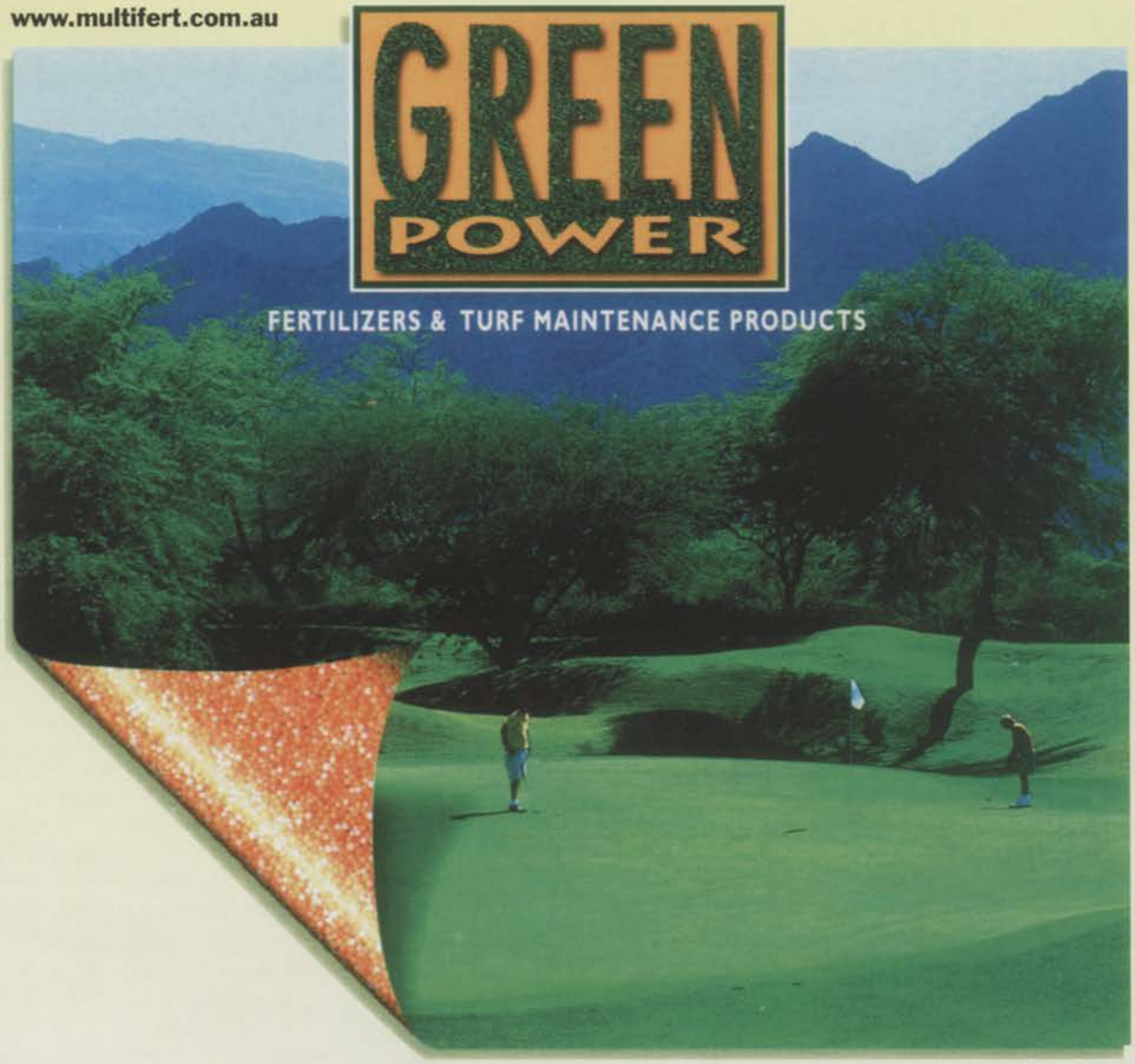

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AGCSA 2001
Award Winner

AGCSA Distinguished Service Award
Professor Peter Martin

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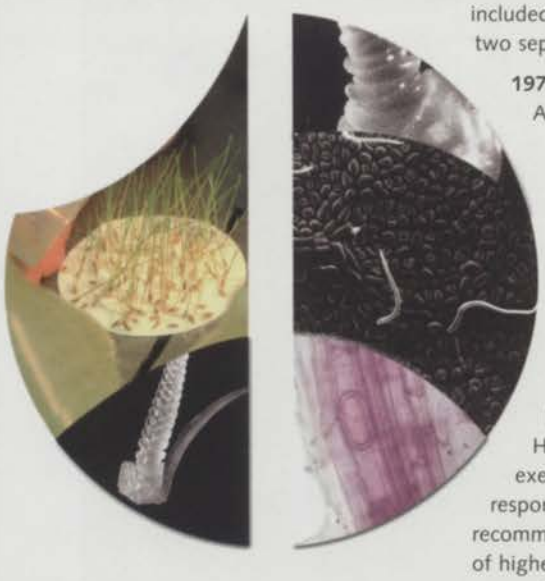

Bestowed by the AGCSA Board, the AGCSA Distinguished Service Award, presented in partnership with Scotts Australia, recognises an individual who has made such a contribution to the Australian Golf Turf Industry that they have left an indelible mark on the industry that owes them so much.

Previous winners include the likes of Peter McMaugh, Neil Adams,Vince Church and Bill Powell and the addition of Peter Martin to this illustrious group reinforces its standing as one of the industries premier awards.

As you would expect, Peters career of service is long and highly credentialed and what follows is a brief summary.

1963 - 1973
Lecturer in the School of Biological Science (Botany), University of Sydney, with particular responsibility for students majoring in Agricultural Botany. Teaching and research in the areas of plant physiology, plant ecology, environmental physiology and agricultural botany. Supervisor and examiner for higher degrees of M.Sc., M.Sc.Agr. and Ph.D. and for honors degrees in the Faculties of Science and Agriculture.

1973-1975
Two years as Deputy Principal, Hawkesbury Agricultural College, Richmond, NSW. Responsible for academic standards and developments and Chairman of the Academic Board. Acting Principal for extended periods.

1973-74.
Now part of the University of Western Sydney, the College at that time was a partly residential College of Advanced Education offering courses in agriculture, land valuation, food sciences and rural extension at undergraduate and post graduate levels, and included a large farming estate composed of two separate properties.

1975
Appointed full-time Member, Advanced Education Board in May 1975, with a particular responsibility for the accreditation of courses and the development of the Colleges of Advanced Education in New South Wales. Appointed part-time Member of the Universities Board and Higher Education Authority.

1976-1987
Executive Member (Academic), NSW Higher Education Board. In this senior executive service level, Peter was responsible for the provision of advise and recommendations to the Board on all aspects of higher education in NSW and was directly responsible for the planning and accreditation of new academic developments and the review of existing programmes in the colleges of advanced education as far as practicable their co-ordination with University developments. Chairman of the Boards Academic Committee, Chairman of the Panel of By-Law and member of the Board's Finance Committee.

1988
Senior Policy Advisor to the Interim Council of Chifley University.

Current Occupational Profile

In 1989, Peter established a consultancy and has built up a successful practice as a senior specialist consultant with particular skills and interests in vegetation studies, urban tree ecology, turf physiology and systematics, environmental monitoring (mainly in relation to plant growth), soil fertility and agricultural education. Peters' operations have a strong focus on urban horticulture, particularly in relation to trees, turf, and the fate of nutrients used in such operations.

Peter only works part-time as Senior Specialist Consultant with Peter M. Martin & Associates Pty Ltd and spends the rest of his time carrying out his duties as Professor in Urban Horticulture, Department of Crop Sciences, University of Sydney. As of July this year, Peter has been located at the Cobbity Research Station (near Camden south west of Sydney) where the Urban Horticulture and Turf facilities are now based.

One of Peters' most recent contributions has been as a coordinator and key teacher in the full fee paying Post-Graduate Turf Management Program (Grad. Dip. And M.Agr.) that has developed the learning and development of many Australian turf managers.

It is Peters' skill as an educator and communicator that sits foremost in the mind of all turf managers that have had the good fortune to inhale Peters passion for learning, his extraordinary ability to have retained information from almost every paper ever written on turf and his extensive knowledge on almost any topic you care to choose.

Talk to anyone who has completed the Post-Graduate Turf Management Program and the one phrase they all remember is "question everything you hear and do not believe anything that you read until you are satisfied that you have researched the literature fully".

This is sound advice for anyone wishing to truly 'learn' and understand the science of turf management.

left to right: Richard James(Scotts Australia, Professor Peter Martin and previous winner Peter McMaugh

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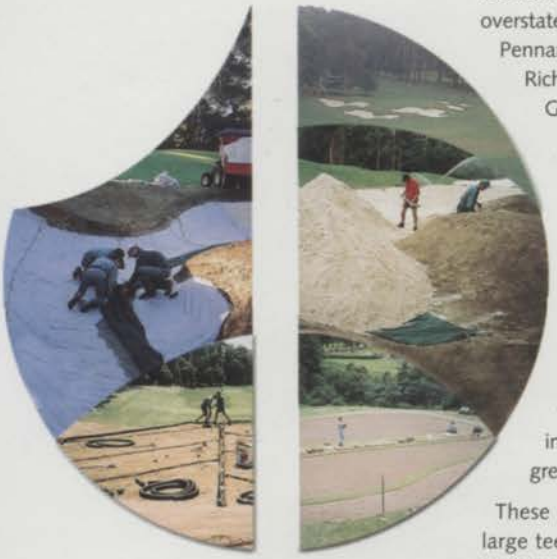
AGCSA 2001 Award Winner

AGCSA Graduate of the Year Award
Scott Carruthers, Pennant Hills Golf Club



Unlike most movie stars and media moguls, Golf Course Superintendents are not usually born into the industry.

Obviously the differences' don't stop there, but for me, life as a turf manager began at the age of two on the back of my fathers' motorbike tending the Castle Hill Country Club where he was Superintendent. Later on, during my time at Marian College in Kent Hurst I spent schools holidays working with dad who by now was at Riverlands Golf Club and would also travel to Canberra where my uncle was Superintendent at Woodhaven Green Golf Course.

By this stage Greenkeeping was in my blood and although my father may have wanted me to pursue a career that would allow me to keep him in a matter that he had never been used to, I was already committed to forging a successful career in this wonderful industry.

In 1997 I was lucky enough to secure a position as an apprentice at the Pennant Hills Golf Club under the supervision of Richard Kirkby. The following year I commenced a level 3 certificate in horticulture (turf stream) at the Northern Institute of T.A.F.E., Ryde Campus.

Three years later and I have been awarded the Ryde T.A.F.E. students association and the Turfgrass Association of Australia (TGAA) award for achieving the highest aggregate mark (89.94) by a student in the Turf Stream 2000. I was also a finalist in the Nuturf / NSWGCSA Trainee / Apprentice of the Year Award for 2000 and won the 2001 Walter Stone Memorial trophy from the Rotary Club of Castle Hill.

Winning the 2001 AGCSA Graduate of the Year Award has capped off an amazing 12 months. It is a tremendous honour and I can't possibly overstate the debt of gratitude that I owe the Pennant Hills Golf Club, Superintendent Richard Kirkby, his Assistant, Paul Gumbleton and the rest of the maintenance crew. Without them, none of my achievements to date would have been possible.

Pennant Hills Golf Club is 77 years old and is going through a period of rapid change. This has presented me with an opportunity to be involved with a mountain of course construction and modification work that has ranged from minor drainage installation to complete reconstruction of greens, tees and bunkers.

These projects include the reconstruction of large tee complexes on holes 5 and 11. The 11th tee was turfed with four different couchgrass varieties; Santa anna, Winter green, Windsor green and Rod Riley's Super Sport (since replaced with Plateau), and now acts as a trial site for the selection of turf varieties when and if other tee tops are replaced at Pennant Hills.

Another project that I have been closely involved with is the reconstruction of every bunker on the course! A number of different construction techniques have been trialled during my time at Pennant Hills but the method that we have decided to proceed with is summarized as follows:

- Bunkers are cut to shape and depth with an excavator (final shaping done by hand).
- Bunkers are edged with a soil that is firm enough to allow shaping and is permeable enough to allow for strong root growth (soils displaying these characteristics are under constant investigation).
- Final shaping is then done to ensure that all surface water is directed away from the bunker and the putting surface.
- Turf is then laid over the outside perimeters of the bunker which is then filled with sand. Turf is then laid over the edge of the bunker and pinned until establishment.
- Drainage lines in the bunker are filled with gravel and are covered with shade cloth. A 300mm deep sump is placed at the intersection of the ag-line pipe and the solid carry pipe. This allows for easy inspection and flushing of the drainage line. To prevent movement the cloth is pinned using concrete reinforcing wire.
- We are currently trialling a new cloth from the United States called 'Bunker Woll'. This cloth is used on extremely steep faces of bunkers to prevent erosion. It has proven to act as a drain on the wall of the bunker allowing water to pass between the base material and the sand cover with minimal disturbance.
- Bunkers are then filled with an approved and tested bunker sand to a depth of 6-8 inches.

I have set myself a number of goals in the golf course management industry and although many of them seem very ambitious, one by one I am slowly achieving them and it is this focus and dedication that I feel will allow me to achieve success.

My next goal is to graduate from the Advanced Diploma course that I have commenced at the Sydney University under the instruction of Professor Peter Martin. I will then strive to attain an Assistant Superintendent position at one of Australia's premier clubs and endeavour to acquire the people management skills that are often so evident in successful superintendents.

My next goal is Superintendent and ultimately I would like to become active in shaping the development and direction of the golf course industry by standing for an executive position on the state then national association.

