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# Turfgrass

MANAGEMENT

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## 19th Australian Turfgrass Conference Edition

*Program and Tradeshow Floorplan*

volume **5.3**

June - July 2003



## Central Control Systems

*Take the Time to Compare*

A photograph of a man in profile, looking at a computer monitor. The monitor displays a software interface for a golf course, showing a map with various colored areas (yellow, green, brown) and a large red number "13" in the center. The background of the photo shows a golf course under a blue sky with clouds. The man's hands are visible on a keyboard and mouse.

*Cirrus<sup>TM</sup>*  
*Nimbus<sup>TM</sup> II*  
*Stratus<sup>TM</sup> II*  
*Stratus<sup>TM</sup> LT*





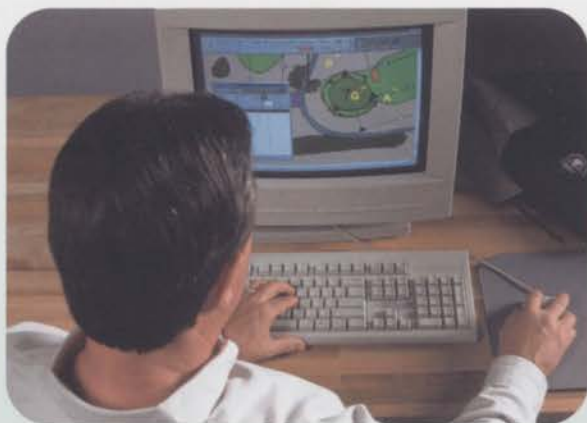
## Take Time to Compare.

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Irrigation has been the only Rain Bird® focus since 1933. Rain Bird was the first to install an irrigation system on a golf course, and the first to develop computerized central control. Sure, there are other central control systems on the market, but none can compare to Rain Bird's innovative features and reliable performance. Here are just two advantages Rain Bird has over the competition. When you take time to compare, you will discover many more.

**1. Real-time, Two-way Communication**—an instantaneous exchange of information between the field and the central control system. Competitive systems download the information first, then relay it back at a later time. What would you rather have—a burglar alarm that alerts you the moment an intruder enters your home, or one that lets you know long after the intruder has left?

**2. Backward Compatibility**—future upgrades to Rain Bird central control systems will be designed to work with today's products. Upgrading competitor systems is often difficult and will cost you more. What would you rather do—easily upgrade your system to take advantage of the most recent innovations, or continually reconfigure your system and pay the price?



## Two programs that bring Rain Bird Central Control within affordable reach.

- Rain Bird Financial Solutions is a financing program that features customized financial solutions for all the parts, equipment and labor costs associated with your irrigation project—including a Rain Bird Central Control System.
- Rain Bird Central Control Subscription™ Service is an affordable and convenient way for you to take full advantage of a Rain Bird Central Control System—without the costly capital expense. You simply decide which software package best meets your needs, pay an initial start-up fee, then make monthly payments for the next three years.

For additional information about these affordable and convenient Rain Bird programs, contact your nearest Rain Bird Distributor, or visit [www.rainbird.com](http://www.rainbird.com).

## Purchase Only What You Need.

---

Currently Rain Bird offers four Central Control System options—

Cirrus™, Nimbus™ II, Stratus™ II and Stratus™ LT. Refer to the chart on the right to compare the features and irrigation management tools each of these systems provides. All too often, superintendents or greens committees purchase a central control system that far exceeds the irrigation management requirements for their golf course. Take a few moments to think about your current course requirements, and the level of irrigation control you believe is necessary to promote the growth of healthy, stress-free turf around your course, while reducing labor, water and energy costs.

## Install Confidence.™ Install Rain Bird.®

---

Trust that when you have identified your current course irrigation management requirements there is a Rain Bird Central Control System that best meets those requirements. And should your course irrigation needs change over time, know that Rain Bird offers the industry's most extensive list of technologically advanced upgrades to keep pace. Many of these modular software upgrades are defined on the back of this brochure, to make it even easier for you to compare the many competitive advantages Rain Bird delivers.

Take the time to compare-then-talk with a participating Rain Bird distributor to learn more about the central control systems that have helped to make Rain Bird the first choice in golf course irrigation.

## Central Control Comparison Chart

Features	Cirrus™ Nimbus™ II	Stratus™ II	Stratus™ LT	
Real-Time 2-Way Communication	Yes	Yes	Yes	Yes
Radio Communication Option	Yes	Yes	Yes	Yes
Works with all RB Satellites	Yes	Yes	Yes	Yes
Works with Decoders	Yes	Yes	Yes	Yes
Works with FREEDOM™ System	Yes	Yes	Yes	Yes
Works with FREEDOM™-Pad	Yes	Yes	Yes	Yes
Number of Wire Paths Standard	4	4	2	1
Number of Wire Paths Maximum	12 w/ Hybrid	12 w/ Hybrid	4++ (in one box)	1
Hybrid	Yes	Optional	Optional	No
Number of Hybrid Boxes	4 (any type)	3 (any type)	2 (mix only)	N/A
Maximum # of 2-Wire Satellite Stations	8064*	8064*	2688++	672
Maximum # of Wireless Satellite Stations	4752*	4752*	2688++	672
Number of Decoders / Solenoids Standard	500 / 1,000	500 / 1,000	500 / 1,000	200 / 400
Maximum # of Decoders / Solenoids - Hybrid	2,000** / 4,000**	2,000** / 4,000**	1,000** / 2,000**	N/A
Number of Active Decoder Solenoids	40/LDI	40/LDI	30 with LDI	15 with SDI
Number of Weather Stations - Max	5	5	1	N/A
Maximum # of Pump Stations	6	6	6	2
<b>PROGRAMMING</b>				
Std / QuickIRR / SimpleIRR	Yes	Yes	Yes	Yes
# of Courses / Sites	3 courses	3 courses	2 courses	1 course
# of Holes	54 holes	54 holes	27 holes	19 holes
Irrigation Programs-active	50 Active	50 Active	20 Active	10 Active
Programs	Unlimited	Unlimited	500	250
Schedules	50 per program	50 per program	25 per program	25 per program
<b>SOFTWARE FEATURES</b>				
FloManager®	Yes	Yes	Yes	Yes
Flo Guard®	Yes	Yes	Yes	Yes
ET-Based Scheduling	Yes	Yes	Yes	Yes
ET Management (fully automatic)	Yes	Optional	Optional	No
ET Spreadsheet Analysis	Yes	Yes	Yes	Yes
Real Time Run Log	Yes	Yes	Yes	Yes
Report Generation	Yes	Yes	Yes	Yes
Custom Report Generation	Yes	Yes	Yes	Yes
Water Budgeting	0-300%	0-300%	0-300%	0-300%
Rain Bucket Accumulated	Yes	Optional	Optional	No
Rain Sensor	Yes	Yes	Yes	Yes
Quick Start	Yes	Yes	Yes	Yes
Help Screens	Yes	Yes	Yes	Yes
Course Monitor	Yes	Yes	Yes	Yes
Hole View	Yes	Yes	Yes	Yes
Projected Flow (Dry Run)	Yes	Yes	Yes	Yes
Graphics - Course View	Yes	Yes	Yes	Yes
Import GPS, CAD or Aerial Photo	Yes	Yes	Yes	Yes
Visual Monitoring - Area	Yes	Yes	Yes	Yes
Visual Monitoring - Station Level	Yes	Optional	Optional	No
Smart Weather™ - Alarms	Yes	Optional	Optional	No
Precipitation Data	Yes	Yes	Yes	Yes
Rotor Data	Yes	Yes	Yes	Yes
Cycle & Soak	Yes	Yes	Yes	Yes
<b>SOFTWARE MODULES</b>				
Weather Software	Standard	Optional	Optional	N/A
Smart Weather™ Software	Standard	Optional	Optional	N/A
Multiple Weather Stations	Standard	Optional	Optional	N/A
Smart Pager/RB Messenger	Standard	Optional	Optional	Optional
Smart Sensors with FloWatch	Standard	Optional	Optional	Optional
Hybrid	Standard (4 Boxes)	Optional (3 Boxes)	Optional (2 Boxes)	No
FREEDOM™ System	Standard	Optional	Optional	Optional
FREEDOM™-Pad	Standard	Optional	Optional	Optional
Map Utilities	Standard	Optional	Optional	No
Station Layers-Map/Operation	Standard	Optional	Optional	No
Smart Pump	Standard	Optional	Optional	Optional
RVDU	Standard	Optional	Optional	Optional

\* Possible with Hybrid and additional TWI or MIM

\*\* Possible with Hybrid and additional LDIs

## Possible with Hybrid and an additional SDI

++ Possible with Wire Path Module



## Software Modules Explanation:

Rain Bird® Central Control Systems feature technologically advanced software modules. To help you better understand and compare the advantages of each module, please refer to these brief explanations.

**Weather Software** – allows central to communicate with Rain Bird weather station, to monitor and receive an updated and calculated ET value for establishing run times.

**Smart Weather™ Software** – allows the same communication as regular Weather Software, but also allows user to set and reprogram the data logger of the weather station to activate alarms based on user-defined conditions for any of the instruments, i.e., rainfall, wind speed, temperature, humidity, etc.

**Multiple Weather Stations** – allows the central to communicate with up to 5 different weather stations throughout the golf course to assign different irrigation stations to these different weather stations.

**Smart Pager** – allows for any alarm messages to activate and send a page message to defined user.

**Smart Sensors** – allows a sensor condition to activate an alarm and turn on/off the system, programs or schedules, or pause/resume the same.

**Hybrid** – allows multiple field interface devices on a central. These could be multiple MIMs, MIM-Links, or MDIs, or a combination of these devices, therefore allowing the possibility of having a decoder system in addition to a satellite system operate from the same central, or any of the other combinations.

**FREEDOM™ System** – module needed to allow the central to operate with the hand held Freedom radios.

**FREEDOM™ -Pad** – allows the hand held Freedom-Pad device to communicate through the Freedom System to the central. User can operate stations, programs or schedules, or change properties of the same.