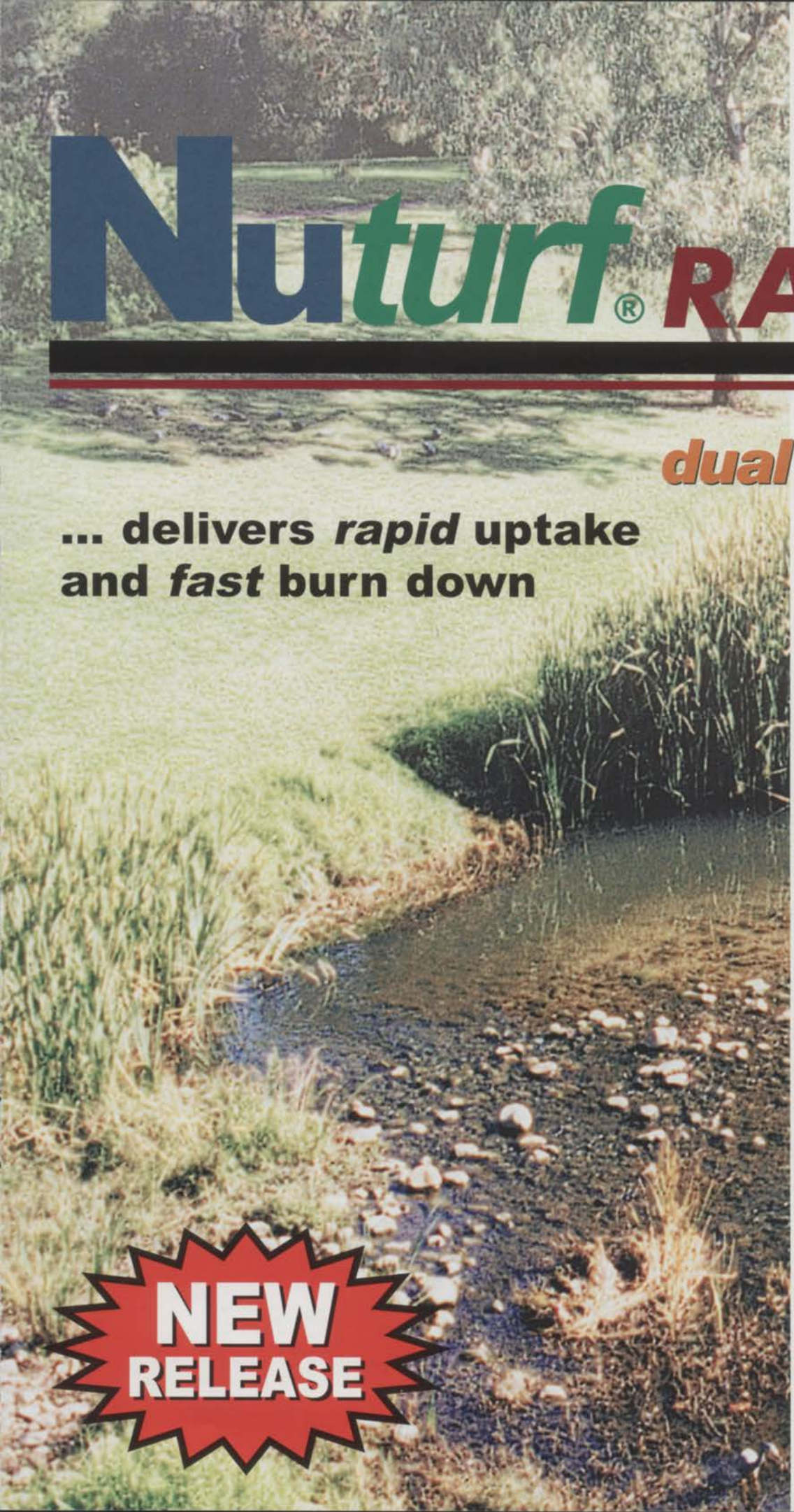
Scott Carruthers with former AGCSA President Peter Frewin

Editor's Note:

Just weeks after the Sydney Conference Scott was involved in a serious car accident that has left him in a critical condition fighting for his life.

Scott now faces what will be his greatest challenge. Coupled by the support of his family and the dedication Scott has applied in achieving his goals there is no doubt he has what it takes to make a strong recovery.

The thoughts of the entire industry are with Scott, his father Bruce and the Carruthers family.



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Chemical Washdown: A Case of Horses for Courses

Prior to the new installation at the Royal Melbourne Golf Club, the washdown facility was Superintendent Jim Porter's "pet hate".

Turf areas are an important part of our everyday lives. Turf enhances the visual amenity of our landscape and improves our living environment. In order to maintain these turf areas at a desired quality, a variety of chemicals and equipment are used. Regular maintenance is required to ensure that this equipment functions correctly but unfortunately, the washdown of vehicles, containers and spraying equipment can impact adversely on the environment if not managed correctly.

Fortunately, this can be achieved by installing a well designed, maintained and managed facility. There are several factors that must be considered when designing a washdown facility:

- The composition & volume of wastewater
- Characteristics of the receiving environment will determine the final water criteria and hence the level of treatment that is required. More stringent criteria apply to environmentally sensitive areas that may include public drinking water source areas, waterways or wetlands.
- Legislative requirements - approval is usually required by local government to install a treatment system and this may be subject to local by-laws. In sensitive environments, there may be additional requirements specified by the environmental regulator.
- Cost (installation and ongoing costs) - it is important to consider ongoing maintenance and running costs including chemicals, electricity and disposal. Treatment capability should not be compromised in order to meet your budget. A far better approach is to consider building the facility in stages or holding off until the required funds are available.

The Environment Protection Authority (EPA) and other Authorities have a stated aim of encouraging the adoption of 'best practice' and Environmental Management Plans (EMP) by benchmarking output levels rather than relying on a set of detailed prescriptive regulations. Cynic would argue that this 'arms length' approach is designed to allow the Authorities to divert liability should they 'get it wrong' but the legislation does provide enough flexibility for turf managers to tailor solutions to meet specific environmental concerns.

Washdown system and facilities are constantly evolving and are flexible in their design and

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function. This is well illustrated by a number of new facilities that have been commissioned recently and it will be interesting to track their progress over the next couple of years.

One such system has recently been installed at the Royal Melbourne Golf Club located in the heart of Melbourne's 'sand belt'. Four years ago the clubs washdown facility consisted of a cement pad that drained straight into a soak pit. It was a huge waster of water, represented an unacceptable environmental risk and according to Golf Course Superintendent Jim Porter it was the facilities' "pet hate".

Jim began to investigate the few alternatives that were available at the time and was satisfied with a system distributed by a company called RGF but an untimely fluctuation in the exchange rate pushed the unit above what the budget would bare and action was postponed for 12-months.

By that time a second system was under consideration but again prices moved against the historic club and at this point, Jim decided to consult with engineers Gutteridge Haskins & Davey (GHD). Jim had worked with them before on other projects and in this instance he engaged them to undertake a study on what alternative systems were available, how viable they were and in the long term, was bringing one into the country from overseas likely to be an effective option?

GHD felt that the systems available from overseas were quite hi-tech and overly complicated and expressed concern that a lack of technical back up and support could limit their effectiveness. They then indicated to Jim that they themselves possessed the necessary expertise to design a suitable system and once Jim agreed, the wheels were in motion to provide the club with a system that in terms of functionality and long-term operation met their needs exactly.

GHD undertook a detailed analysis of the facilities operations and requirements and designed a "totally closed" washdown system that is based on a series of filters and settling tanks. Jim has found the system simple and effective and although everything is not totally complete, it has been operational for the last nine or ten months.

A carefully controlled monitoring program is currently underway.

Two other wash water systems that use biodegradation to treat contaminated water have also been recently installed into Victorian golf courses.

Greenmaw Pty Ltd have developed a bioremediation unit that utilizes two separate washdown areas, one for chemical application equipment and one for other maintenance tools and machinery. Wastewater from the chemical application equipment is filtered separately to remove any antibacterial chemicals that may reduce the effectiveness of bioremediation before being fed through a system of storage tanks (combined storage capacity - 8000 litres) that utilize a small CPU that controls aeration and the dosage of bacteria. The same CPU also ensures that the tanks are emptied in the correct order following the appropriate treatment.

Greenmaw's bioremediation unit at the National Golf Club, Cape Schank.

Greenmaw's bioremediation unit is currently in use at The National Golf Club, Cape Schank.

A random EPA inspection in 1999 revealed that the current washdown water disposal system that the Sorrento Golf Club had in place was not meeting their treatment needs. An independent consultant was commissioned to more clearly identify their needs and

Course superintendent, Steve Tuckett with the Water Stax bioremediation unit.

subsequently, Landa Australia were invited by Golf Course Superintendent Steve Tuckett to introduce the Water Stax bioremediation unit that is in use at over 50 golf courses around the world.

Following some modifications to the existing washdown pad, the Water Stax system was installed and fully commissioned under a trial agreement in less than two days.

Following the thorough analysis of wastewater a commercial microbiologist was engaged to create a 'summer' and 'winter' formula of herbicide, pesticide and hydrocarbon decomposing bacteria spp. that are fed in controlled doses to the Water Stax treatment chamber over night. Bacteria break down complex organic compounds through a series

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Royal Sydney Golf Club's new washdown facility features a large 10m x 8m concrete slab, a covered roof an air hose, hot and cold water and a narrow gauge gutter drain so that most of the debris washed off machines is retained for a manual sweep up.
Its washdown bay gross pollutant trap is a cylindrical CDS unit (continuous deflective separation) which removes gross solids larger than 1mm from the drainage flow. Small amounts of hydrocarbons and chemicals that may be in the washdown water are adsorbed to the organic matter trapped by the screen.

A new washdown facility installed at the Lakelands Golf Club in Queensland collects rinsate from chemical application and other maintenance equipment separately and separators are used to take out oils and solids. Rinsate from the chemical storage area and the chemical washdown pad is passed through to an 8000 litre holding tank. A 2000 litre spray tank siphons contaminated water from the holding tank and using a handgun, the water is sprayed out along the fence lines.

of coupled chemical reactions termed catabolism.

Regular analysis of discharge water performed by a commercial biochemist and the Queensland University indicate that the discharge water conforms with ANZEC guidelines for sewer discharge.

Obviously, a range of different wash water treatment methods and systems are available to the turf manager but it is critical to remember that a regular maintenance schedule is required to ensure a treatment facility functions in accordance with its design. This may include cleaning of pits and grates, backwashing and addition of chemicals and / or micro-organisms.

Also, regular testing of the quality of both washdown water and treated water should be undertaken to determine the effectiveness of the treatment system.

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Defining Sportsturf Sands

Greenside on eighteen at The Lakes Golf Club

For specific sportsturf purposes the physical attributes and therefore the suitability of sands can be quantified by certain indices. Of these indices particle size distribution is the basic criteria to measure. Performance characteristics such as bulk density, saturated hydraulic conductivity and gravimetric moisture content are largely a function of the particle grading. Sand fractions vary between 0.02-2.00 mm in diameter. Typically geologists define sand as an Arenaceous sedimentary deposit formed from Clastic rocks (igneous and metamorphic which have weathered over millions of years.

Coastal sand dunes generally produce sands (alluvial) of more rounded shape than do rivers or streams. Water-borne deposition of sand causes a gradual downstream decrease in grain size. Wind-blown (aeolian) sands of desert origin typically produce particles of more uniform grading. Sand may also result from the artificial crushing of friable sandstone. As with crushed sandstone and sands produced by glacial action the sand grains have relatively sharp edges. Sands composed of quartz (silicon dioxide) as opposed limestone sands (calcium carbonate) are only recommended at this time due to their ability to resist physical deformation. Quartz sands of very uniform particle grading have the unique property of being able to maintain porosity over time.

Putting green construction sands

The vast majority of research work conducted into sands for sportsturf has been for golf green construction purposes. Several performance specifications have been published as a result of research work conducted since the 1940's. published construction specifications like the well known criteria of the United States Golf Association (USGA) or to a lesser extent of the University of California (UC) are pivotal around a specific particle grading. For example, the particle grading of the UC specification is very narrow stating that 80-90% of the sand particles must fall between 0.1-1.0 mm in diameter. A sand is said to possess a narrow particle size range when 75% or more of the fractions fall within two particle size classes. Sand particle grading can be documented in a number of ways. Typically, the grading of sportsturf sands is documented on a percent passing rather than a percent retained basis as used for concrete sands. A particle grading curve can graph the percentage of sand passing specific sieves against the sieve size. These graphs can be further used to determine the bridging factors for an underlying gravel layer.

The ability of a putting green sand to resist densification is paramount and this can be measured by calculating the bulk density. Typical bulk density (ratio of mass to volume) values of quartz sands vary between 1.45-1.65g/cm^3. The term 'Threshold proportion' has been used when amending soils with a sand to meet a specific putting green specification. Threshold proportion is the mixture of sand and fine particles in which large pores between the amendment particles are exactly full of fine particles. At the threshold proportion, maximum bulk density of a mix is achieved. Threshold proportion has practical significance when it is realized that a blend composed of 5m^3 of a relatively coarse sand which possesses a wide particle distribution with 5m^3 of a very uniform fine sand will result in a final mix of less than 10m^3 in volume.

Measurement of the saturated hydraulic conductivity (ability to transmit water) is another essential criteria in order to predict the behaviour of sands. The USGA specify a saturated conductivity value under 'normal conditions' of between 150 and 300 mm/hr.

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Sportsfield sands

The playing surface of a sportsfield must possess high stability and resist the detrimental effects of compacting forces. Studies into acceptable criteria for sands for sportsfield construction purposes are not well documented outside Europe. Many research workers have attempted to describe the sizing of the sand for sportsfield applications by a single number.

The D-number of a sand refers to the percentage of particles by mass less than a specified diameter. For example, a D20 value can be viewed as a sieve size where 20% of the sand would pass and 80% be retained. Another criteria not often used is average grain size (AGS). AGS is calculated by multiplying the percentage of particles in each size category by an average grain diameter for that category.

Particle interpacking and stability of sportsfield sands under compaction are influenced by the uniformity of the particle size distribution. Rounded sand grains having high uniformity packed to their maximum density will result in approximately 60% solid matter. The graduation index or coefficient of uniformity has been developed by research workers to characterize grain uniformity, being a dimensionless value comparing the diameter of the largest sand fractions to those of the smallest. For example, work conducted in Britain has indicated that as the D90/D10 graduation index increased from 1.6 to 1.62 the total pore space in the sand decreased from 39.2% to 30.7%. A D90/D10 index of 2.5-1 or smaller is considered appropriate for sportsturf sands.

Golf bunker sands

Acceptable sands for bunkers must possess a complimentary particle grading and particle shape. Particle shape is a two-dimensional measurement of the sphericity (actual roundness of the grain) and roundness (sharpness of any edges) of the sand. Technically speaking, round sand grains may or may not be spherical and spherical sand grains may or may not be round. Engineers use a term called the angle of repose. This is a useful measurement when dealing with bunker sands. The angle of repose is the angle the sand assumes from the horizontal. In practical terms, if the angle of a bunker face exceeds the angle of repose of the sand in question, the sand will easily move down the bunker face. An equally important criteria for bunker sands is the ball penetration value. This is used to predict the ability of the sand to resist penetration by a golf ball.

Drainage Sands

Sands for sportsturf drainage purposes are used either as an envelope around a drainage pipe, perhaps as the intermediate layer beneath a golf green or for sand slitting within an existing sportsfield or golf fairway. Specifications for sportsturf drainage sands are not as well defined as those for sportsturf construction sands. The USGA simply state that should an intermediate layer be used the sand must possess at least 90% of particles between 1mm and 4mm. In Britain, sands for sand slitting purposes are defined as having their particle range generally between 0.25-1.0 mm.

The physical characteristics of natural sands are dependent upon their material composition, origin and actual weathering process. It is the specific physical characteristic of sands which ultimately determine their use as a sportsturf sand.