**Map Utilities** – module that allows for the measuring of distance and area of a map on the central.

**Station Layers – Map/Operation** – allows for Stratus II and Nimbus II to have the same mapping operations of Cirrus, therefore allowing the turning on/off of different map layers, and also the station resolution for monitoring, altering station properties, or programming.

**Smart Pump** – module needed for the communication and interaction between a Rain Bird central and a pump station.

**RVDU** – allows for the communication between the Rain Bird central and the Remote Video Display Unit.

**Additional Wire path** – allows the addition of 1 wire path for a total of 2.



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# contents

## cover

Royal Adelaide Golf Club which plays host to the 2003 AGCSA Golf Championships on Friday, June 27.

## special features

### Assessment of Grassland Cutting Regimes at St David's Golf Club 8

Grasslands are a vital part of any golf course and their management is a major consideration for superintendents. Researchers in the UK have added to the debate on the management of golf course rough by identifying how different management techniques can affect different grassland types.

### Improving the Environmental Management of NSW Golf Courses 14

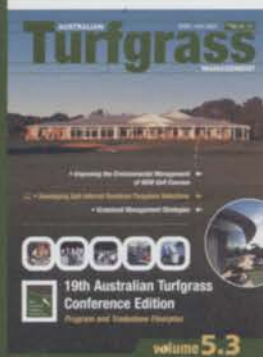
The AGCSA's technical guru John Neylan reviews a series of training workshops dealing with environmental management of NSW golf courses, a joint project conducted by the NSW Environment Protection Authority and the AGCSA.

### 19th Australian Conference and Trade Exhibition, Award Categories, Conference Floorplan and Program 16

### Conference Exhibitor Listings 20

### Turf Trials – Evaluating New Products 38

A huge variety of products are available these days to assist turf managers in the maintenance of their particular turf. But how does the turf manager determine which product is going to provide the best results? John Neylan, as usual, provides all the answers.



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## research

### Initial Selection of Salt-tolerant Seashore Paspalum Ecotypes 30

The development of salt-tolerant turfgrass cultivars is an important long-term management strategy for salt-affected sites. Here University of Georgia researchers outline research into selections of seashore paspalum that are significantly more salt-tolerant than bermudagrass.

## in every edition

Presidents Pen	6
AGCSATech Update	26
STATE REPORTS	44



## And off the first tee...

A big welcome to the 2003 conference edition of Australian Turfgrass Management and what is my first issue as new editor of the turf industry's number one publication.

The winds of change have been blowing through the AGCSA clubhouse in Clayton North recently. Steven Potts began his tenure as new CEO last December and along with my appointment comes Scott Petersen who has been employed as Business Development Manager. Over the course of the next few months Scott and I will be looking at ways of improving and expanding Australian Turfgrass Management, a challenge the both of us are looking forward to. Sarah Fagan, a communications graduate, has also joined the AGCSA as Administration Officer.

But more on that down the line. Right now all industry eyes are focused on the 19th Australian Turfgrass Conference to be held in the City of Churches from June 23-27. INNOVATION, IMAGINATION and COMMUNICATION is the theme for the conference and highlights during the week will no doubt include the trade exhibition, the team building and communication day with Venture Corporate Recharge, and of course the AGCSA Awards and Golf Championships. Can local boy Daryl Sellar collect an unprecedented third consecutive red jacket?

Carrying on from the successful 2002 conference in Brisbane, two streams of education have been included – golf course management and general turf management. Keynote speakers include Dr Mark Zajac (Syngenta Professional Products), Professor Stan Kostka (Aquatrols Corporation of America), Bob Taylor (Senior Ecologist, STRI), Dr Joe Neal (Professor of Weed Science and Extension Specialist, NCSU), and Joellen Zeh (Ecologist, Audubon Cooperative Sanctuary System). Following on from her success in Brisbane, Terri Clementson returns to further add to the "Innovation, Imagination and Communication" emphasis of the week's activities, while Ian Duguid will present a series of keynote sessions and workshops on "Blokes' Business – balancing work, family and leisure". Intriguing!

Lastly, I would like to pay tribute to outgoing ATM editor Phil George. I may not have met my esteemed predecessor but from what I can see Phil has done an exemplary job in establishing the ATM as an industry mainstay. He has set a pretty ominous benchmark and my only hope is that over time ATM will continue to expand and diversify in its role as the turf industry's leading forum for the discussion and dissemination of ideas.

On that note, enjoy what should be a fabulous conference and I look forward to meeting as many of you as I can in Adelaide. Cheers.

Brett Robinson



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# President's Pen

Conference time of year again, and a great opportunity for all turf practitioners to get together and further their education and to network with their peers. Adelaide will, I am sure, be a great host city and I know that for the locals this is a proud moment for them to showcase their "home" town. The conference itself has a slightly different format to previous years and I hope that people enjoy the format and maximise the opportunities that exist to mix education/professional development with the social aspects of this year's event. The early mail on the "Team Building" day makes for some great post-event bragging rights, not to mention the opportunity to see how your peers perform in that "pressure cooker" environment. Don't forget the cab fare.

The AGM of the AGCSA will also be a time for the Board to answer any questions that members have of the organisation as well as the opportunity for the Board to put forward its thoughts on moving forward. The changes to the constitution as proposed are reflective of the need to keep abreast with modern format and to make the whole document more reader friendly. Dave Warwick and Rob McDonald are standing down from office this year and I take this opportunity to thank them for their efforts over the past two years. Also to their respective employers, Avondale Golf Club and Joondalup Resort, and to their wives and families, thank you for your patience and support.

At the end of a current term of office one can be somewhat reflective and look at the past year and the events that have contributed to the relevant success (or failure) of the organisation.



Mark Couchman, AGCSA President

I think that the road forward has been the focus of the past year through events that have occurred during the year. The AGCSA has reviewed its Strategic Plan, employed a new CEO, Business Development Manager and ATM Editor (this edition is Brett's first). All this has given the Association new impetus to strive for better services and relationships within the golf and turf industry and this we are confident will only strengthen the AGCSA's overall position and ultimately be reflective in the services that are provided to everyone. The success of any Association is its members and the AGCSA is no different. The Strategic Plan for the next five years continues in the vision of delivering greater benefits to members and the need for strong membership.

As is customary at this time of year I would like to thank people that help to mould the

Association, to Steven Potts and the entire team at the AGCSA Headquarters, whose commitment is first class and certainly cannot go without recognition. To Tewantin Noosa Golf Club, the committee, management and golf course maintenance crew, thanks for your support and commitment. Lastly to my family a big thanks for just being who you are.

I look forward to seeing many of you in Adelaide and I hope that the conference is all that you expect. Good reading. Enjoy. 🍷

**Mark K Couchman**  
AGCSA President  
Golf Course Superintendent –  
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Well managed rough provides golfing interest and ecological value - Teign Valley Golf Club

## INTRODUCTION

The game of golf is largely based upon "penalty and reward". A well-struck shot is suitably rewarded by a good, clean lie on the fairway, with the more wayward shot being penalised according to the relative distance the ball is "off-line". The grasslands on a golf course provide and satisfy this fundamental requirement primarily through a series of graded grassland zones.

The fairway, averaging 32 metres in width, is generally cut to a height of 11 mm to 18 mm (weed free). The semi-rough of 3-6 metres (both sides of the fairway) is cut between 35 mm and 50 mm and is generally weed free. The carry links the semi-rough and provides separation between the tees and the fairway (Par 3 golf holes may contain only carry). The carry will vary considerably in length and in sward height, density and quality. Whilst many will be managed as semi-rough, others, particularly on calcareous, downland or heathland courses may be managed as deep/ecological rough (see below). These may or may not be maintained as 'weed-free' zones and as such have considerable potential to support wildlife/ecological interest.

The cut rough consists of a 3-6 metre band of cut grassland separating the semi-rough from the deep/ecological rough. This transitional grassland generally receives little management

other than cutting to maintain the sward height between 75 mm and 100 mm.

The ecological or deep rough from an ecological point of view is normally considered to be the most valuable.

These grasslands vary in extent and may or may not receive some form of cutting or other infrequent management. The quality of the grassland, although dependent upon physical and climatic conditions, can be changed or altered with management.

The run of excessively wet periods experienced through the late 1990s into 2000 has led to a general thickening of the grassland rough on many golf courses and this in turn has led to a significant increase in the length of time golfers are taking to play a round of golf. To counteract this problem, golf clubs are contemplating, or are already, reducing the extent of the grassland rough through intensifying management.

Such measures will not only adversely impact upon the wildlife value of the grassland but will from a golfing viewpoint result in a loss of course definition and a general weakening of both playing and visual quality. There is clearly a need to research different management approaches that may allow for a retention of the grassland and, where possible, provide conditions whereby the rough could be increased rather than decreased.

The study, undertaken during 1998 and 2001 as part of a wider Welsh Golfing Union/Royal & Ancient pilot ecological/environmental study of two Welsh golf courses, aimed to assess different management techniques for a range of fixed dune grassland conditions at Royal St. David's Golf Club. Both species composition and structural quality have been assessed under different management techniques.

The resulting species composition is a reflection on the grassland management that has been imposed within the trial plots. Whilst it is not the intention of the trials to replicate traditional agricultural management of grasslands, some parallels should be inferred from the work that has been carried out.

Grasslands on Royal St. David's and most other well established golf courses have in the past, in conjunction with the wider countryside, relied, at least in part, on some form of stock grazing to maintain condition. Cessation of grazing (rabbits are actively discouraged on most golf courses) will promote change which over time will significantly alter the quality of the grassland, i.e. the density, texture and species composition. One aim of this study has been to highlight, in the aftermath of grazing, the potential of physical management techniques in restoring and improving sward conditions both for golf and for their wildlife interest.

*Note: In stating the above, it is recognised that even rank species-poor grasslands may be of significant conservation value for invertebrates, reptiles and small mammals. This fact should be taken into account during management planning.*

It is hoped that the results of this study will add to the debate on the management of golf course rough.

It should be noted that the purpose of this report is not to determine an absolute solution to the question of grassland management but to identify how different management techniques can affect different grassland types. In particular the study only covers coastal and dune grassland and this may not be directly applicable to other types of managed grassland such as limestone, mesotrophic grasslands and/or wet meadows.

## METHODOLOGY

### General

In 1998 four trial areas were established within different locations of grassland rough. The trial areas were selected within grasslands of varying structural and species composition. Within the trial areas five 3 x 3 metre plots were established and managed as follows:



1. Spring Cut + Scarification + Litter Collection (annual)
2. Spring Cut + Scarification + Litter Collection (every 3 years)
3. Late Summer Cut + Litter Collection (annual)
4. Late Summer Cut + Scarification + Litter Collection (annual)
5. Neglected Grassland (control)

### Assessment of the trials concentrated on

- 1) the structural quality of the rough and
- (2) the species composition.

(1) Quality of rough

Two main factors were identified as being significant in the assessment of 'quality' for golfing purposes.

The **density** and the **height** of the vegetation together provide an indication of the extent of cover that is provided by the sward and therefore the potential for ball retrieval.

The two factors are generally dependent upon a number of factors including moisture, soil type, fertility, topography and management. However, the more fertile the soil the more likely the sward will be dense and able to sustain coarse grass species that grow high.

## Quality of sward (density and height)

In an effort to indicate the quality of the rough produced by the different cutting regimes a simple assessment of sward density and height was made. A photograph of each quadrat was taken from a fixed height of 1.5 metres with a golf ball dropped into the centre of the sample area from a fixed 1.5 metre height.

This provided a simple but repeatable visual record of (a) the value of the management technique and (b) how visible a golf ball might be should it end up in the rough.


The table below is an indication of how density and height of vegetation can influence cover and therefore ball visibility. The assessment of cover (visibility of a golf ball within the sward) is further illustrated by the use of a numerical scale. The shaded areas indicate conditions not suitable as rough.

## (2) Species composition

Certain plant species were beyond their best during the assessment. The late timing of the assessment (9 August 01) may have prevented the assessment of some species that had either completed their life cycle or had become

Table indicating how density and height of vegetation can influence cover and therefore ball visibility.

Density/Height	High (3)	Medium (2)	Low (1)
High (3)	Not Visible (9)	Not Visible (6)	Visible (3)
Medium (2)	Not Visible (6)	Just Visible (4)	Clearly Visible (2)
Low (1)	Visible (3)	Clearly Visible (2)	Very Visible (1)



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## ASSESSMENT OF GRASSLAND CUTTING REGIMES AT Royal St. David's Golf Club

ousted by tall and dense vegetation.

In determining the comparative species composition of the plots within the trial areas it is insufficient to simply list presence or absence, even if this would indicate some differences. Consequently, 1 metre quadrats were used to provide an estimate of relative species abundance. Two quadrats were taken per plot making a total of forty quadrats.

### RESULTS

#### Species composition

It is clear that the total number of species per plot recorded is increased with the introduction of some form of management. It is also apparent that areas where the quality of the soil is particularly poor (such as plot 1), the elevated species composition as a response of management is less marked. In areas of improved soil/nutrient status changes are more noticeable and this correlates to a reduction in cover of coarse grasses and, through on-site observations, a marked reduction in surface grass fibre/thatch.

#### Quality of rough

##### Golfing aspects

The value of the rough (density/height) produced by various different management techniques from a golfing perspective is a major consideration. As with the ecological enhancement achieved from different management practices the quality of rough varied in accordance with the soil condition and the management imposed. Although this remains a very subjective assessment, it was possible to determine management techniques that could provide ideal rough in different

circumstances. The density and height of the vegetation varied from low to high depending upon the timing and severity of the management imposed. Therefore, it is not surprising that from low to high the list is:

- Spring Cut + Scarification + Litter Collection (annual)
- Spring Cut + Scarification + Litter Collection (every 3 years)
- Late Summer Cut + Scarification + Litter Collection (annual)
- Late Summer Cut + Litter Collection (annual)
- Neglected Grassland

This suggests that the value of the rough from a golfing perspective is higher towards the bottom end of the list in nutrient-poor, drier soils and towards the top of the list in more nutrient enriched soils.

During monitoring visits to the site in the summer of 2001 the Golf Club Secretary was encouraged to attend and view the trials. His visual (subjective) assessment made purely from a golfing point of view suggested that in plot 1 the late summer cut + litter collection undertaken on an annual basis would form excellent transitional rough, i.e. between the cut rough and the neglected rough. With this in mind, possibilities arise for reducing the width of the fairway/semi-rough to include an extra tier and additional habitat for wildlife. In the second trial it was the late summer cut + scarification undertaken on an annual basis that provided excellent golfing rough. The Secretary's comments were that Yorkshire fog and the more rank grass species were being

kept in check, the base of the turf was relatively thin and it may be that with repeated treatments an increase in the amount of bare ground is being created.

#### Summary

The three year cutting rotation regime on all plots appears (visual assessment only) to be generating additional growth (cf. with control sub-plots). This has been more evident during the second year. The grasses tended to lie flat, compromising the growth of other species. From a visual point of view, this regime looks untidy and is unlikely to be accepted immediately adjacent play. It is, however, forming ideal habitat for small rodents and invertebrates.

Cutting without scarification during the spring or summer period on an annual basis is likely to form good golfing rough and reasonable to good botanical interest. In certain areas (left of 4th for example – plot 2) it may be that infrequent scarification is all that is required to maintain optimum growing conditions. Intensive scarification treatments could in places lead to severe thinning and a marked loss of cover. If undertaken on a more regular basis of perhaps every two years this work in certain areas may, by "thinning" the basal growth, create ideal conditions / opportunities not only for golf but for subordinate plant species, i.e. those normally displaying a weak colonisation potential. From a purely botanical viewpoint, annual scarification in selected areas would be ideal (either spring or summer) in creating bare, open ground conditions and opportunities for dune grassland recolonisation. This, although of considerable

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wildlife and ecological significance, may not be ideal for golf. It could, however, help reinstate or improve areas where coarser, rank grasses are taking over. Thus, a combination of cutting with periodic scarification is likely to be the ideal way forward.

When considering the resources available, including the greenstaff's time and workloads, it may be that creating both spring and summer cut grasslands would be the best way forward (reducing intensity and extent by spreading work throughout the growing season). This, over time, would have additional benefits in increasing the diversity of habitats created.

If any grassland management work is to be successful, then a schematic coloured representation of all grasslands over the course will need to be produced. Colours would highlight the management regimes to be implemented.

If a more acceptable management regime is to be put in place then consideration will need to be given to the purchase or acquisition of machinery. Both grass balers and/or the cutting/vertical scarification and collecting machines such as the Amazone Groundkeeper, Charterhouse or Long Equip machinery would be ideal. A contribution to the acquisition of

such machinery to enable the Golf Club to undertake this work may be possible through CCW and this should be pursued.

#### Conclusion

The variation of management not considered is as significant as the management that has been studied. The timing of the summer cut grassland appears to be very late and suggests that further studies might also focus on the affects of cutting at different periods throughout the growing season to look at how grassland responds to increasingly early cutting regimes. More work is needed to provide more direct comparisons to the three main management variables: time of cutting, use of scarification and the removal of litter.

#### CONCLUSION

The study provides evidence to show how different approaches to grassland management can affect species composition and degree of cover (density of sward). In particular, it suggests that grasslands receiving a summer cut (without aftermath grazing) respond more slowly to change than would be the case under a spring cut. Scarification can accelerate the

speed of change, becoming excessive particularly when included with an annual spring cut. The annually cut summer grasslands are generally not as rich as spring-cut grasslands but the reduction in density may be sufficient to provide excellent golfing rough conditions. Grasslands managed on a three year basis (summer cut) may not differ visually from unmanaged grasslands although, as noted above, significant subtle changes have been recorded. The introduction of management to previously unmanaged grassland tended to reduce the rank nature of the sward whilst increasing the predominance of the finer grass species. This was particularly evident in plot 4.

The study demonstrates that spring cut grasslands reduce in vigour, resulting in a reduction of general biomass and an increase in species diversity. Scarification in creating more open ground conditions appears to increase germination of annual and biannual species such as yellow rattle and sheep's bit and increases basal (deep-rooted) species such as cat's-ear. It also reduces the cover of hardy perennials such as lesser knapweed, devil's bit scabious and coarse grasses such as false oat-grass and hairy oat-grass. In the case of dry



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# ASSESSMENT OF GRASSLAND CUTTING REGIMES AT Royal St. David's Golf Club

sandy soils it appears that scarification may increase cover of deep creeping rhizome species such as sand sedge and creeping soft-grass. In moist soils, scarification appears to provide opportunities for pioneer woody species such as burnet rose to increase in dominance. It is possible that continual cutting will eventually reduce the vigour of this species but since no cutting occurs during the species main growing period the approach is a bit like the annual hard prune of domestic roses.

In many instances the summer cut showed a mid-range transition between unmanaged and summer cut grassland with scarification. Spring cut grasslands appear to have a completely different physical structure to the unmanaged and summer cut plots as well as having a different species composition. As a rule the spring cut plots produced a noticeably shorter sward than other management techniques, although summer scarification also reduces vegetation height to a degree.

The density of the vegetation also differed with spring cut grasslands being of low to medium density and the summer cut grasslands being of medium to high density.

## DISCUSSION

### General

As mentioned at the start of this report, work of this nature adds significantly to our understanding of grassland management both as a means of creating the 'ideal' rough but also as a mechanism for identifying means of enhancing the quality of species-rich grasslands for conservation purposes. Such an approach should not be used to replace more traditional management of grasslands but could be employed in areas where stock cannot be utilised. In these circumstances, greater species diversity within the sward could be achieved by changing the timing of grass cutting. The use of scarification could be used to open up the sward sufficiently to allow the seed bank an opportunity to germinate.

### Ecological aspects

The study suggests that the species composition of the grasslands will respond differently depending upon characteristics of the substrate and that no hard and fast rule can be applied to determine the most appropriate approach in managing grasslands for nature conservation.