Gary W. Beehag, is the Sportsturf Products Manager for M. Collins & Sons P/L (Sydney)

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By John Neylan

Table One: Turf Quality					
VARIETY	03/01/01	01/02/01	06/03/01	05/04/01	10/05/01
Pencross	6	6.2	5.7	6.0	5.8
Egmont	6	5.5	5.3	5.5	5.7
PENN A1	6	7.2	6.8	7.3	6.8
PENN A4	6.2	6.7	6.3	6.7	6.8
PENN G2	6.2	6.8	6.2	6.7	6.8
PENN G6	6.0	6.5	6.0	6.3	6.0
Cato	6.0	6.3	6.0	6.5	6.2
Pennlinks	6.0	6.2	5.8	6.2	6.2
L93	6.2	6.7	5.8	6.0	6.5
Dominant	5.8	6.7	6.0	6.2	6.2
SR7200	5.8	5.7	5.7	6.2	6.3
LSD	NS	0.6	0.5	0.6	0.4
Turf Quality Ratings: 0 - Worst 9 = Best					

Table Two: Seedling Vigour			
VARIETY		VARIETY	
Pencross	7.3	Egmont	7.3
PENN A1	4.0	PENN A4	6.7
PENN G2	5.0	PENN G6	7.0
Cato	6.7	Pennlinks	6.0
L93	7.3	Dominant	7.3
SR7200	6.7	LSD	1.7
Seedling Vigour: 0 = no seedling emergence 9 = maximum vigour			

BENTGRASS TRIALS

The trials at Kingston Heath Golf Club are now well established and data on quality, density, colour and incidence of disease is being collected every month. A small observation trial has also been undertaken to determine the resistance of each cultivar to an application of the non - selective herbicide Amitrole.

Some of the results are detailed in the above tables, including the results of statistical analysis. The LSD (least significant difference) has been calculated so that the significance between means can be determined.

Victorian Turf Managers inspect the AGCSA Bentgrass Trial site at Kingston Heath Golf Club

The results to date can be summarised as follows:
The new varieties Penn A1 and Penn G2 had the lowest ranking for seedling vigour, particularly when compared to Penncross.

L93, Dominant, Penncross and Egmont exhibited the greatest seedling vigour.

Over the past few months there has been a significant difference in the turf quality between the varieties. Turf quality is a visual assessment of the turf as a putting surface. The rating takes into account; smoothness / evenness of the surface, density and grain. The variety exhibiting the highest and most consistent quality has been Penn A1, with Penn A4 and Penn G2 also showing good characteristics. Pencross, along with Egmont were amongst the poorest for turf quality.

The ratings for turf density are closely related to turf quality. Penn A1, Penn A4 and Penn G2 all rate highly for density. Pencross and Egmont have rated lowest for turf density.

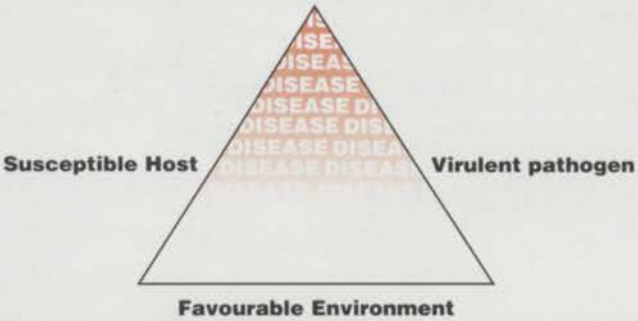
The non-selective herbicide, Amitrole, has been used for the control of Poa annua in bentgrass. A small observation trial was undertaken to determine the reaction of the cultivars to a single application of Amitrole at 20ml / 100m^2 . The observations were that Egmont, Cato and SR7200 were the least affected with Pencross, L93, Penn G6 and Pennlinks being the worst affected. At four weeks after treatment most varieties have shown strong recovery.

Over the next few months the plots will be assessed for green speed, thatch depth and root growth.

FUNGICIDES AND THEIR MODE OF ACTION

The summer months produced conditions that were conducive to sever disease outbreaks and in particular root diseases such as Rhizoctonia spp and Pythium spp. With such virulent disease outbreaks, control has often been difficult to achieve and it is an opportune time to review disease control and fungicide application strategies.

A disease outbreak can only occur when certain conditions are met and these can be simply described by the disease triangle



There are usually four steps in the disease process, these are;

- Infection - when a disease causing pathogen enters the plant;
- Incubation - inhabitation of the host without the production of visible symptoms
- Symptom development - the visible signs of the interaction between pathogen and host;
- Spore production - production of spores for the spread of the pathogen.

If one of these elements is missing, a disease outbreak will not occur. When a disease outbreak occurs it is often necessary to intervene by applying a fungicide so as to break the cycle. There have been several reports this summer that fungicide applications have not been effective under high disease pressures and it is an opportune time to remind ourselves about how fungicides control fungal pathogens.

Fungicides are classed as either having a contact or penetrant mode of action. Contact fungicides are only effective on the external parts of the plant and have no impact on reducing the degree of colonization of the disease organism after invasion of the plant tissue. Chlorothalonil and mancozeb are two of the most commonly used contact fungicides.

Penetrant fungicides are often referred to as being "systemic" in action. Penetrant fungicides penetrate the underlying plant tissue and act as both protectants and eradicants. There are three forms of penetrants; localized penetrants, acropetal penetrants and systemic penetrants. Localised penetrants only act in the immediate vicinity of entry, with Iprodione being a localized penetrant. Acropetal penetrants are translocated in the xylem (water conducting tissue) and move upwards in the plant from the point of entry.

Some of the acropetal penetrants are capable of lateral diffusion and limited downward (basipetal) movement. This movement is only a few millimetres and include fungicides such as propiconazole, triadimefon, metalaxyl and triadimenol.

Systemic penetrants are translocated in the xylem and phloem tissue and exhibit both acropetal and basipetal movement. Fosetyl-A1 is the only systemic penetrant fungicide that is registered for use on turf.

The volume of water applied with a fungicide can have a significant impact on its effectiveness. The optimum dilution rate has changed dramatically over the past 70 years from 20-40L/100m² to 2-4L / 100m². The dilution rates have changed primarily due to; less phytotoxic fungicides and changes in spray equipment.

Trials undertaken by Couch (1995) looked at dilutions from 1-120L/100m² using iprodione, chlorothalonil and propiconazole. The results of the trials demonstrated that;

- Dilution effects fungicide performance
- Dilution is fungicide specific
- The magnitude of dilution affects initial degree of control
- Dilution affects the length of control
- Some formulations are highly dilution specific

The optimum dilutions were as follows;

Fungicide	Optimum dilution
Chlorothalonil	4L/100m²
Iprodione	2-8L/100m²
Propiconizole	8L/100m²

'The single greatest error in fungicide applications is that insufficient water is applied.' Couch (1995) indicated that a minimum quantity of water is 4-8L/100m². Greater water volumes improve coverage, performance and residual effectiveness.

The timing of fungicide applications can be critical in obtaining good control and preventing substantial turf damage. The important factors affecting timing are:

- Know the disease(s) and its life cycle
- Know your environment (microclimate, thatch etc)
- Identification of the host species
- Whether there is a preventative or curative approach taken
- The stage of the disease (it is important to note that a well established disease will be more difficult to control.)

If a disease outbreak is difficult to control or becomes chronic it is important to reassess all factors. Including:

- Turf / soil conditions
- Microclimate
- Fungicide application techniques
- Fungicide selection

Many chronic diseases can be due to poor soil / thatch conditions and the disease is only a symptom of more serious deficiencies that need to be addressed.

TURF RESEARCH GROUP - QDPI Redlands Research Station

Industry group inspecting water use trials on turfgrasses at Redlands Research Station.

Formed just 18 months ago, the QDPI Turf Research Group operates from Redlands Research Station at Cleveland, which is strategically located about 30 minutes from the Brisbane CBD on the eastern edge of the metropolitan area. The Station was established more than 50 years ago to service the fresh fruit and vegetable industries in what was then Brisbane's 'salad bowl'. But with continuing urban sprawl and the rapid population growth in south-east Queensland, the bulk of these traditional activities have been pushed further afield. Redlands is now the focal point for QDPI's services to the rapidly growing amenity horticulture sector (including nurseries and cut flowers as well as turf).

The Turf Research Group is led by Dr Don Loch, whose main research interests are the development of improved varieties and their propagation, salinity tolerance, weed control, and general turf management. As part of his Ph.D. studies under a QDPI scholarship, Peter Broomhall is investigating the water use efficiency of a wide range of turfgrasses to develop best practice irrigation and waste-water management. Dr Chris Menzel is also conducting water use studies, in addition to his major interest in the physiological responses of turfgrasses to environmental stresses (shade, salt, temperature).

Demonstration plots of vegetative and seeded turfgrass varieties have been established, both to develop information and for public access and education. When the final plots are planted shortly, this will be one of the most comprehensive collections in the world, covering more than 120 varieties of some 25 species of warm season turfgrasses. Among these are new US varieties not previously seen in Australia, including coded lines some not yet released by the breeders. For example:

• All of the new ultradwarf Cynodons - TifEagle, MS-Supreme, Champion Dwarf and Flora Dwarf - will be represented once the last of these comes out of Quarantine in August. Another local selection, which performed well at Redlands over the past year, is already being trialed on greens by leading superintendents and greenkeepers in south-east Queensland.

• 'Plateau', an Australian variety of green couch with a very prostrate spreading habit, will grow under 50-60% shade. However, it must be mown short to maintain the 'flat' presentation of its leaves, thereby maximising light interception.

• The new 'Reveille' hybrid Poa from Texas grows all year round. Last year, it survived the hot Brisbane summer, yet was not affected by severe frosts in Toowoomba.

• As well as new overseas zoysia varieties, selected forms of the native Zoysia macrantha are under trial. The best of these show considerable promise as a salt-tolerant, hard

Turf demonstration plots at Redlands.

Native halopyhtic grasses Zoysia macrantha (left) and Sporobolus virginicus (right) establishing on a degraded saline site (10 weeks post- planting).

De Anza zoysia - a promising new variety from California.

BY DON LOCH, REDLANDS RESEARCH STATION

wearing turfgrass, and will be trialed further in a local foreshore park.

The establishment of this and other Australian native grasses for roadside use is under investigation in trials with the Department of Main Roads. These should be equally applicable in golf roughs.

Two new high quality seashore paspalum varieties from Georgia are about to be released from Quarantine through the Turf Research Group. These grow in undiluted sea water, and should fill a variety of roles from coastal golf courses to bioremediation. They will also add to the range of halophytic grasses under trial on coastal saline sites with the Department of Main Roads and other agencies.

Redlands Research Station has been accredited as the centre for DUS testing of new warm season turfgrass cultivars for Plant Breeder's Rights registration. With such a comprehensive collection of existing varieties backed by technical expertise and previous experience, this is a logical step. Next year, the first four Australian cultivars will be put through their paces for PBR registration by the Turf Research Group.

A major project looking at water use efficiency across a range of subtropical native and naturalised grasses has been running for about 12 months. This has been funded jointly by Horticulture Australia Limited and industry partners including North Lakes Development, three local councils and two major turf producers. As well as showing how the different grasses cope with drought in unirrigated parks, the project aims to develop best practice guidelines for the increasing use of effluent for irrigation of parks, gardens, sporting fields and golf courses. Detailed glasshouse work at Redlands is complemented by field studies at Murrumba Downs and North Lakes on the northern edge of Brisbane.

With increasing emphasis on the environment, the turf industry needs early access to the range of more selective and effective chemicals being developed internationally. To this end, a phytotoxicity chemical testing site for warm-season turfgrasses is being set up on Redlands through a second project funded by Horticulture Australia Limited, this time with Nuturf and Aventis as the commercial partners. Redlands forms part of a strategic national screening network involving two other multi-species/cultivar testing sites in Sydney and Melbourne. Faster and more comprehensive phytotoxicity screening through this process will facilitate the registration and availability of more effective and more environmentally friendly chemicals in Australia.

Further details on turf research programs at Redlands Research Station can be obtained by contacting Don Lock: Phone (07) 3286 1488 or email: lochd@dpi.qld.gov.au

Plateau couch maintaining a dense vigorous mat after 8 months in 50% shade.

Superior growth of Plateau couch (centre) compared with Legend (front) and Royal Cape (rear) after 2 months in 50% shade.

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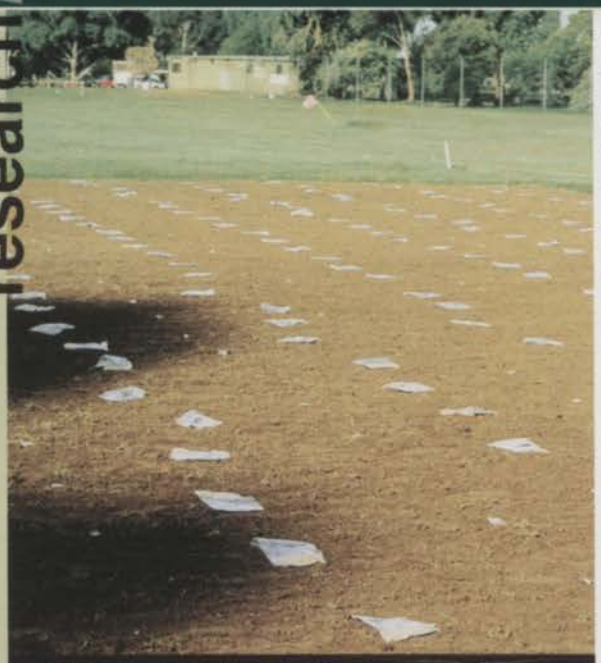
Australian Turf Evaluation Program (AUSTEP) - Perennial Ryegrass

MICHAEL ROBINSON, TURFGRASS TECHNOLOGY P/L



Trial setup at Werribee Golf Club.

The final assessment of the Melbourne trial sites was completed in December 2000 and a 36-page booklet has now been produced. This booklet contains all the results from two and a half years of evaluations at the Werribee Park Golf Club and Keysborough Golf Club sites. The booklet was launched at a field day held at Keysborough Golf Club in March and copies are available from the Seed Industry Association of Australia (SIAA) Secretariat, PO Box 8797, Weston ACT 2611. Phone (02) 6287 2442; Fax (02) 6287 2433, email Diana@sia.asn.au

A summary of the trial results has been published in recent issues of Australian Turfgrass Management (Vol 3.1 - Feb/Mar 2001) and Turfcraft International (Issue 77 - Mar/Apr 2001).

Irrigation was turned off at the Werribee Park Golf Club site in December 2000 and the varieties will be assessed for how well they perform and survive under no irrigation. Assessment of turf density, ground cover and weed invasion will be undertaken following the autumn break and again in spring.

A trial was set up at New Brighton Golf Club, Sydney, in April 2000. Sydney has a very transitional climate with hot summers and high humidity, which is not overly conducive for ryegrass. The major aim of this site is to evaluate how the ryegrasses perform under high stress conditions (high humidity and temperature) and associated disease pressures.

These trials have provided turf managers with useful data on which to make informed decisions on selecting ryegrasses for their particular situation as well as providing an excellent educational tool for turf managers and students who have frequently visited the trials. The Seed Industry's new code of conduct will govern how the seed companies are able use these results for marketing purposes.

The Future

It has been the aim of the SIAA Turf and Lawn Seed Group to provide turf managers with independent evaluation data on which to base purchasing decisions. We have now completed our first Perennial Ryegrass trial and the question is where do we go from here?