For instance, it is possible that spring scarification could increase the risk of docks, ragwort and thistle invading a mesotrophic grassland or allow woody species, as in the case of plot 2, an advantage over other less resilient species. Persistent scarification could lead to a deterioration of the sward in areas where nutrient availability was low, as in the case of plot 1, and might result in problems of erosion in dry, calcareous or sandy soils. Moreover, since the trial areas were all on relatively flat ground it has not been possible to assess the worst case scenarios regarding erosion on sloping ground due to scarification. ■

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## Grassland trial areas - St. David's Golf Club

PLOT 1



PLOT 2



PLOT 3



PLOT 4



- 1 Located near the first tee this plot occurs in an area of dry sandy soil where the variation of cutting found along the edge of the rough produces a high cover of devil's bit scabious and occasional sneezewort. Sward density and height are limited by the dry, nutrient poor conditions. Scarification is particularly useful in allowing biannual species such as *Jasione montana* to become well established. The presence of *Danthonia decumbens* is particularly interesting. The picture shows the sample plots (as defined by the posts in the foreground) as well as the gate way and track that has damaged the summer cut and scarification of sample four.
- 2 Located near the fourth tee this plot occurs on the edge of the coastal dunes in an area of likely to be seasonally wet (although clearly not part of a dune slack). The nature of the soil has prompted dense sward growth including dense stands of burnet rose and outside the sample area the vegetation is dominated by tall coarse grasses.
- 3 Located near the thirteenth tee parallel to an access track. This plot occurs away from the coastal dunes on level but sandy ground. Area has probably been influenced by agricultural practices such as grazing and fertilising in the past. Coarse grasses are generally dominant in the area with banks of *Lotus coniculatus*.
- 4 Located near the fifteenth tee this plot occurs within modified sand dunes. Surrounding land is locally dominated by a mixture of coarse and fine-leaf grasses as well as a mosaic of micro-habitats and plant communities. These different features have developed in response to the topographic variations as well as changes in substrate that occurs within the area. The presence of *Rhinanthus minor* is a significant feature of the plot.



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# Improving the Environmental Management of NSW Golf Courses- A NSW Environment Protection Authority (NSW EPA) and AGCSA Co-operative Project

The turf industry is an industry which was identified by the Urban Stormwater Education Program as one with the potential to impact negatively on urban stormwater. Golf courses are a key sector of the turf industry with approximately 450 golf courses in NSW. If managed well, golf courses can provide many environmental benefits such as stripping urban stormwater of contaminants and nutrients and providing native wildlife corridors in congested urban environments. If managed badly, however, golf courses can be sources of nutrient and chemical run-off causing pollution of waterways and can lead to the degradation of indigenous flora and fauna habitats. A recent notable case on Sydney's North Shore continues to make the news and highlights the vulnerable environment in which we operate and the care that must be taken by all staff in the day to day operation of the golf course.

In 2000 the Australian Golf Course Superintendents Association (AGCSA) indicated a desire to educate its members on improving environmental management practices on golf courses. A project was developed in conjunction with the NSW Environment Protection Authority (NSW EPA) to write an educational reference manual and to conduct a number of training workshops around NSW. The manual and workshops addressed the key environmental issues for golf course management such as water management, pesticides and fertiliser management and other related practices.

The education manual is based on a manual developed by the AGCSA and the Queensland Environmental Protection Agency in 2001. It has been adapted for the NSW context by the NSW EPA with the permission of the Queensland Environmental Protection Agency.

The second part of the education project consisted of four training workshops which were conducted in July 2002 at Camden Lakeside Golf and Country Club, Long Reef Golf Club, Nelson Bay Golf Club and Coffs Harbour Golf Club. The training workshops were conducted by the AGCSA and the NSW EPA, with input from local councils and industry experts. The workshops provided an excellent opportunity to explore local environmental issues within the wider framework of the reference manual, to inspect local examples of best practice and to discuss the issues of how golf clubs can best comply with the various legislative requirements.

Representatives from the AGCSA and NSW EPA visited several golf courses to look at examples of best practice and to gain an insight

into the practical requirements of golf clubs in implementing best management practice such as washdown bays and chemical storage facilities. The golf clubs visited were; Avondale Golf Club, Camden Lakeside Golf and Country Club, Long Reef Golf Club, Nelson Bay Golf Club, Cyprus Lakes Country Club, Wagga Country Club and Wagga Golf Club.

Some of the examples of good environmental management experienced through the visits and workshops included;



Long Reef Golf Club

#### Long Reef Golf Club:

Long Reef GC has taken an interest in conservation and land management with many innovative projects having been undertaken. A number of areas in which Long Reef demonstrates best practice include:

- Wetland rehabilitation
- Wildlife management
- Community education and involvement
- Co-operative work with other government and non-government organisations



Nelson Bay Golf Club - Gynea Lilies

#### Nelson Bay Golf Club:

Nelson Bay GC, during the past 10 years, has actively worked to improve and protect the golf course environment and its surrounds by showing how a golf course can integrate the requirements of golf while preserving and improving the native flora and fauna.

#### Avondale Golf Club:

Avondale GC has undertaken the Audubon Cooperative Sanctuary Program for golf courses where they have;

- Implemented an environmental management plan
- Protected and enhanced special habitats
- Created new wildlife areas
- Expanded IPM programs
- Undertaken a community awareness campaign that has obtained positive publicity

#### Camden Lakeside Golf and Country Club:

Camden Lakeside GCC has a very good working example of a washdown and chemical storage facility and has undertaken some excellent (and relatively low cost) re-vegetation work.

These are just a few examples of what was experienced during the process of putting together the manual and all the golf courses provided practical examples of how turf management and environmental stewardship can work in harmony.

At the workshops there were a total of 170 attendees and there were several key topics presented including;



Avondale Golf Club





Camden Lakeside Golf and Country Club

- Water / irrigation management
- The new pesticide use regulations
- Environmental risk management
- Stormwater and its impact on the environmental
- Local environmental issues
- Inspecting on site points of interest such as wetlands, washdown bays

The manual has taken a considerable period of time to complete and has been through an

exhaustive review by the EPA. However, it has been finally completed and a copy is being sent to every golf club and municipality in NSW. The manual includes sections on;

- Environmentally friendly golf course design
- Water management
- Integrated pest management
- Pesticide management
- Soil management
- Grass species selection
- Environmental issues around the Clubhouse
- Waste management and recycling
- Education

The AGCSA and the EPA hope that golf course superintendents and their staff will be able to implement better environmental management practices on their courses as a result of this information and training project.

#### ACKNOWLEDGEMENTS

This educational reference manual has been produced by the Australian Golf Course Superintendents Association (AGCSA) and the NSW Environment Protection Authority (EPA)

with funding from the NSW Urban Stormwater Education Program. The Urban Stormwater Education Program aims to educate the community, industry, local councils and other stakeholders about ways to reduce urban stormwater pollution. It is a key component of the Urban Stormwater Program and the NSW Government's Waterways Package, which address the issues of water quality management and water pollution.

A project of this type can only be completed with the assistance of numerous people and organisations. The AGCSA and the NSW EPA are grateful to the clubs we visited and the superintendents that spent time with us and shared their knowledge and experiences. We are also grateful to the NSW Golf Course Superintendents Association for their involvement and support throughout the project.

*A special thanks must go to Frouke de Reuver from NSW EPA who was a key contributor to the production of the manual and an enthusiastic participant in the workshops.*



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## 2003 AGCSA AWARD CATEGORIES

### AGCSA DISTINGUISHED SERVICE AWARD



Without a doubt, the premier award to be handed down this year will be the AGCSA Distinguished Service Award.

Bestowed by the AGCSA Board and presented in partnership with Scotts Australia, the award aims to recognise an individual that has made such a contribution to the Australian golf turf industry that they have left a lasting impression.

The 2003 recipient will join an exalted list of former winners including Peter Sawyer, Doug Robinson, Neil Adams, Vince Church, Bill Powell, Peter Martin and the ever-colourful Peter McMaugh.

The award takes into consideration all aspects - the direction and inspiration handed down to generations of golf course superintendents, involvement at state and national levels, education, communication and research.

Just how difficult a decision the AGCSA Board has on their hands was demonstrated last year when Peter Sawyer and Doug Robinson were named as joint winners.

Peter's award recognised his 30 years of service to the turf industry and complemented the Australian Sports Medal he had earlier collected for services to the turf industry. Peter has been heavily involved with both the Victorian association and the AGCSA where he worked hand in hand with state organisations to overcome their differences and develop the AGCSA to how it is recognised in the 21st century.

For Doug, the award acknowledged 35 years involvement in the turf industry and came two years after he received the Australian Sports Medal for services to the turf industry. As well as spending many years as a superintendent, Doug made his mark at both state and national association levels, initially becoming involved with the Queensland association before moving on to the national stage.

During this time he realised that if the national association was going to work in the interest of its members and the industry in general, it had to stand alone and have complete autonomy by having a board elected by the membership. Doug became the inaugural president of the newly incorporated association and served in that position from 1988 to 1994. When he stepped down from that office at the Adelaide conference in 1994,

he had completed 20 years of dedicated service to the superintendent movement.

The vital role of education and communication helped Professor Peter Martin collect the Distinguished Service Award in 2001. Aside from his work as one of the horticulture industry's leading consultants, Peter has played a key role in the postgraduate Turf Management Program at the University of Sydney which is helping to nurture and develop many of Australia's future turf managers.

The Millennium Turfgrass Conference in Melbourne saw turf identity Peter McMaugh take home the spoils. Peter's career in the turf industry began in 1964 as the director of the then Australian Turf Research Institute before branching off to become a farmer and independent consultant. During his career Peter can lay claim to a number of 'world firsts' including the introduction of single strain grasses to the Australian industry and has been involved with major construction projects all across the country.

In 1999, the award went the way of one of the true founders of the Australian turfgrass industry, Western Australian icon Neil Adams. As well as president of the AGCSA for six years, Neil was the inaugural president of the AGCSA, holding the post for two years. In accepting the award, Neil recalled the formative years of the Association where he and Tim Chape had to dip into their own coffers to keep the association afloat.

#### Distinguished Service Award - Recent Winners

1999 - Neil Adams  
2000 - Peter McMaugh  
2001 - Professor Peter Martin  
2002 - Peter Sawyer and Doug Robinson  
2003 - ?

### AGCSA CLAUDE CROCKFORD ENVIRONMENTAL AWARD



The AGCSA Claude Crockford Environmental Award is a prestigious award that was introduced to recognise the golf course superintendent's commitment to safe environmental practices, management, and an overall sense of environmental stewardship.