It has been identified that Tall Fescue (Festuca arundinacea) is growing in popularity with end users and this has led to a decision to develop a trial in autumn 2002 to test all of the commercially available Tall fescue varieties as well as experimental varieties. The evaluation criteria and trial sites have not yet been finalised, so you can look forward to hearing about progress in the coming months.

AUSTEP has been funded by Australian Horticulture Limited (formerly Horticultural Research and Development Corporation) and the Seed Industry Association of Australia.

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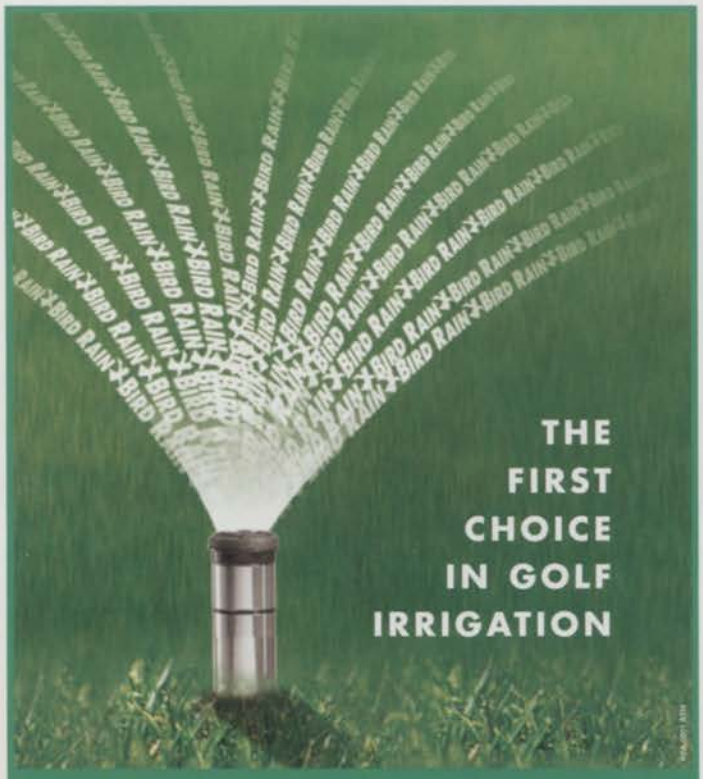

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Use of Organic Stimulants and Biological Control Agents in Turf Management

ANDREW PEART, TURFGRASS TECHNOLOGY P/L

Trial site at Commonwealth Golf Club

There are 4 trials being undertaken on creeping bentgrass putting green surfaces in Melbourne and Sydney to evaluate the effectiveness of various organic stimulants and biological control agents as opposed to and in conjunction with conventional inorganic fertiliser programs.

The site at Commonwealth Golf Club is evaluating the Petrik range of products, the site at Kingswood Golf Club is primarily evaluating organic stimulant products and organic fertiliser programs and the sites at Riversdale Golf Club and Pennant Hills Golf Club are primarily evaluating products that claim to have effectiveness against disease and nematode incidence.

The Commonwealth Golf Club site was seeded on 6th October 1999 while the other trial sites were setup on established greens in November 1999 and January 2000.

The following products are being evaluated;

- Acadian
- Nutratherm
- Amino Grow
- Nutrigro
- Biogain
- Petrik range
- Carbo Aid
- RD 1
- Neotrol
- Geoflora range
- Supa Humus
- Kelpak
- Trichoderma
- Natural Grow Green
- Trichoflow
- Nemacur
- C.L.C
- Seasol

The trials are assessed on a regular basis for;

1. Establishment (Commonwealth Golf Club only) - seedling emergence and vigour, turf cover and disease incidence;
2. Full sward - turf colour, density and colour, and thatch depth;
3. Roots - length, health, visual root mass and root mass by ashing;
4. Nematode counts.
5. Disease incidence/severity.

The first year of these trials has shown no major differences in overall turf performance between conventional fertiliser practices, organic-based standalone programs or supplementary products added to conventional fertilisers programs.

Basically, all products claim to improve turf quality / health but in the first year of this trial, this has not been supported by consistent improvements in either turf quality or density.

Similarly, the many other claimed benefits have not been significant or consistent in the first year.

- Products that claim to reduce thatch produced no significant reduction compared to the Control.
- Products claiming increased root growth failed to exhibit results that were significantly greater than the Control.
- Products that claim to reduce disease incidence were not significantly different to the Control for Dollar Spot and Anthracnose.

Some of the products claim to protect the plant from nematode attack rather than acting as a nematicide. So far, no treatment has been effective in significantly reducing nematode numbers at Riversdale Golf Club and Pennant Hills Golf Club where nematode numbers are being assessed.

Previous trial work has shown Neotrol to have some action against nematode numbers. However, the effectiveness of Neotrol is still unclear due to the product not being reapplied after five weeks as is now recommended by the manufacturer.

The major difference observed in the first year of the trial is the cost of the treatments and the number of applications that must be made. The benefits of using these products would need to be significant in order to justify their cost and the added expense in applying some of the treatments.

Full results for the first year of the trial were presented at the AGCSA Conference in Sydney. A 'Conference Proceedings' can be obtained by contacting the AGCSA office (03 9886 6200).

This trial is being funded by Australian Horticulture Ltd. (H.R.D.C.), the Victorian Golf Association the New South Wales Golf Association, the Victorian Golf Course Superintendents Association and the New South Wales Golf Course Superintendents Association.

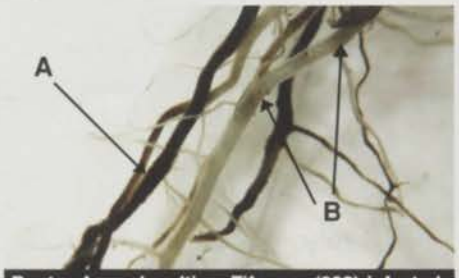
Identification and Distribution of Ectotrophic Root Infecting Fungi on Golf Turf in Queensland

MARCELLE STIRLING, BIOLOGICAL CROP PROTECTION PTY LTD, BRISBANE

In 1998, some couch putting greens on several golf courses in Queensland developed severe dieback symptoms. The problem was mainly associated with Tifgreen 328 hybrid and adverse effects were apparent for up to four months during summer. A survey was carried out in Queensland and northern New South Wales by turf consultant Dr Walter Scattini, who concluded that the cause was extreme physiological stress associated with factors such as abnormally hot weather, scarification, close mowing and heavy use (refer to Australian Turfgrass Management magazine, Volume 1.2). Although no pathogens could be associated with the disorder, the symptoms were similar to a disease known as bermudagrass decline that occurs in the USA. Several fungi are associated with this disease and include Gaeumannomyces, Phialophora and Magnaporthe. These fungi are members of a group referred to as ectotrophic root-infecting (ERI) fungi, so named because they produce dark brown pigmented, ectotrophic runner hyphae on roots. Since there was almost no information on the distribution and pathogenicity of these fungi in tropical and subtropical Queensland, a research project was undertaken to;

(a) survey couch putting greens mainly Tifgreen 328 for the occurrence of ERI.
(b) prepare a data-base of historical information, past and current management practices and disease histories of the selected greens.
(c) isolate and identify fungi that produce ERI hyphae and,
(d) establish a culture collection of these fungi for subsequent pathogenicity evaluation.

The project commenced in September 2000 and is jointly funded by the Queensland Golf Union and Horticulture Australia. Three samplings (September/October 2000, January/February 2001 and June/July 2001) have been carried out and ERI fungi have been observed on most greens. Currently, over 120 fungal isolates are in storage and identification is ongoing. Protocols for pathogenicity testing fungal isolates on Tifgreen 328 are also being developed.



Roots of couch cultivar Tifgreen (328) infected with an ERI fungus. A. root completely rotted. B. developing lesions.

Turfgrass Research at The University of Melbourne

DR DAVID ALDOUS

Turfgrass research has been in progress at The University of Melbourne since the introduction) in 1990 of the Graduate Diploma of Applied Science (Turfgrass Science and Management).

Research has been conducted principally at the agronomic and plant physiology levels on topics ranging from endophyte and electrophoresis studies in Australian native and exotic grasses, the nutrient and irrigation regime of weeping grass (Microlaena stipoides), and the effects of plant growth regulators on the suppression of seed head and growth of winter grass (Poa annua).

Current research is being conducted into the effects of solid tining on soil physical properties, soil stabilization materials, the selecting of high performance warm-season grasses for intensive management, and the growth and adaptation of grasses for saline environments.

Further information may be obtained by contacting Dr David Aldous, telephone (03) 92506800, fax (03)92506885 or e-mail: daldous@unimelb.edu.au

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Maximising Turf Quality, Minimising Nutrient Leaching

Plate 2. Precision irrigator used at the Turf Facility

Improved information on fertiliser use efficiency in turf has been identified as a research priority for the Western Australian industry. The University of Western Australia, in partnership with Horticulture Australia Ltd and industry groups, has initiated a new study investigating fertiliser and irrigation management practises that will maximise turf quality, while minimising nutrient leaching. In this article Louise Barton and Tim Colmer outline the objectives of their 3.5-year research project.

Efficient management of nutrients and water is a major environmental and production issue facing the Australian turf industry. Turf producers, managers, customers and society are seeking more efficient systems for delivering consistent and high quality turf surfaces that do not impact on ground- or surface-waters. This is particularly challenging for turf management on sandy soils, as these soils are conducive to nitrogen and phosphorus leaching.

Fates of nutrients in turf systems

Nutrient management practices are best developed from an understanding of turf nutrient requirements, soil biogeochemical processes and the way dissolved nutrients move through the soil profile. Turf managers expect that the turf will take up a large proportion of the applied nitrogen and phosphorus. Nitrogen not utilised by the turf is subject to soil processes that may render it unavailable to plants. These soil processes include denitrification, ammonia volatilisation, ammonium fixation and nitrogen immobilisation (Figure1). Nitrogen not taken up by the sward, or made unavailable by soil processes may be leached. Similarly, phosphorus not used by the turf or "fixed" by the soil may also be leached. Many of the plant and soil processes that remove nutrients occur at a greater rate in the surface soil (e.g., top 20 cm) containing the turf roots. Irrigation and rainfall events that cause the nutrients to move beyond the rooting zone may lead to nutrient leaching. Therefore, choosing irrigation rates that maintain soil water in the rooting zone not only conserves water, but also minimises the risk of nutrient leaching.

In most sandy soils, denitrification, ammonia volatilisation, ammonium and phosphorus fixation occur at low rates. Consequently matching fertiliser application rates to plant demand, and maintaining nutrients in the rooting zone, is important for minimising nutrient leaching from turf and other horticultural systems. Fertiliser applications may be better matched by using split applications, and/or by using "slow release" fertilisers. Information on fertiliser types and irrigation regimes that will maintain turf growth, but minimise nutrient leaching, is currently lacking.

Developing appropriate fertiliser and irrigation regimes for turf

The effects of fertiliser types, rates, and interactions with irrigation regime on turf (Wintergreen couch) growth, quality, and nutrient leaching will be evaluated at the Turf Research Facility in Shenton Park, Western Australia. A variable-speed travelling boom precision irrigator (Short and Colmer, 1998) will be used to ensure water inputs are precise and reproducible.

Our field study will investigate four fertiliser types, each supplied at three rates, and under two irrigation regimes, with three replicate plots of each treatment located in a randomised block design. The four fertiliser types will be conventional (soluble) chemical fertiliser (NPK); slow release chemical fertiliser, pelletised fowl manure; and pelletised "bio-solids". These fertilisers vary in nutrient content and the rate they release nutrients, factors that may affect nutrient supply to turf as well as leaching patterns.

Nutrient leaching will be evaluated using soil lysimeters installed in the field plots. Lysimeters containing intact soil cores will be collected by carving plastic casings into the soil, and then establishing turf on the soil surface. By using intact cores, soil structure is maintained, which is important as soil structure influences how water moves through a soil. By monitoring the amounts of nutrients applied, the amounts taken up by the turf, and the amounts leached from each lysimeter, we will gain data on nutrient budgets for turf under various regimes.

Turf Research Facility at Shenton Park, Perth.

Selection of fertilisers to be used in the study

LOUISE BARTON AND TIM COLMER - FACULTY OF AGRICULTURE, THE UNIVERSITY OF WESTERN AUSTRALIA

Managing nutrients for different stages of turf development

Different fertiliser technologies may be more appropriate for different stages of turf development. Consequently we will investigate the fates of nutrients and turf performance during the establishment and later growth phases. In the first year of the study, plots will be established from "sprigs". At the end of the first year, turf rolls will be harvested using standard industry practices, and nutrient contents of the harvested product evaluated. In the second year, nutrient losses and turf performance during the re-growth phase and under the same treatments as the first year of study will be monitored. Nutrient management regimes more suited to the "maintenance phase" of turf will then be imposed and assessed in the third year of study.

Research Outcomes

Our findings on the fate of nutrients and performance of turf under different fertiliser and irrigation regimes will be made available to members of the Australian turf industry through a series of publications, seminars and field days. Updates on the project will be provided on our web site: http://www.agric.uwa.edu.au/turfresearch/index.htm

Acknowledgements

This research is supported by the Horticulture Australia Ltd (Project TU00007), Turf Growers Association of WA, Golf Course Superintendents Association of WA, Scotts Australia, CRESCO/CSBP, Organic 2000, MicroControl Engineering (Rainman), City of Stirling, City of Nedlands, WA Water Corporation and WA Waters & Rivers Commission.

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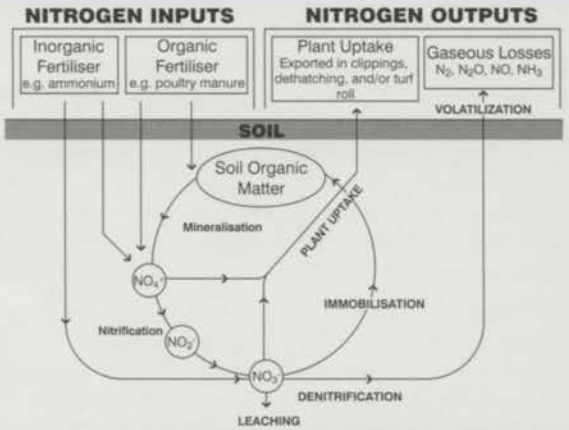

Figure 1. Simplified nitrogen cycle for a turf system. (Adapted from McLaren and Cameron, 1996).

A number of processes influence the fate of nitrogen in soil (Figure 1). Denitrification and ammonia volatilisation occur under different soil conditions, but both result in the conversion of nitrogen to gaseous species that can escape to the atmosphere. Ammonium ions can be adsorbed onto soil surfaces (still available to plants) or "fixed" by certain clay minerals (unavailable to plants), while nitrogen may also be retained by soil organic matter (i.e., nitrogen immobilisation). Nitrogen immobilisation, however, is unlikely to be a long-term sink if soil organic matter is not continually increasing. The overall objective in a turf system is to match nutrient inputs to plant demands as best as possible in order to minimise the possibility of leaching.

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Reducing Water Use by Turf Grasses in a Mediterranean Environment: Evaluation of Diverse Species.

Improved practice in irrigation management of turf (domestic and commercial) has been identified by the WA Water Corporation as one target area for water conservation (del Marco, 1990). Recently, the WA Waters & Rivers Commission estimated that as much as 30% of the 72 GL used to irrigate 1100 ha of turf on golf courses, parklands and recreational areas in metropolitan Perth could be saved (English et al., 1999). However, these targets may only be achieved by: (i) increasing knowledge on the water requirements and drought tolerance of a range of turf genotypes when grown under local conditions, and (ii) effective communication of such information to stakeholder groups.

In order to address the issue of water use efficiency in turf management a "UWA Turf Industries Research Steering Committee" was established in 1995, and this brought together stakeholders in the WA Turf Industry, Government, and Research arenas to set well-defined goals. A major concern was that relevant data on turf water requirements were not available to WA turf growers and managers to aid their irrigation decisions.

Thus, the objectives of our research were to determine the irrigation requirements, water use rates, and drought tolerance of 11 turf genotypes when grown during summer in Perth.

The information gained should help to reduce water use via: (i) improvements in irrigation scheduling based on quantitative data, and (ii) the identification of turf grasses with lower rates of water use and/or a better tolerance of drought.

Research conducted in the USA has shown variation among turf genotypes in rates of water use (Biran et al., 1981; Kneebone et al,. 1992; Huang and Fry, 1999; Duncan and Carrow, 1999), and this supports the validity of our approach to evaluate a diverse range of turf species. The vast majority of previous water use studies, however, have been conducted under well-watered conditions (Huang and Fry, 1999). Information on the impact of progressive decreases in soil water availability on turf, a situation of particular relevance to WA, is scant. Furthermore, local studies are required since turf grown in metropolitan Perth is challenged by a rather unique environment of sandy soils with a low water-holding capacity combined with hot, dry and windy summers.

Research Approach

Facilities and experimental design

A facility for turf research was established at the UWA Field Station in Shenton Park, approximately 8 km west of Perth's CBD. The site contained virgin Karrakatta sands of the Spearwood dune system. The infrastructure required to evaluate turf under various management

Table 1: Turf genotypes evaluated for water requirements, water use, and drought tolerance in field plots at the UWA Turf Research Facility at Shenton Park, Western Australia. The turf genotypes tested were currently used, or had potential to be used, in Western Australia.

Scientific name	Common name	Cultivar or selection
Warm season turf grasses		
Cynodon dactylon	Couch or Bermudagrass	Wintergreen
		Windsor Green
		CT-2
C..dactylon x C..transvaalensis	Couch hybrid or Bermudagrass	Santa Ana
Paspalum vaginatum	Saltene or Seashore Paspalum	
Stenotaphrum secundatum	Buffalo or St. Augustine grass	
Pennisetum clandestinum	Kikuyugrass	
Buchloe dactyloides	Buchloe or American Buffalograss	BT17
Zoysia japonica	Zoysia or Japanese lawngrass	ZT94
Cool season turf grasses		
Festuca arundinacea	Tall fescue	Arid
Lolium perenne	Perennial ryegrass	Accent

Table 2: Treatments imposed during the three summers of research. Each summer, five irrigation treatments (each replicated three times) were imposed on 11 turf genotypes grown in a randomised complete block design. Between each summer plots were allowed to recover, renovated following industry practices, and re-allocated to treatments using a design that minimised and quantified any "carry-over" effects.

Summer	Experimental period	Treatments
1997/1998	14/1/98-11/3/98	100%, 80%, 60%, 40%, and 20% of net pan evaporation (Epan) applied daily. Recoveries when re-watered at the end of summer were also assessed.
1998/1999	10/12/98-18/3/99	100%, 60%, 50%, 40%, 30% of Epan applied daily. Recoveries when re-watered at the end of summer were also assessed.
1999/2000	7/12/99-8/3/2000	100% Epan daily, 50% daily, 50% sum & given every 2nd day, 50% sum & given every 3rd day, 33% sum & given every 3rd day.

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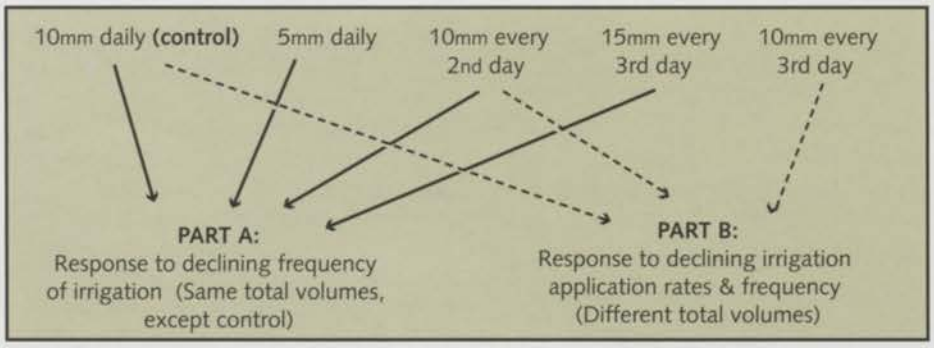
practices was installed and included: (i) a variable-speed precision boom irrigator, (ii) soil moisture monitoring systems, (iii) a weather station, and (iv) field lysimeters. The travelling boom irrigator enabled precise and reproducible watering treatments to be given to plants grown in situ, while being managed under current industry practice (see also Short and Colmer, 1998).

Eleven turf genotypes (Table 1) were planted during mid-January 1997 in a series of 9m² plots, randomised within 15 complete blocks. Each block also contained one plot of bare sand. The irrigation trials were conducted over three summers. Each summer, five irrigation treatments (each replicated three times) were imposed (Table 2). During the 1st and 2nd summers daily irrigation treatments based on net pan evaporation (Epan) were imposed so that "crop factors" for irrigation of the various turf genotypes were defined. During the 3rd summer the trial was split into two parts. Part (a) evaluated the performance of turf irrigated with the same total amount of water over the summer (except controls), but applied in increasing volumes in each application given after different time intervals (i.e. every day, every 2nd day, and every 3rd day). The treatments were equivalent to the net sum of 50% replacement of Epan over the summer. This level was selected since it was determined to be near the minimum requirement for several warm-season grasses during the first two summers. Part (b) evaluated turf performance when both irrigation volume and frequency were reduced. The selection of treatments was based on current recommendations for lawn irrigation provided to homeowners by the WA Water Corporation. The objective was to test whether the current recommendation of a "10 mm standard drink, every 2nd day for lawns in Perth during the summer months" could be decreased for some genotypes. Together, these trials tested whether the amalgamation of small daily water applications into larger, less frequent applications reduced the minimum irrigation requirement of a diverse range of turf genotypes.

Example of irrigation treatments imposed during the 1999/2000 summer, based on three consecutive days of 10 mm daily evaporation from the Epan. The example shows how the trial was split into two parts.



Measurements taken during the three summers:

(a) biomass production, as dry weight of clippings from each plot (weekly) and changes in thatch biomass (before and after treatment periods),

(b) colour retention, by chemical determinations of leaf chlorophyll concentrations and as canopy colour using a Minolta Chroma Meter colour analyser (every 2-3 weeks),

(c) plant water relations, leaf water content and tissue osmotic potential (selected times),

(d) turf water use, using weighing lysimeters installed into selected field plots (selected times),

(e) rates of soil water extraction, using soil moisture monitoring equipment (during treatments).

(f) root depths and densities (before and after treatments).

Summary of major findings

1. The minimum daily irrigation required to maintain turf growth and colour ranged from 50-60% Epan for the nine warm-season grasses to < 80% for the two cool-season grasses tested. The lower irrigation requirement for warm-season grasses was associated with lower rates of evapo-transpiration and deeper root systems in these genotypes compared to the cool-season grasses. The water requirements of the two cool-season grasses were consistently higher than those of the nine warm-season grasses, during all three summers. Moreover, the abilities of the nine warm-season grasses to recover following periods of low water availability were superior to those of the two cool-season grasses. These findings demonstrate the opportunity for water conservation by using warm- rather than cool-season grasses as turf species in metropolitan Perth. For example, the rate of water use by the cool-season Perennial Ryegrass was 1.81 times that of Wintergreen couch.

2. Genotypic differences in water use rates and irrigation requirements among the warm-season grasses were much smaller than the differences between warm and cool-season grasses. The maximum difference in water use rates among the diverse range of warm-season grasses tested was 6% Epan, which could result in at most a 10% saving in water. Nevertheless, the small genotypic differences were consistent over the three summers of research and showed: (i) the selections tested of the new species recently introduced to Perth (Buchloe and Zoysia) to be more sensitive to water deficits than the traditional species, and (ii) the perceptions by some that Buffalo requires more water, and that some couch genotypes require less water, than the other commonly grown warm-season grasses were unsubstantiated.

3. Amalgamation of the daily irrigations of 50% Epan into larger, less frequent applications providing the same net volume of water over the experimental period did not result in significant improvements in turf performance. In fact, for two genotypes (Zoysia and Buchloe) colour was reduced when irrigations were extended to every 3rd. In contrast, when the even smaller daily applications of 33% Epan were summed and provided as one larger application every 3rd day, the average period of time that the 9 warm-season genotypes were maintained in a satisfactory state was approximately doubled (viz. 3 weeks extended to 6 weeks). Thus, although the treatment of 33% Epan summed over 3 days was insufficient to maintain turf for more than several weeks during summer, small gains in water use efficiency may be possible by this strategy. The magnitude of the gains for irrigations between 33% and 50% Epan remain to be determined.

4. The current recommendation of a "10 mm standard drink, every 2nd day for established lawns in Perth during the summer months" can not be extended to a 10 mm application every 3rd day for more than a few to several weeks for any of the genotypes. All warm-season grasses tested, except Buchloe, were maintained in a satisfactory condition when watered at 10 mm every 2nd day for the entire summer. Nevertheless, quantitative assessments of colour showed marked decreases in some genotypes (e.g. Kikuyu), but only moderate or slight decreases in others (e.g. Santa Ana, Wintergreen), towards the end of the summer even when irrigated at 10 mm every 2nd day.

**Important to note:*
1. Trials were conducted under uniform irrigation conditions (i.e. Christiansen CU > 85%).
2. No wear stresses were imposed on turf grass surfaces during trials.
3. Sand used during trials was not non-wetting.
4. Additional information and data are available in Short and Colmer (1998; 1999a; 1999b)

Acknowledgements
Horticultural Australia limited (Project TU96002), WA Water Corporation, WA Waters & Rivers Commission, WA Turf Growers Association, Organic 2000, MicroControl Engineering (RainMAN), Golf Course, Superintendents Association of WA, WA Ground Managers Association

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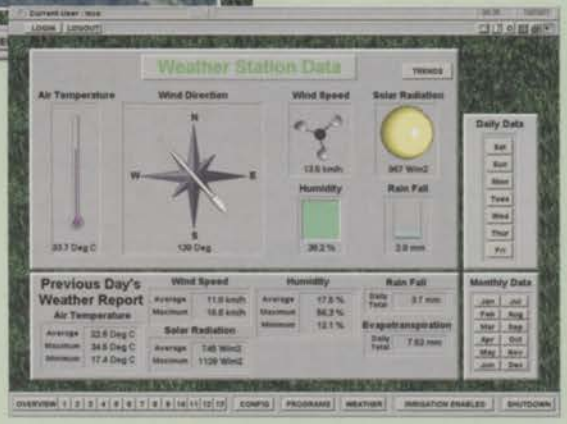

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Since starting at the course in 1989, Gary has made a host of improvements, including rebuilding many greens and tees, as well as installation of a new irrigation system. Gary's efforts over the years have ensured the impressive quality of the New South Wales course, and the continuous development plans for the course ensure it will remain a challenge to its members, and an object of awe for those who simply admire the view.

Gary's efforts and the quality of the course led to his recognition by his peers when he was awarded the AGCSA Fellowship Award in 1991. John Deere is a proud sponsor of the fellowship award. Selection criteria for the award, included:

- Excellence in the maintenance of the golf course given the resources available.
- Environmentally sound management of the golf course landscape.
- Contribution to the local and/or wider community.
- Contribution to the profession of Golf Course Management.
- Contribution to local, regional, state or National Golf Course Superintendent Associations.

Winning this award allowed Gary the opportunity to travel with a representative from John Deere Australia, on a tailored study-tour of the US, visiting golf courses of his choice, as well as John Deere manufacturing facilities.

During his trip to the US, Gary attended the GCSAA conference in New Orleans and visited golf courses in the area. He visited the John Deere manufacturing facility at Horicon, Wisconsin, which was the home of John Deere golf & turf equipment until last year, when capacity no longer met demand, and the Turf Care facility was built at Fuquay-Varina near Raleigh, North Carolina. He was also able to pay a visit to John Deere worldwide headquarters at Moline, Illinois.

Gary's introduction to John Deere turf equipment, through his visit to the Moline head office, and the manufacturing facilities began in 1991 during this study-tour. Since that time, his relationship with John Deere has assisted him in making important purchasing decisions for the NSW golf club. Impressed with the quality and reliability of John Deere products, and the unbeatable parts and service support provided through his local John Deere dealer, Gary is confident that he can trust John Deere and the company's commitment to the golf and turf industry with the most important asset on his course.... the turf!

Gary has recently purchased three (3) John Deere 3235B lightweight fairway mowers from Cess Hill Industries, his local John Deere Golf & Turf dealer. He commented, "John Deere's new B Series fairway mowers are a high-quality machine. While John Deere and its competitors were in a photo-finish at the winning post, it was John Deere's consistent, reliable approach to parts and service availability, that got them home first in the end."

Gary said, "I didn't purchase the cheapest machines in pure dollar terms, but I purchased the most valuable machines as far as the long-term quality for the NSW golf club, and sanity of its course superintendent is concerned. I know from experience that John Deere understands my needs for quality and reliability that will help give the results I am looking for on the golf course."

John Deere salutes Gary and his contribution to golf course management in Australia, and looks forward to continuing to be his Partner on Course.