In past years, award winners have proven themselves worthy of this award by demonstrating initiatives that have been environmentally friendly to the golf clubs and their surrounding areas.

Although the selection criteria for the award is extremely tough, it is pleasing to note that each year we have many highly regarded candidates nominated. To be nominated for the Claude Crockford award, one must demonstrate;

- A commitment to sustainable land management
- Long term planning
- Protection of indigenous plant and animal populations
- Restoration of habitat
- A desire to protect sensitive areas
- Community involvement

#### Claude Crockford Environmental Award - Recent Winners:

1999 - Michael Russell (Werribee Golf Club)  
2000 - Ben Tilley (Beewah Golf Club)  
2001 - Andrew Baker (Sanctuary Cove Golf Club)  
2002 - Jeff Austen (El Caballo Golf Resort)  
2003 - ?

Jeff Austen's success in winning last year's Claude Crockford award was due to his role in helping create a unique golf course environment at El Caballo Golf Resort that uses effluent waste water as an irrigation alternative.

Jeff's environmental plan can be categorised into four areas; stormwater management, re-vegetation, pollution prevention and wildlife. This successful environmental plan has seen a return of wildlife to the area, the introduction of native plant species into the vicinity, and a reduction in water wastage.

The Claude Crockford award is very highly regarded within the golf and turf industries and simply being nominated is a tremendous achievement. This year's nominees are Darren Watson of Horizons Golf Resort and Spiros Skaftouros from the City of Whittlesea. On behalf of the AGCSA we'd like to say good luck guys and what an achievement it is for you both to have made it this far!





## 2003 AGCSA AWARD CATEGORIES

### AGCSA EXCELLENCE IN GOLF COURSE MANAGEMENT



As the name suggests, this award aims to recognise a golf course superintendent for achieving excellence in golf course management.

This award will be bestowed upon a superintendent who has achieved a high standard of golf course presentation/construction within the previous two years. Nominees should note that contributions to the State and/or National Associations are no longer part of the key selection criteria in 2003.

Launched in 2001, this award has taken over the proud tradition of the previous AGCSA Fellowship Award. The name has been refined and selection criteria adjusted to make it more suited to the modern golf course management industry.

Previous winners of this exalted award include Alan Devlin, Pat Pauli, Richard Forsythe, John Geary, Mark Gahan, and last year's recipient Gary Bass from the Croydon Golf Club.

Gary scooped the award for his outstanding work at Croydon where he was appointed golf course manager in 1999. Gary became responsible for not only the maintenance of the Victorian course but for the formulation of a master plan which involved significant course reconstruction.

He oversaw the transition to Santa Ana grass on all fairways, significantly reduced Poa annua in greens, rebuilt a large number of greens and bunkers and overhauled staff structures and work programs. Gary was also responsible for major conservation works as well as involving the club at community level in the form of work experience programs.

#### Excellence in Golf Course Management - Recent Winners

- 1999 - Pat Pauli (Horton Park Golf Club)\*
- 2000 - Allan Devlin (Secret Harbour Golf Course)\*
- 2001 - Mark Gahan (The Dunes Golf Links and Thirteenth Beach Golf Links)
- 2002 - Gary Bass (Croydon Golf Club)
- 2003 - ?

\* then known as the AGCSA Fellowship Award

Winner of the award in 2001 was Mark Gahan who was rewarded for his dual responsibility of maintaining The Dunes Golf Links and managing construction of the impressive Thirteenth Beach Golf Links. In 2000, Scottish-born Allan Devlin collected what was then the Fellowship Award for his work with

the GCSAWA and his role as course superintendent at Secret Harbour Golf Course.

As for 2003, the AGCSA has received four nominees, with Idris Evans from the Western Australian Golf Club nominated twice.

### AGCSA GRADUATE OF THE YEAR AWARD



An outstanding field has again been nominated for the 2003 AGCSA Graduate of the Year Award with eight graduates in the running for what is arguably the most anticipated award during conference week.

Half the contenders in 2003 hail from courses in Victoria, while South Australia can boast two graduates and New South Wales and Western Australia each have one nominee.

This award is special in that it gives an indication of where the future of the industry lies. Today's recipients will be tomorrow's superintendents and will ultimately go on to play a major role in the development and direction of the golf course industry. For the lucky graduate, the award provides a huge fillip, helping to launch their career in the best possible way.

To be eligible for the award, students must have graduated from their studies in the previous 12 months, be under 25-years of age and not hold a management position within a golf turf facility. The judging panel will consider the graduate's academic achievements, career aspirations, ambassadorial skills and how winning the award will assist the graduate in meeting their career aspirations.

The 2003 winner will join a prestigious list of former winners which include Stephen Heskett (1999), Brett Barsby (2000) and Scott Carruthers (2001). Last year's award went the way of Glenn Dawson from the Federal Golf Club in Canberra who staved off the challenges of 10 other fine graduates.

Glenn, like many of the award's recipients before him, was destined for a career in the turf industry. His father was head greenkeeper at the Belconnen Bowling Club in the 1980s before taking up a position as a teacher in turf management at the Canberra Institute of TAFE. His uncle, Shane, is also assistant superintendent at the Gungahlin Lakes Golf Club. In 1998 Glenn secured a position on the groundstaff at Federal under the wily eye of Stephen Lording,

trainer and mentor of two previous AGCSA Graduate of the Year winners.

Attendees at last year's awards ceremony in Brisbane will well remember the inspirational speech delivered by 2001 AGCSA Graduate of the Year winner Scott Carruthers from the Pennant Hills Golf Club.

Just weeks after receiving his award at the Sydney conference, Scott was involved in a serious car accident that left him fighting for his life. His speech, arguably the highlight of the 2002 conference, recalled with much emotion the events of that year and his drive and determination to succeed in his future within the turf industry.

#### Graduate of the Year - Recent Winners

- 1999 - Stephen Heskett (Federal Golf Club)
- 2000 - Brett Barsby (Royal Queensland Golf Club)
- 2001 - Scott Carruthers (Pennant Hills Golf Club)
- 2002 - Glenn Dawson (Federal Golf Club)
- 2003 - ?

### AGCSA AWARD NOMINEES 2003/ ALL CATEGORIES

#### CLAUDE CROCKFORD AWARD

NAME	GOLF CLUB
Darren Watson	Horizons Golf Club
Spiro Skafituros	City of Whittlesea

Chipco

#### EXCELLENCE IN GOLF COURSE MANAGEMENT AWARD

NAME	GOLF CLUB
Idris Evans	Western Australia Golf Club
Jeff Kaines	Royal Adelaide Golf Club
Darren Watson	Horizons Golf Club
Michael Riordan	Patterson River Country Club



JOHN DEERE

#### GRADUATE OF THE YEAR AWARD

NAME	GOLF CLUB
Mathew Goodburn	Newcastle Golf Club
Jason Hounsell	Wodonga Country Club
Craig Birrell	Royal Adelaide Golf Club
Joel Murden	Brighton/Elsternwick Golf Club
Nick Kinley	Wembley Golf Complex
Anthony King	Rosedale Golf Club
Samuel Fraser	Mt Osmond Golf Club
James Dalton	Thirteenth Beach Golf Links Ltd





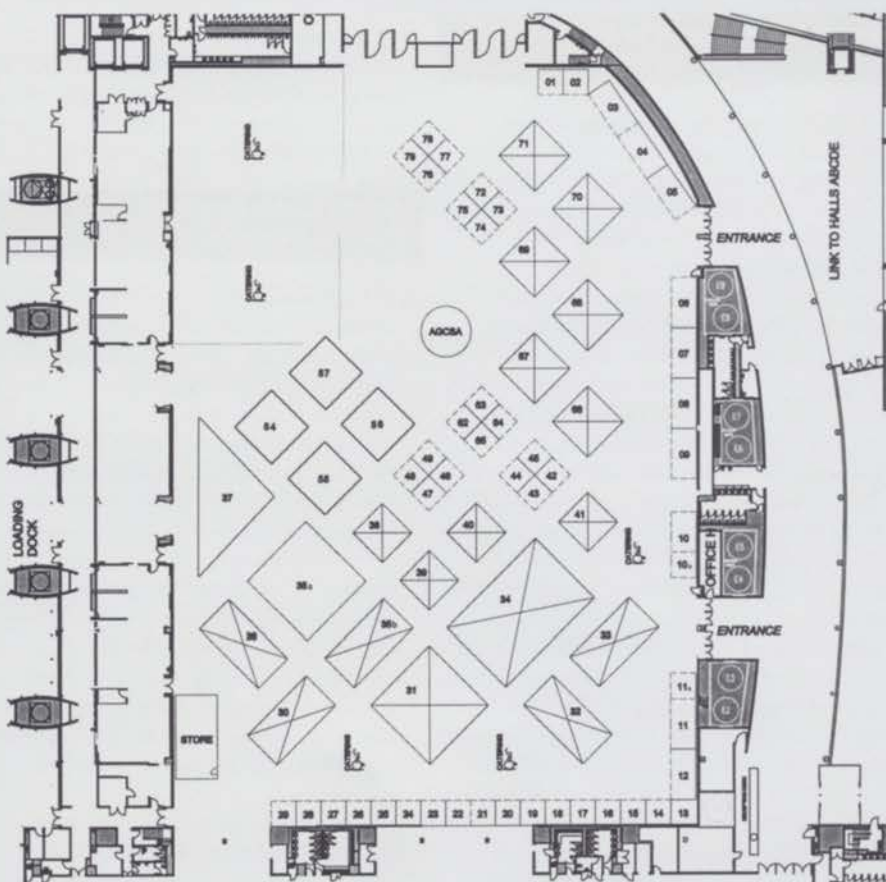
# 19th Australian Turfgrass Trade Exhibition Floor Plan