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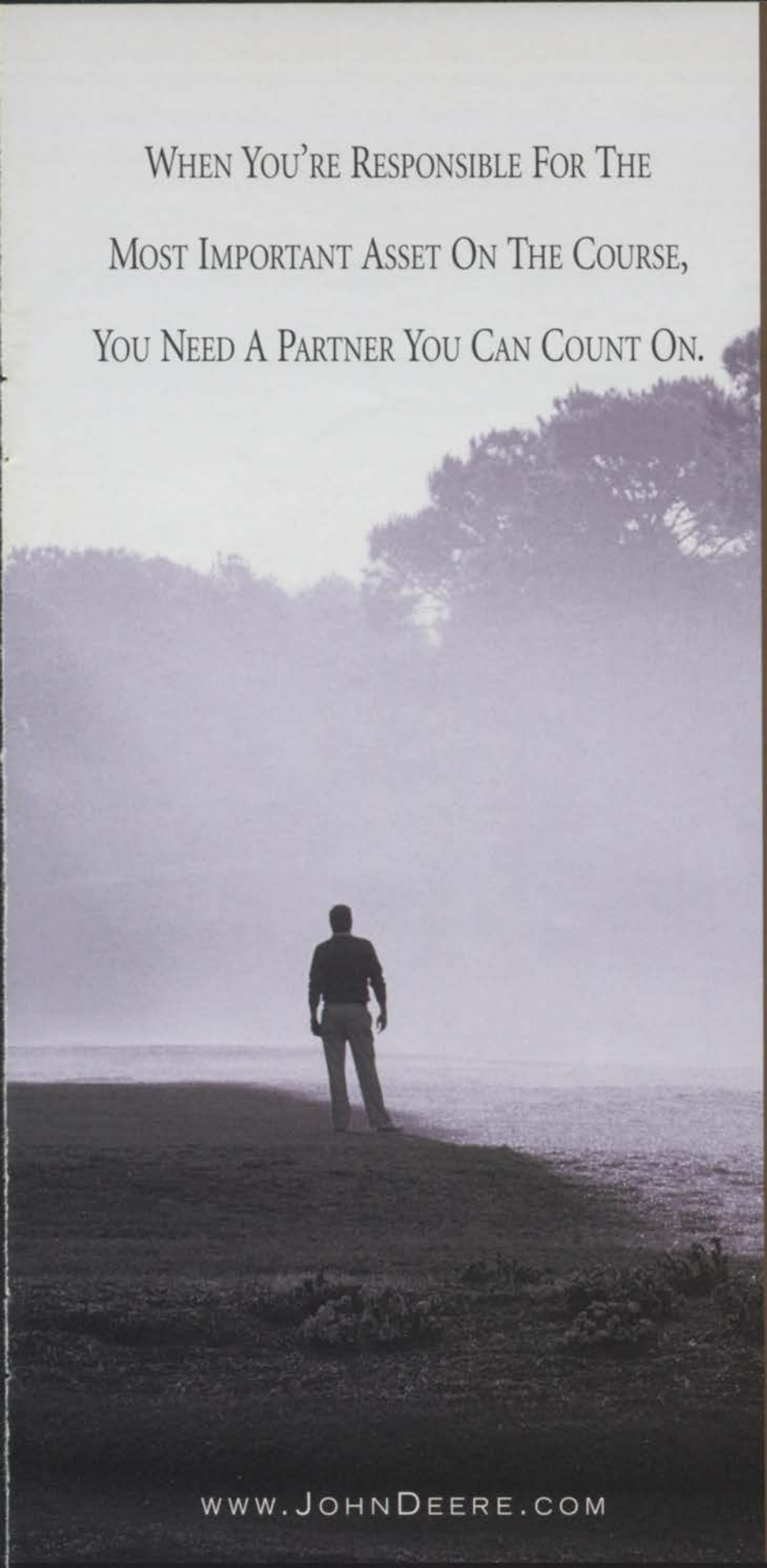

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SUPER PROFILE

NAME: Robert Reynolds

POSITIONS HELD:

Golf Course Superintendent, Denarau Golf and Racquet Club, Denarau Island Fiji

Assistant Golf Course Superintendent, Noosa Springs Country Club, Noosa Qld Australia

Assistant Golf Course Superintendent, Headland Golf Course, Buderim Qld Australia

Golf Course Superintendent, Gordonvale Golf Course, Far North Qld Australia

Greenkeeper, Daikyo Palm Meadows, Gold Coast Qld Australia

Apprentice Greenkeeper, Malua Bay Bowling Club

CAREER HIGHLIGHTS: I've been lucky enough to experience Rural, National and International Tournaments in Australia and on an international platform I have had experience with National & International Tournaments and International Corporate Tours / Tournament Groups e.g. International Family Golf Association. Perhaps the greatest highlights of all have been working with some great Superintendents such as James Millar, Wade Leech and Loch Ledford.

PRESENT CHALLENGES: It has been over twelve months since political upheaval in Figi spilled over into a full blown military coup on the 19th May last year. At the time I had little indication of what challenges lay ahead but somehow we managed to get through and have since staged the Figi Bitter Pro Am and more recently the Air Pacific / Mobil Figi Golf Open.

Denarau Island golf course is a 6570m-resort course designed by Ichi Motohashi, who is the President of one of Japan's largest golf design and construction companies. The development of the course took place on a low-lying mangrove swamp in 1990. Over 2 1/2 million cubic meters of fill was used to elevate the site and 8500 mature trees and shrubs were transplanted. The course has T328 greens and T419 fairways and some pretty astounding bunkers designed in the shape of sea animals, so when viewed while flying into Fiji you see octopus, sea shells, sea weed, a giant foot and other greenkeepers delights!

In many ways the place really is a Superintendents dream come true but fall-out from the coup really did stretch resources to the limit.

During the political crisis, the whole of Fiji experienced power cuts for three months. No power means no computer, and when your course irrigation is controlled by a site pro 8000, no computer means no pumps which means no water!

My team had a full time job in this tropical climate keeping water on the course. Pumps constantly dropped out; there were communication breakdowns and mainline breaks due to water hammer. Power became so erratic one of our plumbers slept each evening in the pump house!

Trade sanctions from Australia and New Zealand made it really hard to obtain spare parts, chemicals and fertilisers and at times, even getting something from the local hardware store was a huge drama.

Supply problems in conjunction with a seriously depressed tourism market has resulted in my management practices shifting from 'capital intensive' to 'labour intensive' management practices. During this period of uncertainty we have made a concerted effort to support the local workforce and have taken to hand weeding the entire course hole by hole. In addition to this, leaves and bunkers are hand raked and cart paths and roads are swept with large palm fronds. Diseases and pests are for the most part being tolerated. Swarms of minor birds feast regularly on lawn grubs. We are finding the diseases and pests during this dry season are rarely severe enough to impact on course "playability". We are monitoring them and where appropriate letting them and run their course.

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Results have been surprisingly good and the tourist love it!

Staff moral was a major issue throughout the crisis and given that we employ staff of both Indigenous Fijians and Indo Fijians racial tension in the work place resulting from the unstable political climate had to be constantly monitored. With large layoffs in other parts of the tourism industry, staff immediately became concerned about their jobs. We had to constantly re-assure staff that their jobs would be secure. To this date with plenty of budget juggling all permanent staff are still employed.

On a more personal note there was the safety of my wife Erica and our two young children (4yrs & 1yr) to consider. On the 19th May, after collecting my son from the International School which had just been closed, Erica and the kids were evacuated from our home which was approximately 20 mins. from Denarau Island in an area called Voteau Levu. In a time frame of approximately 1.5hrs, Erica with our house-girl Neli and some members of my staff sent out in trucks to assist, packed the entire contents of our house into whatever they could lay our hands on and moved it to our home under construction on Denarau. Evening curfews became the norm, supermarket shelves were fast emptying, and airport closures were imminent, restricting our movement in and out of the country. We faced some hard decisions and on the evening military control of the country was announced my family left the country enabling me to focus on the job at hand without concern for their safety.

Normal life in Fiji apart from political upheaval is full of challenges. Prior to May, we built a new house on Denarau Island to live in. If you have ever had any experience haggling over the price of a bula shirt in Suva or Nadi then you will know the wonderful challenge of having to haggle over the price of every nut, bolt and washer on the whole project. This is similar to the daily occurrence when purchasing locally for the golf course maintenance supplies.

One thing I've learnt through all of this is the importance of working with a team I can trust and who have learnt to trust me. The Fijian people together with the ex-patriot community are working hard to restore normality in this beautiful country and I'm proud to be apart of the team.

The staff of Denaru Island Resort

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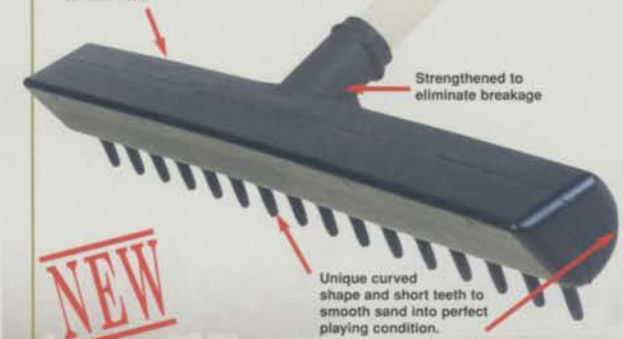

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news

JOHN DEERE TEAM CHAMPIONSHIP – COMING SOON

John Deere Australia, in conjunction with the AGCSA is proud to announce a new event on the Golf Calendar this year. The John Deere Team Championship is a golf tournament held each year for the last 14 years in the US. For the first time, 2001 will herald a global event, with the John Deere World Team Championship to be held at the Grayhawk Country Club in Arizona from the 14th-18th November.

John Deere Golf & Turf franchised dealers across the country will be holding local tournament events, with the top two teams from each event then able to compete in the local qualifier to be held in Queensland on the 3th and 4th of October.

Teams of four can be submitted from golf courses across the country, and a modified scramble format will be used to run each event. Eligible teams will consist of the following from each course:

- Golf Professional who is a member of the PGA
- Golf Superintendent who is a member of the AGCSA or local association
- Club President or a member of the current Board of Directors or supervising entity of the facility
- Club Manager or a member of the current Board of Directors or supervising entity of the facility.

The Western Australian team championship has already been held in conjunction with the GCSAWA and the local John Deere dealer CJD Equipment. This Management Challenge is held each year with 2001 boasting an exceptional turn-out. By all accounts the day was a resounding success.

The winning team on the day was Lake Karrinyup Country Club, with second place going to the Cottesloe Golf Club, and third to Kwinana Golf Club. Both the Lake Karrinyup team, and the Cottesloe team will make their way to Brisbane in September to take part in the National final, from which the winning team will be invited to compete in the John Deere World Team Championship in Arizona later in the year.

An added bonus for the golf and turf industry across Australia, is John Deere's donation of US$25 to be paid to the AGCSA for every team that competes in the regional competition.

Remaining John Deere Team Championship events are being held by by John Deere & Turf dealers as follows.

State	Dealer	Venue	Date
NSW	Sharpes Tractor Centre	Newcastle Golf Club	Fri 10th Aug
	Cess Hill industries	TBA	TBA
VIC	Glenmac Sales & Service	Kingston Links	Tue 4th Sept
SA	Metropolitan Machinery	Belair Golf & Country Club	Thu 30th Aug
QLD	BHM Machinery	Gailes Golf Club	Mon 10th Sept

PGG SEEDS ANNOUNCES NEW VICTORIAN TURF DISTRIBUTION PARTNERSHIP.

PGG Seeds are proud to announce the appointment of Oasis Turf as the primary Victorian distributor for the specialist Ceretec turf seed range.

PGG Seeds have established themselves as a leading breeder of adapted turf grasses for the unique Australian environment, and see the partnership with Oasis Turf as a natural progression which will result in enhanced service levels to Victoria's professional turf managers.

PGG Seeds will continue to provide full technical support through their extensive trial and evaluation programme based at the Ceres Research Centre. This is backed up by their local turf team of Cameron Henley and Dick Evans.

For more information contact Cameron Henley at PGG Seeds 0418 880 633 or Peter Harrington at Oasis Turf 0412 042 724

GLOBE EXPANDS INTO THE GOLD COAST

Globe have announced their further expansion by opening a new trade warehouse to service the greenkeeping industry on Queensland's Gold Coast. Globe have taken over tenancy of the premises formerly occupied by Primac at Labrador. "Our desire has always been to consolidate our following on the Gold Coast and this provides us with an exciting opportunity to increase our presence there", said Andrew Knox, General Manager for Globe. "Feedback from the market place has been very enthusiastic so we are confident that the timing is right".

To ensure a seamless transition, Globe will retain many of the staff formerly with Primac and run the operation in a similar style. "Ultimately, our business is about people and we want to ensure that our customers and the new additions to our staff find working with Globe a worthwhile and rewarding experience", Mr. Knox said.

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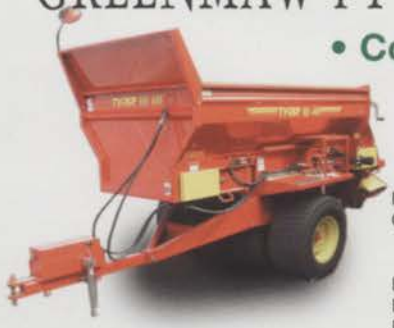

MH 400 TyCrop topdresser with cross-conveyer & swivel.

Greenmaw Constructed Courses:
- The Ocean Course, The National. Cape Schanck, Vic
- The AGU Open Championship Course, Moonah Links, Vic
- The Dukes Course, St Andrews Scotland.
- The Links, Port Douglas, Far North Qld.

MH 400 TyCrop Topdressing:
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Approx 1Ha/day of Couch stolons.
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Proven results:
- Ocean Course, The National.
- Moonah Links, Rye.
- The Links, Port Douglas.

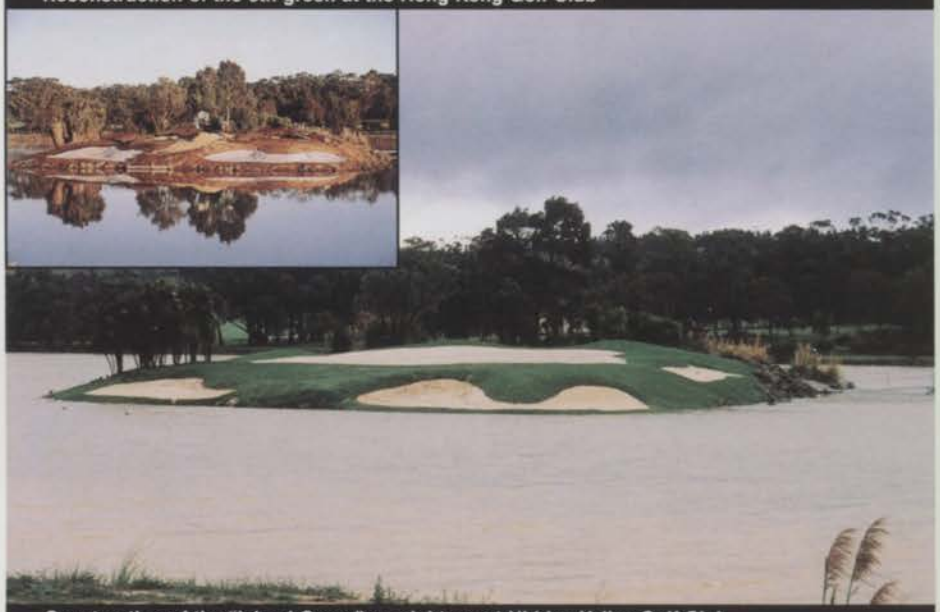
Line planter in operation at Ocean Course, The National, Cape Shank.

DENSAL Pty Ltd

Densal initially began its life as a plant hire company back in early 1996, hiring specialist golf construction equipment to various golf course construction companies in both Victoria and South Australia, for the construction of both the Patwalonga and Sanctuary Lakes Golf Courses.

Densal now employs 20 permanent staff

Reconstruction of the 6th green at the Hong Kong Golf Club



Construction of the "Island Green" on eighteen at Hidden Valley Golf Club

As the business grew, with further subcontract involvement in the Hidden Valley and Heritage Golf Course constructions, the equipment fleet was increased to include 3 shaping dozers, 5 excavators, 6 Bobcats, articulated loaders and other various allied turf and construction equipment.

In October of 2000, seeing a window of opportunity in the golf course and turf industry, the decision was made by both Densal directors, Chris Young and David Pulling to undertake construction and maintenance contracts in their own right, after severing the previous connections with a now former golf course construction and maintenance company and subsequently Densal Pty Ltd was born.

Initially securing the contract to complete the construction and maintenance works at Hidden Valley Golf Course involving 30 new bunkers, 10 km of fairway drainage, 10 tees and grassing works together with a further 7 year contract to maintain the golf course, Densal's customer Golf Course base has now grown to included the construction of nine new holes at Drouin Golf Club, the construction of the 15th tee at Morack Golf Course, the reconstruction of the 6th green and practise area at the Hong Kong Golf Club, construction of various lake/mounding/shaping works at the Medway Golf Course, the laser levelling of tees at Spring Valley Golf Course, the recent appointment by Eastwood Golf course to undertake various construction and shaping tasks at the course, the construction of the Roxburgh Park Oval and various other large scale turf and landscape projects.

Chris Young (Director and Major Projects Coordinator) and David Pulling (Director and Service Manager) together with Mick O'Shannessy (Turf Manager), Paul Reeves (Golf Course Construction Manager) and Bob Jones (Landscape and Turf Construction Manager) and 20 permanent staff, today bring together over 80 years of experience in the turf maintenance and construction industry with the capability to undertake projects from entire golf courses through to minor reconstructions or turf renovations.

Key Contacts:

Michael O'Shannessy - 0409 231 385

Paul Reeves - 0419 895 939

Chris Young - 0417 380 298

Email: chrisy@tpg.com.au

Ph: (03) 5966 6251

Fax: (03) 5966 6451

Aventis Environmental Science is pleased to announce another addition to its comprehensive range of CHIPCO Turf Fungicides - Chipco Rovral GT. Chipco Rovral GT is an altered formulation of the tried and trusted Chipco Rovral Liquid fungicide which has been one of the mainstays of the Australian turf industry for many years. This new formulation delivers even quicker disease knockdown. In fact, within 24 hours you will see Dollar Spot and Brown Patch knockdown.

Chipco Rovral GT offers broad spectrum disease control and is registered for use on Brown Patch, Dollar Spot, Fusarium Patch, Spring Dead Spot and Helminthosporium. Chipco Rovral GT affects all phases of the development cycle of fungi.

- Spore germination - this makes it an excellent protectant
- Mycelial growth- a feature that provides curative action
- Spore production- Chipco Rovral GT inhibits the spread of the disease.

Quicker disease knockdown as a result of application of Chipco Rovral GT allows turf to repair disease damage and recover more quickly. An added feature of Chipco Rovral GT is its suitability for preventative disease control- providing at least 14 days of protection. Rovral is the proven performer - it is safe on all turfgrass species and is a low hazard to the user, the public and the environment when used as directed. If you require further information about Chipco Rovral GT contact Aventis Environmental Science on 03 9248 6888 or your Nuturf representative. Chipco Rovral GT is distributed exclusively by Nuturf 1800 631 008.

New from Nunes

Manoeuvre Mow Pty Ltd appointed distributors for Nunes Manufacturing Inc USA to Australian and New Zealand. The range of unique hydraulic drive floating head rotary mowers and vacuums includes:

•Model 360 trailing 7 unit 3.5 metre cut, free floating head mower with anti-scalp skids means that mowing the meanest undulations is well within your grasp. Tractor requirement is 40hp, robust construction 7-gauge carbon steel decks, adjustable cutting heights from 20mm to 90mm. This machine offers practical, low maintenance, long life mowing (no belts, pulleys, or gearboxes).

•Models 255D,355D,173D&6755-6555T These are conversions kits for: JohnDeere models 3235A/B models 2653A—-3365—-3325

•Toro 6700 golf fairway and parkland ride on gang mowers.

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- Act as a valuable tool for CPR training courses.
- Build rescuer confidence.

For further information contact Safety Communications on 1800 685 482.

CPR Ezy

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VIDEO

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Please note: All prices include GST.
Prices are subject to change without notice.

Golf Course Tree management

By Sharon Lilly

To start with, I found this book to be a bit aggravating due to the sometimes unclear black and white photographs and line diagrams that were somewhat confusing.

This may just indicate that I am a bit thick but as a I got further into the book it became quite obvious that this is a huge subject to try and tackle and the level of experience of the reader in dealing with trees on golf courses will probably determine how much value the reader will get out of this book.

The subjects covered are pretty diverse and there is some good, worthwhile information from a variety of sources. The book covers the value and importance of trees and deals with their place in the shaping of fairways and aesthetics. It covers the form and function of trees and how they grow. There is some good information on tree physiology and the trees defence mechanisms. There are chapters on Trees versus Turf and Design and Construction with some good tips on how to correct tree damage. Other chapters include; Planting and Transplanting, Tree Maintenance, Hazards, Training your own tree maintenance team and hiring a professional tree care company.

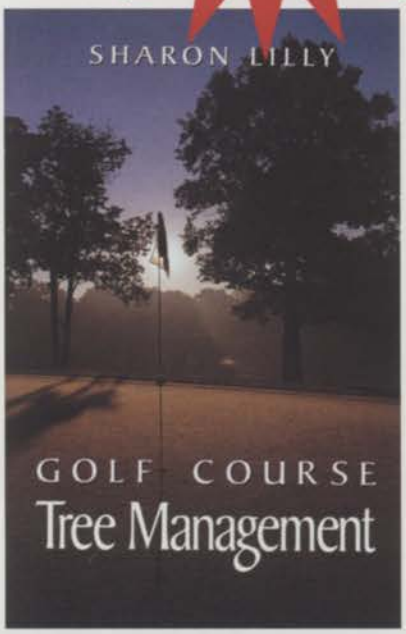
The book is not enthralling reading but there is plenty of good information.

This would be a great reference to have in your library but as it is written in the United States, it concentrates more heavily on US species and conditions which does limit its usefulness here.

In my opinion the 'tree Bible' is Shigo's 'New Tree Biology' but this book certainly gives the Golf Course Superintendent some good ideas.

Jon Pemberthy
Gainsborough Greens Golf Club

AGCSA Member Special $100



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FNQGCSA

A meeting of the FNQ chapter on June 5th expressed concern that ongoing 328 decline problems on some courses is severely limiting the choice of greens grasses. A number of courses have problem greens with poor air-flow which, when combined with heavy cloud cover and fungal outbreaks, result in badly diseased greens with poor recovery. In recent years, a number of ecotypes appear to have evolved on a few courses in the north. Some of these appear to avoid the above problems, resulting in islands of very good playable turf surrounded by weak, diseased 328. At Novatel, Palm Cove, the 4th green had a number of these good patches surrounded by sparse 328 and Tifdwarf.

We feel that promising cultivars from courses where they appear should be evaluated for the industry as a whole. As there are new varieties becoming available such as Tifsport, Tifeagle and MS Supreme, it seems timely to evaluate these at the same time if at all possible.

A collection of some of the local cultivars exists at Tropical Lawns turf farm, where it is planned to hold a field day on Thursday 13th September. Input from the AGCSA would be very much appreciated, mainly in terms of sourcing the newer varieties, and other cultivars in trials at Lakelands, and some assistance with assessment criteria and physical help with evaluation. A meeting of the local chapter will be held on the same day / venue. Terry Anderlini from Tropical Lawns intends to apply for Plant Breeders Rights for two varieties that have performed well in difficult conditions. A proper evaluation of all available cultivars and named varieties will allow the AGCSA to make well researched recommendations to its members.

Paul Earnshaw

President, FNQGCSA

GCSAQ

As the cold weather has now really kicked in it's time to drag out the extra set of track suit pants and the beanie and gloves. Big blanket frosts over the golf courses in the South East with patches up to Townsville as the temperatures dipped to 10 degrees below average and -3 degrees was registered at the Gold Coast Seaway.

For those who made it to the AGCSA National Turfgrass Conference in Sydney, the program turned out to be a lot better than expected with some very good workshop sessions and some great information on technical aspects of Golf Course Maintenance. I thought the best sessions were the open forum on Committees and how to get the best out of them, Andrew Baker's presentation on Sanctuary Cove's certification under the Audubon Society Co-operative Sanctuary Program, the research papers presented by Superintendent's studying under Professor Peter Martins Masters Program at Sydney University and the salary packaging workshop. The AGCSA Claude Crockford Environmental Award, fittingly, was awarded to Andrew Baker of Sanctuary Cove. At some stage we hope to get AB to give his award winning presentation at a field day. He is already taking bookings from other states!

In other news from the conference, the new board of the AGCSA is Mark Couchman, President with Jeff Gambin, Rob McDonald and Dave Warwick filling positions on the board. Prerequisites for the position must have included doing some time at Arundel Hills Golf Club, don't know how Jeff scraped in? The touch football match was played at North Sydney Oval, one of the prettiest grounds you could hope to visit. Once again the 'Trade Barbarians' were victorious but the Qld team put up a great fight with some stand out performances by David Scutts doing his Wally Lewis impersonation, Eric Rickman doing his Ricky Walford impersonation sprinting on from the sideline much to the shock of the opposition winger, Rod Cook doing a few Ben Tune slides across the goal line and Andrew Smith tireless in

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defence. Jason Adams did a fair bit of running around, Max Laverty and Graeme Sims did plenty of barracking and the team was once again finely managed by Max Stevenson who introduced the BBQ steak sandwich as a warm up before the 3rd game. Bill Clarke and Allan Woods deserve a mention for being good competitors but they lined up in the wrong teams. Once again, a great night was had by all.

Back to the turf, changes around the traps include the appointment of Roger Harle as superintendent of Arundel Hills Golf Club after their experiment with turf maintenance contractors. Doug Robinson has been maintaining the course for the past year after being called in to rescue the course after management had decided to replace the original contractor . At Headlands Golf Club on the Sunshine Coast they have appointed Robert Cairns to the position of Superintendent. Mark Jarzabek has moved from Primac Turf to join Nifsan group. Globe Australia has taken over the Primac building in Brisbane Road Labrador and will be carrying on servicing their turf customers on the coast from there.

Our most recent field day was the Toro Golf Championships held at Indoorpilly Golf Club where host Superintendent Peter Sawyer presented the course in excellent condition to challenge the players on the day. We had 30 starters lined up with a couple pulling out at the last minute. Once again Ross Sarrow from Toro put up some great prizes for the golf. It was a pity that more people could not make the effort to attend what turned out to be a great day. Toro has supported our Golf Championships for many years now and their efforts are certainly appreciated.

After a fine lunch, Peter Sawyer gave an informative presentation detailing the history of the Indooroopilly Golf Club which include it's move from the St Lucia site to the present Long Pocket location and the efforts made by past superintendents to produce one of Brisbane's premier golf layouts. Peter outlined the program the club intends to pursue to take the club to the next level of excellence and from playing the course on the day it would seem they are well on the way. Ross Sarrow then gave a presentation on Toro's new Greenmaster Flex 21 walk mower, a pivoting head greens mower with innovations to make the job easier and provide less margin for error in greens mowing. The unique flexible cutting unit closely follows undulations, two front rollers instead of one, catcher attachment to the drive unit rather than the cutting head, single lever traction and real drive control and tapered drum roller all combine to reduce scalping and ridging and improve the quality of cut provided. Mark Couchman then gave a brief overview of the recent 17th Australian Turfgrass Conference and there ensured a round table forum on the good and bad points of the conference, the AGCSA'S direction for future conferences and the role the Queensland Association has to play in the industry. The subject of field days and their support from members was raised as it is concerning that numbers attending are generally down on previous years. A strong Association is one in which the members are actively involved and participate, obviously all members can't attend every day that is put on but you only get out what you put in and there is always something to be gained at these days. The point was raised that there should be some educational content involved at each field day to justify the attendance of members and it was suggested that 9 holes of golf may be more appropriate to allow more time for speakers and trade displays. Over the next few months we will be trying a variety of formats to try to provide something of interest for all the members. I would encourage all the members to have their say on matters relating to our Association and to stand for a position on the committee as the benefits are rewarding. All in all the discussion at Indooroopilly aired some worthwhile suggestions and observations for both the State and National Associations. Thanks go to Peter Sawyer and Indooroopilly Golf Club and to Ross Sarrow and the Toro organization for the opportunity to get out and have a look at this magnificent golf course.

To other matters concerning our industry, the Code of Practice for Noise is nearing completion. At a recent meeting of the QGU sub committee on research Peter Sawyer and Kelly Hyland represented our association, the EPA and Secretary Managers were involved as was the Queensland Golf Union. The final draft was picked over for amendments and is now being prepared for presentation to the Minister for the Environment, Dean Wells. A lot of time and effort has gone into this document, hopefully it will do the job we require of it, if not we go back to the drawing board and start pressuring for a change in the legislation.

The Queensland Golf Industry Awards are to be held in November this year at The Greek Club in Brisbane, a change of venue and date, if any superintendents have an apprentice who has finished his apprenticeship in 2000 and is deserving of nomination for the golf course apprentice of the year award please fill in a nomination form and mail it before Aug 31 back to "GCSAQ turf apprentice". C/- Pat Pauli 32 Poinsettia Ave MOOLOOLABA 4557 QLD.

UP COMING EVENTS CALENDAR:

1st, 2nd and 3rd SEPTEMBER: *GRANITE-BELT TURF TOUR.* Incorporating a game of golf at Warwick, Stanthorpe and Tenterfield. An indication of numbers interested will be needed to assist in planning. Cost to be $100.00. Please send with return coupon to the Secretary, Cheques to GCSAQ, 69 Chevallum Rd. Chevallum. 4555 Qld.

OCTOBER: *A.G.C.S.A. Roving Seminar* to be on Management skills for Superintendents . Date and Venue to be announced.

NOVEMBER: *T&I sponsored Educational Day* at Southport Golf Club featuring Terry Woodcock speaking on various subjects including Patch Diseases in greens turf, Root Sloughing in Couch Grass and Summer Decline. This will be followed by golf at The Glades at a cost of $85 per head for golf. Contact T&I with expressions of interest on (07) 55 290 266.

8th NOVEMBER: *Golf Industry Awards Night Dinner* at the Greek Club, featuring a high profile sports management speaker and recognition of the high achievers in our industry.

8th DECEMBER: *The Wet and Wild Christmas Party* is on again, we hope to get plenty of members along with their families for a more informal day with the Superintendents Speedslide Challenge title up for grabs again.