19th  
Australian  
Turfgrass  
Conference

## TRADE EXHIBITORS

COMPANY	BOOTH #
Wiedenmann GMBH	1 + 2
Turf & Irrigation	4
Rain Bird Australia	5
Brown Brothers Engineering	8
Scotts Australia	6 & 7
Antonio Carraro	9
David Golf & Engineering	10
Mentay	11 & 11a
Belair Turf Management	12
The Groundsman	14
Evergreen Turf	15 & 16
Foley Grinders	19
TurfCraft International	20
Hicks Instant Turf	21 & 22
Tru-Turf Equipment	23
John Deere	31
Country Club International	33
Toro Australia	34
Textron Turfcare Australia	35
AGCSA/TGAA	
Agriculture Holdings	37
Simplot Partners	38
Greencare Industries	39
Dint Greenkeeping	40
Soilutions	42
Kennards Hire	43
Graden Industries	44 + 45
Heritage Seeds	48
Agrichem	49
Nuturf	54 - 57
Golf & Bowling Machinery	62
Irrigation Solutions	63
Water Corp	64 & 65
Club Car	66
Redexim	67
Globe Australia	68
Aspac Golf and Turf	69
Jimboomba Turf Group	70
Bayer	72 + 73
Silvan Australia	75 + 74
Reclaim Industries	76
Jade Chemicals	78
First Intervention	79

## FLOOR PLAN



## Tru-Turf Equipment

### KB11 TURBINE BLOWER

- Nozzle rotates thru 360 degrees
- 10,000 CFM @ 280 kmh (175mph)
- Carryall, trailer, out front, PTO or special built arrangements are available



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LAUNCH!**

### TRIPLEX ROLLER-SPIKER

- To suit JD, Jake & Toro



### RS48-11 GREENS ROLLER

- Need the ultimate greens
- Recommended by the USPGA Tour
- Powerful Eaton 11 transmission
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- Roll & spike in one operation
- Fast, safe & reliable



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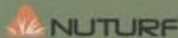
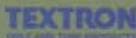
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Major Conference  
Sponsors



## CONFERENCE PROGRAM

### GOLF COURSE MANAGEMENT STREAM

#### → SUNDAY JUNE 22ND 2003

08.00am  
AGCSA Awards Judging -  
Stamford Plaza Hotel

3.00pm  
Registration Desk Opens -  
Foyer Hall H, Adelaide Convention Centre

#### → MONDAY JUNE 23RD 2003

7.30am - 9.00am  
AGCSA Awards and Breakfast -  
Hall E, Adelaide Convention Centre

9.00am - 10.00am  
Partners Coffee and Chat Club Lounge -  
Stamford Plaza Hotel

9.00am - 9.40am  
Blokes Business - Balancing work, family and leisure  
Iain Duguid, Lifegrowth Pty Ltd, Hall B & C, Adelaide  
Convention Centre

9.40am - 11.00am  
The Golfing Experience in 2020 -  
Hall B & C, Adelaide Convention Centre

11.00am - 11.20am  
Morning Tea

11.20am - 1.00pm  
Award Winners Presentations -  
Hall B & C, Adelaide Convention Centre

1.00pm - 1.40pm  
Lunch

1.40pm - 2.00pm  
Turf Industry Survey -  
Hall B & C, Adelaide Convention Centre

2.00pm - 3.00pm  
Plant breeding and the ramifications for turf managers -  
Dr Leah Brilman, Hall B & C, Adelaide Convention Centre

3.00pm - 3.30pm  
Afternoon Tea

3.30pm - 5.00pm  
Staff Operational Management -  
Venture Corporate Recharge, Hall B & C, Adelaide  
Convention Centre

7.00pm - 9.00pm  
Welcoming Cocktail Reception -  
Adelaide Festival Centre, Presented by Chipco

#### → TUESDAY JUNE 24TH 2003

08.00am - 6.00pm  
Team Building Exercise -  
Venture Corporate Recharge

#### → WEDNESDAY JUNE 25TH 2003

08.00am - 9.00am  
Workshop 1A  
Meeting Rooms 1 + 2  
Managing Problem Staff -  
Terri Clementson, Macarthur Management

Workshop 1B  
Meeting Rooms 10 + 11  
Advanced technology for water conservation and  
maximization of irrigation efficiency -  
Stan Kostka, Aquatrols Corporation of America

Workshop 1C  
River Room 3  
AGCSA Research Wrap -  
John Neylan, AGCSATech

9.00am - 1.30pm  
Trade Show Opens - Morning Tea / Lunch

1.30pm - 2.30pm  
Workshop 2A  
Meeting Rooms 1 + 2  
The fate and behaviour of pesticides in turfgrass  
ecosystems - Dr Mark Zajac, Syngenta

Workshop 2B  
Meeting Rooms 10 + 11  
Advances in understanding and managing water repellent  
soils - Stan Kostka, Aquatrols International

Workshop 2C  
Meeting Rooms 4 + 5  
Challenging Staff with Creative Target Setting -  
Terri Clementson, Macarthur Management

2.30pm - 5.00pm  
Trade Show - Afternoon Tea

5.00pm - 6.00pm  
AGCSA Annual General Meeting  
Meeting Rooms 1 + 2  
Adelaide Convention Centre

#### → THURSDAY JUNE 26TH 2003

8.00am - 9.00am  
Workshop 3A  
Meeting Rooms 1 + 2  
Pest Control - A global perspective on product  
development - Dr Mark Zajac, Syngenta

Workshop 3B  
Meeting Rooms 10 + 11  
Habitat Management - Joellen Zeh, Audubon International

Workshop 3C  
River Room 2  
Imagine your life in perfect balance -  
Iain Duguid, Lifegrowth Pty Ltd

9.00am - 11.00am  
Trade Show Morning Tea

11.00am - 12.00pm  
Workshop 4A  
Meeting Rooms 1 + 2  
Thinking Superintendent Session  
Communication Up and Down the Line -  
Daryl Sellat, Norm Ashlin

Workshop 4B  
Meeting Rooms 10 + 11  
Australian Golf Course Design - A minimalist approach -  
Graham Papworth, Society of Golf Course Architects

Workshop 4C  
River Room 2  
Organic Products - What's the hype about?  
Bob Taylor, STRI

12.00pm - 3.00pm  
Trade Show - Lunch / Afternoon Tea

3.00pm - 5.00pm  
Workshop 5A  
Meeting Rooms 1 + 2  
Golf Course Ecology -  
Bob Taylor, STRI

Workshop 5B  
River Room 2  
Water Movement in Plants -  
Andrew Pearl, AGCSATech

Workshop 5C  
Meeting Rooms 10 + 11  
The Golf Course as a model for environmental  
sustainability  
Joellen Zeh, Audubon International

7.00pm - 9.00pm  
Toro Golf Champions Function -  
Adelaide Oval

#### → FRIDAY JUNE 27TH

6.00am  
AGCSA Golf Championships -  
Royal Adelaide Golf Club

AGCSA Corporate Cup -  
The Grange Golf Club

8.00am - 2.00pm  
AGCSA Turf Tour -  
The Grange Golf Club, Kooyonga Golf Club,  
Glenelg Golf Club

7.00pm  
19th Australian Turfgrass Conference Dinner -  
Adelaide Convention Centre

### GENERAL TURF MANAGEMENT STREAM

#### → MONDAY JUNE 23RD 2003

7.00pm - 9.00pm  
Welcoming Cocktail Reception -  
Adelaide Festival Centre

#### → WEDNESDAY 25TH JUNE 2003

8.00am - 9.00am  
Keynote Presentation  
New grass varieties and their performance -  
Dr Leah Brilman, Seed Research Institute

9.00am - 1.30pm  
Trade Show Opens - Morning Tea / Lunch

1.30pm - 2.30pm  
Keynote Presentation  
Biologically based weed management -  
Dr Joe Neal, NCSU

2.30pm - 5.00pm  
Trade Show - Afternoon Tea

#### → THURSDAY 26TH JUNE 2003

8.00am - 9.00am  
Keynote Presentation  
Don't keep us in the dark - turf management for shade -  
Andrew Pearl, AGCSATech

09.00am - 11.00am  
Trade Show Morning Tea

11.00am - 12.00pm  
Keynote Presentation  
Can communication make your male life easier? -  
Iain Duguid, Lifegrowth Pty Ltd

12.00pm - 3.00pm  
Trade Show - Lunch / Afternoon Tea

3.00pm - 5.00pm  
Keynote Presentation  
How to avoid herbicide injury to turf and landscape plots -  
Dr Joe Neal, NCSU

5.00pm  
Summary and Close

NB: Program Subject to change without notice



## AGRICHEM MANUFACTURING INDUSTRIES

Agrichem Manufacturing Industries Pty Ltd is an independently owned and operated Australian company based in Brisbane, Queensland.

Agrichem manufactures and distributes the world's largest range of liquid nutritional and specialty products including NPK clear liquid and suspension fertilisers, soil conditioners, combination trace elements, systemic and protective fungicides and spray adjuvants.

Agrichem's expanding range of products meets an ever-increasing demand for quality liquid fertiliser products throughout the world.

Agrichem's complete turf range of over 25 products will be on display, all formulated to assist the turf manager in meeting today's maintenance requirements. These specialised products allow the superintendent to make precise 'target' applications with greater flexibility to customise the plants nutritional requirements.

Beware of inferior substitutes coming onto the market. Insist on Agrichem.....

Come and visit Ian Perryman and Ken Start at Agrichem's stand number 49 and ask about our extensive range of products to suit your turf maintenance needs.

**Agrichem - Superior Turf Solutions**

## ANTONIO CARRARO

Antonio Carraro Oceania is a subsidiary of the Antonio Carraro factory in Italy, which produces compact, multi-functional 4WD turf tractors that offer a number of benefits over conventional tractors in their field.

Low ground pressure, reversibility, low profile, excellent visibility, safety and shorter working times are all features of Antonio Carraro tractors. Models range in horsepower from 28hp to 83hp and have either mechanical or hydrostatic transmissions and articulated or conventional steering and include the new Rondo out-front mower.

Suitable for use in parks, sporting grounds, golf courses and racetracks, Antonio Carraro tractors have been responsible for maintaining some of Australia's most famous turf, including the MCG, Colonial Stadium, Royal Randwick, Warwick Farm, Sandown and Caulfield racecourses, Royal Sydney Golf Course and even Stadium Australia.

## ASPAC GOLF & TURF

### Lets talk topdressing

The Dakota Turf Tender is Australia's number one ranked (through the AGCSA's own independent evaluations) and most popular topdressing system for golf course dusting and topdressing.

Considering the Turf Tender was released less than 12 months ago, its instantaneous popularity is due to its exceptional performance against all comers for light greens dusting and unrivalled performance for heavy topdressing, fertiliser and organics application.

In fact, where the Dakota has been demonstrated by our clients against any of our opposition, its performance is that stellar we are yet to have any other unit chosen in preference to the Dakota.

Visit our stand to see for yourself its versatility, talk to our may satisfied clients who will be by our booth, and check out both the Turf Tender 410, and two cubic metre Turf Tender 420.

**Also on show will be:**

The Earthquake 150R decompactor, a unit that will

decompact fairways, tees and greens to maximum depth of 250mm (10 inches) no matter how hard the profile.

The Tornado TM360XL debris blower, a unit 60% more air flow than the nearest competitor at 12500CFM and a low decibel level allowing its use in the most built up residential areas.

**New for 2003** The Greenwave 1000, a high precision portable syringing unit for spot chemicals treatments or hand watering and is ideal for applications of wetting agents and prevention of dry patch.

### Better greens for less

Australia now has the ability to obtain the results found in the USA and Europe.

Superintendents using AQUAFLEX are saving up to 40% in water charges!

AQUAFLEX is a highly recommended tool to assist you with your water management. It helps you to optimise your irrigation scheduling to minimise water usage and maintain top quality turf.

Golf courses using AQUAFLEX have reported huge water savings and improvement in quality of their turf.

AQUAFLEX is a unique sensor that continuously records both soil moisture and soil temperature and provides the Superintendent with valuable information about soil conditions in a concise and easy to understand format. Such monitoring has proven to yield substantial water savings. Moreover, it saves energy required to drive pumps.

Optimising water application also minimises leaching of fertilisers and chemicals as well as encourages root growth.

The AQUAFLEX Sensor is a 3 m (10') flexible tape that is laid in the root zone of the turf. Aquaflex has the accurately read in sandy soils.

The AQUAFLEX Logging Sensor, as displayed at the GCSAA Show, has a built in data logger that makes it a completely self-contained unit that is easy to install and simple to operate. Considering the cost savings that are possible, payback time is very short.

The Sensor provides round-the-clock monitoring. Superintendents can choose to install stand-alone units or full multi-sensor systems with telemetry transmission of data back to a central computer.

"Soil moisture is critical on maintaining bentgrass in the Atlanta area during the summer months.... This is a terrific tool to better determine the ideal moisture of the soil to maintain firm, fast, and viable greens" - says Mark Hoban, Certified Superintendent at the Standard Club in Atlanta, Georgia Superintendent of the Year 2002.

AQUAFLEX is already being used successfully in leading European and US sports facilities as well as in agriculture and vineyards around the world.

To receive detailed information about AQUAFLEX  
Aquaflex Australia  
53 Wodonga Street  
Beverley SA 5009  
PH. 08 8244 4798

## BELAIR TURF MANAGEMENT

Belair Turf Management provides the following services;

- Turf Maintenance
- Turf Renovation
- Horticultural Maintenance

- Landscape Development
- Irrigation System Management and Maintenance
- Irrigation System Installation

Our philosophy is to build working partnerships with our clients, be they large or small. In doing so it creates the best climate to help our clients improve the quality of their turf and horticultural areas, whether they are for passive recreation and relaxation or for intensive sports use.

Over the past four years we have been involved with many Local Government and private sporting bodies, providing maintenance and renovation services. Some of the projects we have been involved with include;

- Sports Turf Maintenance contract for the City of Onkaparinga Sports
- Turf Renovation contract for the City of Tea Tree Gully
- Turf and Horticultural maintenance of Santos Stadium
- Awarded the horticultural maintenance and upgrading contract for the Royal Agricultural and Horticultural Society of South Australia
- Preparation of Adelaide soccer training grounds for the 2001 Sydney Olympics
- Yearly major turf renovation of Hindmarsh Soccer Stadium.

Belair Turf Management and its staff have extensive experience in sports ground maintenance, turf renovation, horticultural, landscape development, irrigation installation and system maintenance.

Our full-time staff are all qualified turf trades persons with a wide variety of turf maintenance backgrounds and levels of post trade qualifications. They have the ability to identify problems such as poor irrigation practices, inadequate nutrition, pest and disease infestations. It is company policy to identify, report and act on these problems before major problems become evident.

Company management through the two directors give over 40 years combined experience in sports turf and business management. Our reputation is highly regarded and all business operations are carried out with honesty, integrity and to the highest quality.

Belair Turf Management Pty Ltd is committed to the effective management of occupational health and safety issues. It is company policy to provide safe and efficient systems of work practice and a healthy and safe working environment for our employees.

## CHIPCO

Still committed to the long term future of the Australian turf industry.

For eight years Chipco has been the leading turf protection company in Australia. Now, as a specialty business unit of Bayer Environmental Science, Chipco continues the tradition of developing and marketing groundbreaking products for Australia's turf managers.

We have an unprecedented and ever increasing range of products including Australia's number one turf insecticide, Chipco Merit and an exciting new herbicide called Chipco Spearhead.

Our aim is to continuously support the turf industry through extensive research and development both in Australia and internationally. We are constantly



looking for potential new products that are ideally suited to the Australian market.

Our development team are always looking at new technologies, which will improve the efficacy of our existing products, and take into consideration new pests and changed climatic conditions. Your support of Chipco will enable the continued investment in turf research both locally and internationally.

Chipco delivers innovative and affordable integrated turf management strategies and tools that perform effectively, efficiently and in an environmentally sustainable way. Those involved in turf management, know that taking shortcuts is not sustainable in the longer term.

Chipco sees the sustainability of the industry as an essential element - this is why we continue to sponsor the AGCSA Claude Crockford Environmental Award.

This award is designed to enhance the reputation of turf managers as responsible caring custodians of the natural environment. We look forward to congratulating the 2003 winner of this prestigious award.

So, for a chat to Chipco's experienced team of Regional Sales Managers visit us in Adelaide on stand No's 72-73. We look forward to seeing you there.

## CLUB CAR PTY LTD

Club Car will be displaying their most popular two Utility Vehicles as well as the very intelligent IQ Model Electric Club Car.

The Turf 2 Gasoline (Electric model also available) Utility vehicle is proven to be the most reliable and useful Utility vehicle on the market. All course maintenance transport applications are easily catered for with this vehicle. X Large alloy rear tray carries all loads, and the standard headlights, fuel gauge, hour metre, tow hitch, diff guard and 11hp engine make up a smart reliable package.

The Turf 272 is the Big Brother of the pack. Designed for rugged terrain, and many farm applications, this high clearance, go anywhere, 'grunty' Utility has all the features.

The Electric IQ model Club Car is the most advanced Electric Car on the market. Located in almost all the top resort fleets throughout Australia, this Club Car includes an onboard computer, programmable speed controller, and regenerative motor braking. Renowned for having the longest battery life, the IQ has set sales records since its launch in August 2001.

## CROWN III

### Recycled Rubber Top-Dressing

Welcome to Crown III, a product that not only helps the environment but will benefit your lawn or turfed area, be it commercial or domestic.

Already taking Australia by storm, Crown III has been proven on leading sports venues, golf courses, education facilities and clubs worldwide. Read on to see how easy Crown III will change the way you manage your turf.

- Reduces turf grass wear
- Lessens reseeding costs
- Provides warmth for more rapid growth
- Conserves water
- Reduces soil compaction

Any one of the above qualities will vastly improve the aesthetic and practical qualities of your turfed area. Over two years of extensive research in Western Australia's turf industry Crown III has proven to utilise most, if not all of the above qualities in its applications.

Crown III is protected by a world-wide patent of which Reclaim Industries holds the rights in the South-East Asia Pacific region. This form of Top-Dressing has been used extensively around the world for some years and has only recently been marketed in Australia with staggering results. Some local and international venues you may recognise are as follows;

St Andrews GC (Scotland)  
Lake Karrinyup GC  
Cardiff Arms Park (Wales)  
Metropolitan GC Melbourne  
Pebbles Beach GC (California)  
Stadium Australia  
Joondalup Country Club  
WACA Ground

These are just a few venues throughout Australia and the world that are successfully using Crown III in their Turf Management Toolkit.

Crown III is proudly manufactured by Reclaim Industries out of 100% Recycled Australian Tyre Rubber.  
For More Information Please Call 1800 685 454

## FIRST INTERVENTION

First Intervention is a first aid training and pre-hospital care consultancy company that will be showcasing the latest in Semi Automatic External Defibrillator technology. This technology is used to save lives in the case of sudden cardiac arrest. The defibrillators are small portable devices that monitor the heartbeat through pads that are applied to the chest. The defibrillator determines if a shock is needed, and if so, a pulse of electricity is delivered to the patient via chest pads. Come and see how easy this equipment is to use and how your course can implement a defibrillation programme that can help save lives on course.

Additionally, First Intervention will be providing information about first aid and medical teams at public and private events. We provide multi-disciplinary health care teams that deliver professional and effective pre-hospital care on behalf of our clients.

First Intervention - A simple precaution, a valuable presence.

## FOLEY UNITED

Foley United, the world leader in Reel Grinding Equipment since 1934, brings you the fastest and easiest to use grinders in the world. Coupled with our complete range of premium 'cutting edge' accessories, Foley United brings you the most economical solutions for all your grinding needs.

Visit our booth to see the New Accu-Sharp Spin Relief Grinder. Designed for optimum operator safety and ease of use, this machine is the best combination of features and economy. This grinder is easy to set-up, simple to operate and is capable of reproducing the specifications that all the cutting head manufacturers advocate. Several other products will be on display including, Bedknife Grinders, Gauges, Bedknife Facing Tools and Backlappers.

Toro Australia Pty Ltd are proud to be the Australian distributor of Foley United Grinders and Accessories. Contact Toro on 1800 356 372 for further information on the Foley United range of products.

## GOLF AND BOWLING MACHINERY

Golf and bowling machinery, Industrial mowers, Turf engineering, and Manufacturing, we sell the machinery on display.