Late breaking news, Allan Woods baseball career takes off with a home run hit at Foster Tuncurry, Pat Pauli is back from his cotton picking adventures, Glen Dunstan continues with his in-line skating as a roller hockey goalie, Barry Cox is busy moving soil around with bulldozers on the site after his WA golfing tour, Mick Trivett is hard at work again after his WA surf trip with Rob McDonald, Andrew Smith is in the process of deciding on a new irrigation system with the help of a government grant and Eric Rickman of Mackay Golf Club reports he has had a substantial windfall after the State of Origin victory by Queensland and is now waiting for all those who placed bets with him to pay up! Specifically, 'Swervin' Mervyn' from Cypress Lakes, M. Black, D Scutts, A Smith, and a cast of thousands who were at 'the local' late at night, you know who you are!

Jon Penberthy

President GCSAQ.

GCSAWA

The contingency of Western Australian golf course supers attending the 17th Australian Turfgrass Conference in Sydney were all very complimentary of the conference content, trade show and the fine Sydney hospitality. The magnificent Lakes Golf Course was certainly a fitting test of golf for the AGCSA Golf Championships. Congratulations to Darryl Sellar from the Glenelg Golf Club in S.A on winning this hotly contested event.

Congratulations also to all winners of the AGCSA Awards. Our very own Jeff Austin from El Cabalo Blanco was selected as a finalist in the distinguished AGCSA Claude Crockford Environmental Award. Keep up the good work Jeff.

Round 7 of the CJD super series was held on the 3rd of July at Chequers golf club approx 45 minutes north-east of Perth. Golf Course Superintendent Gavin Castiglioni and staff presented the course in superb condition, treating those that played to a truly memorable day.

Cottesloe Golf Club is the venue for our associations AGM on August the 28th. This will be held in conjunction with round 8 of the CJD super series. Good numbers are expected at this event which will also include a brief innovative presentation from Lin Hambleton on the development of a manual for golf club operations.

As I will not be renominating for a position on the state executive committee this year, due to my appointment as a Director of the AGCSA, I would like to thank all WA members for their support during my time on committee. It has been a very enjoyable and enlightening experience.

On the 30th and 31st of August our association in conjunction with a number of other turf related associations, the water corporation and Murdoch TAFE have pooled our resources to put together a hort industry trade show called "turfest 2001". This event will be held at the Murdoch TAFE campus with the aim of uniting the turf industry in WA and allowing turf trade companies to showcase their products at a low cost venue. Invitations are currently in circulation for what promises to be a great show. Hope to see you there.

Regards

Rob Macdonald

President GCSAWA

NSWGCSA

After the massive rainfalls recorded in May, many courses have dried out thanks to the warmest June in most areas for 44 years.

Coastal areas in particular enjoyed the drier conditions and many courses in the western districts are reporting fewer frosts than in previous years. As long as we don't get a record cold in August most people should be pretty happy.

The 17th Australian Turfgrass Conference has come and gone, and although the numbers were slightly down, the people who made it to the "best city in the world" will tell you they had an informative and enjoyable week and I am sure they will return to their respective positions in the industry better for the experience.

Congratulations to David Warwick from Avondale Golf Club for his successful election to the AGCSA board.

All New South Welshman were enormously proud of Peter Brown and his staff for showing the Lakes Golf Club in all its glory; it really is a world-class golf course. Typical of our hospitality we let Darryl Sellar from South Australia win the AGCSA Golf Championship.

We managed to defend our State teams title and thereby avoided a Royal Commission.

Unfortunately our inter-state rivalry with our Queensland friends has seen quite a sum of money leaving this state after the State of Origin final.

Our next state meeting is the annual Cypress Lakes Golf Day, with Merv Hayward as usual the host Superintendent.

Treasurer Craig Easton will be host Superintendent at Carnarvon Golf Club for the AGM on the 30th August. (Let's have a good roll up for this gentlemen).

See you in spring.

Martyn Black

President, NSWGCSA

SAGCSA

Since the last report the SAGCSA has held its AGM at The Royal Adelaide Golf Club with a good day being had by all who attended. Thanks go to our sponsors Nuturf and of course to host Super, Jeff Kaines for the condition of the course.

Congratulations go to Bob Dellow on being elected a life member of the State Association for his sterling contribution over the years.

This year's committee consists of:
President: Shaun Stanfield- Belair Golf Club
Secretary: Bran Cooper- Mt Osmond Golf Club
Committee:
Peter Hayfield- Blackwood Golf Club
Rob Millington- The Vines Golf Club
Steven Newell- Kooyonga Golf Club

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Any members wishing to purchase merchandise with the new state logo should contact one of the above committee members for more information.

Delegates who attended the recent Sydney Conference thoroughly enjoyed themselves.

Congratulations to the AGCSA on a job well done.

Our next meetings will be held at The Vines Golf Club and Willunga Golf Club- we look forward to seeing you.

TGCSA

Our association members are in for a very busy period between July and December.

Our next event on the calendar will be the AGM on the 15th August. Put your thinking caps on and be instrumental in activities which "you" as a member, need to give input, to gain the most out of your membership.

On the 29th August Allan Phillips and crew will hold a Toro field day, displaying their full range of commercial and industrial mowers and equipment. This event will be at the Launceston Golf Club.

Industry Changes: Craig Walker from Ulverstone Golf Club has filled the position of Superintendent at Pittwater Golf Club.

We have been very fortunate to have had such a mild winter but I'm sure most Supers are looking forward to spring. Rainfall has been well below average, causing some concern in other areas of horticulture and agriculture.

That's about all from the little island.

Phil Hill

President, TGCSA

TGAA (Vic)

It's all happening on the turf front currently and the calendar is chock full of opportunities to further your professional development.

220 delegates attended the Victorian Cricket Association / TGAA Annual Turf Seminar at the MCG.

A wonderful day that was enjoyed for its quality of content and chance to network with other groundstaff, managers and representatives from various cricket associations. Trade exhibits by our valued sponsors and refreshments in the Landy Room separated from the lecture area in the Strickland Room helped with the success of the day. The theme of "renovations" was comprehensively covered with Tony Ware leading off with Key performance indicator lists and stressing the value of good planning. This was followed up with topics on chemicals that help with renovation success, seed vs. sod vs. washed sod, pitch preparation and monitoring during the week and long-range weather forecasting. A tour of the 'G' and a quick look at the mighty hawks training session was enough before lunch. The day was capped off with a case study presentation by Scott West on his successful renovation of the Albert ground and a forum to review the days proceedings. Congratulations to Chris Nys from ANCO who won the door prize. His wife Daphne will be very warm this Winter!!

Bruce Stephens did a great job as MC and Simone once again administered a great event. Thank you to all that helped in some way especially those who attended, we hope you enjoyed the day.

The AGM is our next opportunity to meet. It will be held at Trinity Grammar School, Bulleen on September 4th at 1.30 pm-4.00pm.

I would like to thank the committee for their support. It has been a busy year of change and challenges with our new structure and business plan. All positions are open so come and have a say in the future of your Association.

Robert Savedra

President, TGAA (Vic)

TGAA (ACT & Surrounding Regions)

After such a long period it was good to see the AGCSA bringing the Turf Conference & Trade Exhibition back to Sydney. This made it easy for many in the ACT & surrounding districts to attend & from all reports it was an excellent affair. The conference catered to the varied representation of delegates & covered many aspects of the industry, with a particular emphasis on water management. The TGAA is grateful for the continuing support given by the AGCSA and hopes to continue the alliance.

During the conference a meeting of the National TGAA Committee took place, the second meeting since the conception of a national body. Representatives from the ACT, Victorian, Murray River region & Tasmanian branches attended the meeting. Although still in the early stages of development for the body, the meeting was a productive and vital step in planning. Structural management and policy issues such as the goals & objectives of the National TGAA were discussed and there was agreement on the fact that although there will be a national representative, they will have no influence or authority over how the separately run State divisions are operated.

The first copy of a national newsletter has been produced and tells some of the history of the various branches of the TGAA and the

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objectives of forming this national body. Many thanks go to Simone Staples for her work in compiling the newsletter. We anticipate huge growth for the National Turf Grass Association of Australia, which will provide support and recognition for the turf managers of tomorrow.

In local news, the Canberra Institute of Technology (faculty of Applied Science) is taking enrolments for Certificate V in Turf Management to commence in the second semester of 2001. Prerequisite is completion of Certificate IV or equivalent.

The TGAA is conducting an open field day for the seed trials on Wednesday 17th Oct 2001, take your place at Canberra Institute of Technology, Weston campus for a 12 noon BBQ start. For further details please email Bruce Davies; bruce.davies@cit.act.edu.au

Till next time, agrostologists.

Justin Haslim

Committee, TGAA (ACT & Surrounding Regions)

VGA

Our association has had tremendous support from the government, Victorian Sport and Recreation, and we appreciate the recent grant of $30,000.

This grant will go towards:

- Awards
- VGA web site
- Turf library
- VGA seminar
- Research

On a sad note the VGA would like to pass on our condolences to Ian Latham, (Ocean Grove Bowls Club) with the passing on of his wife Valerie Latham. Our thoughts are with you Ian.

With a bit of luck the weather should be warming up in the next few weeks for the start of the bowls season in early September. The VGA will be keen to start the season with green keeping bowling days on the agenda, so we hope you will support us and come along. Dates for future events will be in the next report.

Until then, all the best for next season.

Peter Rasmussen

VGA committee

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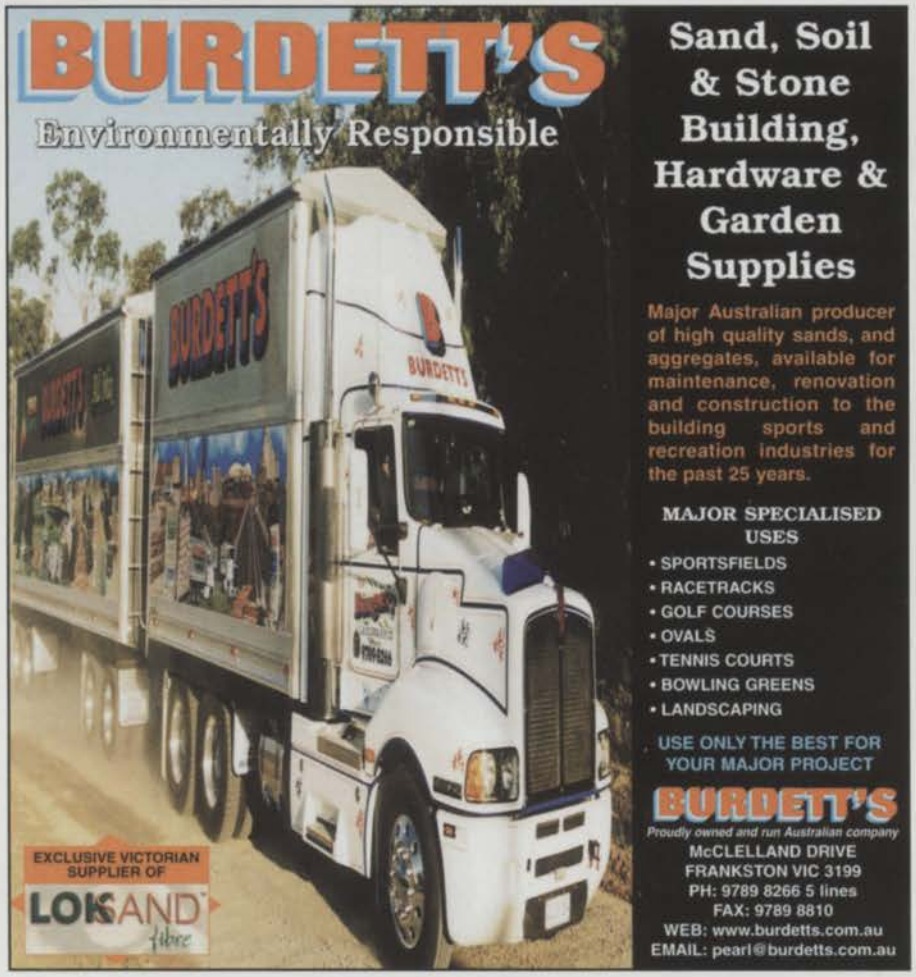

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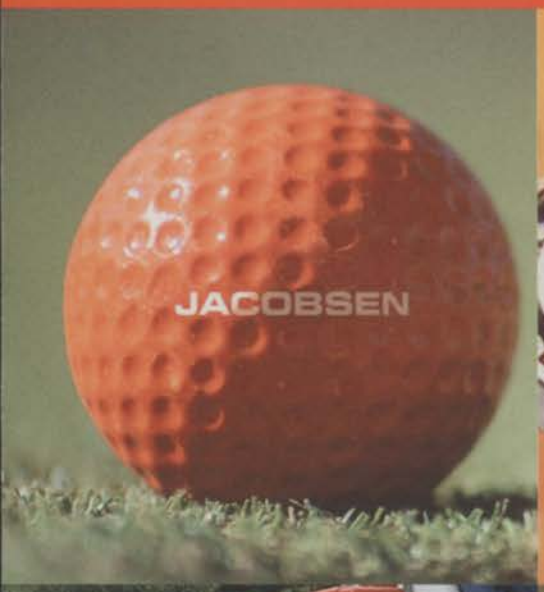

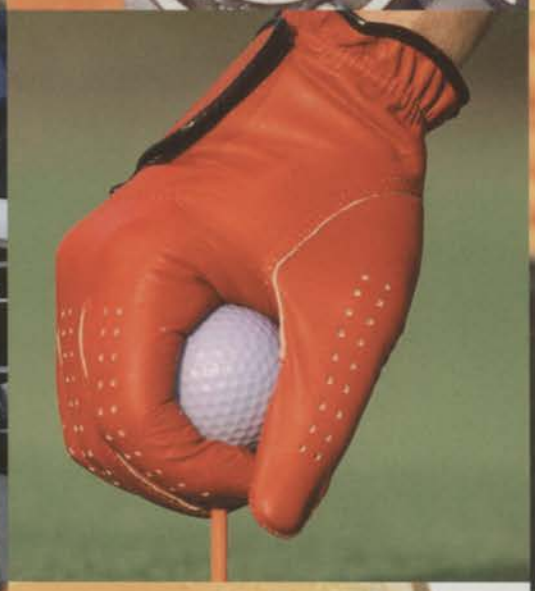

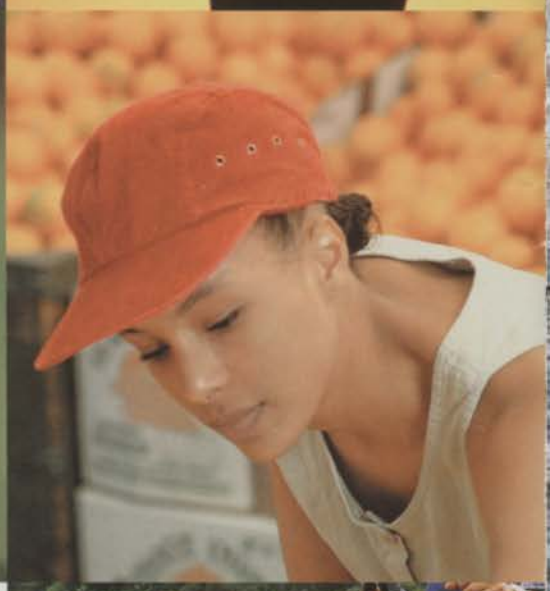

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