We sell a large range of new, second hand and reconditioned machinery, we stock a huge range of spare parts and do service work in Victoria. In our display we will have;

- Series II Thatchaway Head
- New release smooth cut petrol pedestrian mower
- 24" and 30" pedestrian walk behind groomer
- 3ft smooth roll golf green roller
- 500 cutter
- Scott Bonnar 30" Electric Queen Mower
- Scott Bonnar Scarifier
- Backlapper and spare parts accessories

For further enquiries or pre-orders, phone or visit our representatives.

Bowling Rep- Richard Lowman on 0417 415 336  
Golf Rep- George Lambeski on 0419 900 362  
Industrial Mowers- Craig Browning  
Or call (03) 9743 2400

## GRADEN INDUSTRIES PTY LTD

The GRADEN ranges of verticutters are known all over the world for their strength, speed, simplicity and quality of cut. Courses such as St Andrews and Bethpage Black (US Open 2002) are just some of the prestigious clients that have recognised Graden's superior qualities by purchasing our equipment for their fleets.

On display will be the G504 Verticutter, a self-propelled walk-behind unit excellent for de-thatching and aerating golf greens and tees, bowling greens, playing fields and tennis courts, in fact any turf area in need of rejuvenation. Also on display is the GRADEN Swing-Wing Verticutter, a PTO driven tractor-mounted machine with a 1.5m operating width designed for a large area verticutting. It is ideal for golf fairways with its semi-articulated cutting heads allowing it to contour to the undulations of a fairway rather than skimming over or scalping your valuable turf.

2003 will see the launch of our new Garden Zero Turn Diesel Mower, with 26hp engine and 60" cutting deck. This fast manoeuvrable mower is ideal for cutting cleanly and quickly and is now available with the option of rear or side discharge. In September we will be releasing the Zero Turn Diesel Mower with a 34hp engine, fitted with a 72" rear or side discharge deck.

So visit our stand and see for yourself why GRADEN Verticutters and ride-on mowers are the hottest equipment in the industry today.

## HERITAGE SEEDS

Heritage Seeds is well entrenched in the Australian professional turf seed industry. As a research and development company Heritage Seeds' focus is on breeding and selecting the best turf seed varieties to meet the requirements of the Australian turf manager.

*continued overleaf...*



To help achieve this, Heritage Seeds draw upon its relationships with overseas breeding companies to obtain the best of the world's plant genetics. Heritage Seeds has the largest seed research farm in the Southern Hemisphere, located at Howlong NSW. This is where trial and evaluation work is carried out on a wide range of species. Heritage Seeds do not rely on this alone and has a large involvement in the ANTEP (Australian National Turfgrass Evaluation Program, formerly AUSTEP). Heritage Seeds is a leading seed company in Australia and prides itself on providing quality products to the marketplace. The results in the ANTEP trial further enhance this. PREMIER II and BARLENNIUM ryegrass lead the way, with all our varieties being top performing. I would like to thank you for your support and welcome you to come and speak with me at stand 48. Please contact Matt Merrick 0413 442 811 for further information.

## IRRIGATION SOLUTIONS

Irrigation Solutions specialises in the latest technology for the irrigation industry and is committed to providing quality equipment, including irrigation remote controls suitable for any 24 volt AC irrigation system.

Remotes from Remote Control Technology are an affordable tool for irrigation maintenance, and ideal for easy one person sprinkler maintenance on the golf course. They allow for more efficient use of water due to instant operation of valves, sprinklers and pumps while in the field. Save your service crews valuable time, money and water.

Also on show will be Light Energise Irrigation Technology (LEIT) controllers from DIG Corporation, environmentally friendly controller's from 4 to 28 stations requiring no power. Ideal for where power is unavailable or too expensive to provide.

"KwikRepairs" from Dawn Industries are a new concept in PVC pipe repair and fitting replacement. These are another great product for irrigation maintenance enabling quick, easy and cost effective repairs to pipe work from 20mm to 100mm diameter.

For cable and pipe locating we have the CZ4000 Tracer, an easy to operate with just one button for sensitivity. Also for the irrigation professional is a range of irrigation maintenance tools. Contact Stephen Grose 0427 348 427

## JADE CHEMICALS

Jade Chemicals SA commenced business as a speciality chemical distributor in South Australia in 1994. Jade supply technical support and products to the pest control, amenities turf and Government sector throughout South Australia and the Northern Territory.

With technical sales representatives on the road, help and advice is only a telephone call away. All sales staff are fully AgSafe accredited and offer a package of problem based solutions to best suit your needs.

Jade SA distributes a wide range of chemicals, fertilisers and equipment manufactured by over 80 speciality manufacturers.

A fully stocked showroom and warehouse is located in Regency Park close to Adelaide's transport hub ensuring rapid supply and despatch.

Suppliers of a large range of products to the turf industry including:

- Insecticides
- Fungicides
- Herbicides
- Growth regulators
- Fertiliser
- Rodent control products
- Spray and safety equipment
- Disease and soil (including nutrient) analysis service
- Home garden products

## SHOWROOM

Unit 3/475 South Road (corner Tikalara Street)  
REGENCY PARK S.A 5010  
Telephone: 08 8346 1966  
Facsimile: 08 8346 6036

## MENTAY STEEL FAB CONSTRUCTIONS PTY LTD

The firm Mentay has been actively involved in turf cricket equipment worldwide and especially in Australia to become the largest manufacturer of equipment to assist those preparing cricket wickets in the Southern Hemisphere.

Mentay produce rollers, which are straight out compaction rollers, and associated equipment that compliments all aspects of turf wickets construction.

The winner of many awards for their innovative creations Mentay products cover preparation of the wicket soil, labour saving, and the cover machines take the hard work out of handling covers with occupational safety firmly in mind when designing all their equipment. Mentay also make simple sightcreens that are designed to do the job with manoeuvring trolleys to place them in position.

The rollers have progressed from the ever popular walk behind type of roller to the budget designed ride on roller called the Mentay 2000 Unit. This unit has been so successful that in some states and places it's the first priority. There is attention to detail even down to waterproof carpet to the floor area which stops the risk of slipping and sun glare.

The biggest fleet is the Mentay Hydra Ride which has been revamped drastically to give the customer value for money as well as having the capacity for doing lots of wicket strips if that is your requirement.

Mentay have two main water removing machines in the aqua range, one is a walk behind called 'The Aqua Wizz' that is simply brilliant for what it does and how it does it. Then there is big daddy 'The Aqua Wizzard' that will handle the whole oval.

So if you are considering turf wicket equipment you should see Mentay's range. You will be surprised.

## NUTURF PTY LTD

Nuturf is a supplier of specialised services and technology to the Australian turfgrass industry. Nuturf offer a team of turfgrass professionals (located nationwide) to provide customer service, support and on the spot advice.

The sole focus of Nuturf business is turfgrass: establishment; maintenance practices; turf nutrition; turf protection; turf seed; soil surfactants and golf course irrigation. It is our objective to deliver results with ecological sustainability to professional turf managers.

Nuturf has been working with the turf manager for over 35 years.

Contact Details - Free Call: 1800 631 008 Free Fax: 1800 809 456 Website: [www.nuturf.com.au](http://www.nuturf.com.au)

## RAIN BIRD CORPORATION

For the past seven decades, Rain Bird has been a leader in the irrigation industry. From cutting-edge products such as the 'Cirrus' central control system to the development of the wireless rotor, Rain Bird's Golf Division manufactures products that can be found on golf courses around the world.

### *The Intelligent Use of Water*

As the world's largest manufacturer of irrigation products, we believe it is our responsibility to develop technologies that use water efficiently. Over the past seven decades, our pioneering efforts have resulted in more than 130 patents. Rain Bird designs products that use water wisely.

The Golf Division's newest products include the FREEDOM-Pad handheld remote control system, which provides real-time irrigation operation through map-based system compatibility.

Rain Bird also manufactures the EAGLE 1100/1150 rotor, the longest throwing rotor in the industry, and continues development of the wireless rotor.

Rain Bird Pump Stations with Smart Pump flow management software are now available in Australia.

Rain Bird central control components are serviced by a comprehensive Global Service Plan (GSP) and our commitment extends beyond products to education, training and services for industry.

Rain Bird products are sold world wide through an extensive network of distributors.

For additional information, visit [www.rainbird.com](http://www.rainbird.com) or contact your local Rain Bird representative.

## SCOTTS AUSTRALIA

The Scotts Company is the world's leading manufacturer of products for turfgrass and horticultural professionals, offering a wide range of controlled and slow release fertiliser technologies, proprietary turfgrass seed, unique plant protection products and specialised spreading equipment throughout the world.

Scotts Australia welcomes turf managers to our stand and also to the stands of our distribution partners. This year we are encouraging program use of Scotts products with a unique gift for order promotion, as well as launching MaxGuard® 80SC - a new liquid insecticide that promises to be safer, smarter, faster and better than the rest.

With a long history of innovation in turf product technology, Scotts will use this conference to communicate our ongoing commitment to the industry, incorporating an historical theme with an overview of the new Sierra product range, which includes exciting new products.

Note that the 'Superintendent's Touch Football Challenge' has been postponed for Adelaide due to incompatibility with this year's conference program. Instead we are funding a significant promotion that aims to reward the programmed use of Scotts products for spring renovation.

## SILVAN AUSTRALIA PTY LTD

Established in 1962, Silvan has been a pioneer in the development and manufacture of agricultural machinery to provide Australian farmers with an extensive and comprehensive range of "all over the farm" products.



Silvan Australia is the parent company of Silvan Spraying Equipment, Silvan Farm Implements and Selecta.

Silvan Spraying Equipment is a specialist manufacturer with world-leading expertise in crop protection sprayers and related equipment. A leader in the design of high-volume, low-volume and electrostatic sprayers, Silvan has a reputation for producing world class sprayers for viticulture, horticulture, broadacre and vegetable applications, and has grown to become the largest Australasian manufacturer of crop-protection equipment.

Silvan Farm Implements distributes a comprehensive range of cultivators, planters, mulchers, slashers, post hole diggers, grader blades and hay equipment sourced from many of the world's most prominent manufacturers including Nobili, Maschio, Gaspardo, Sitrex and Waratah.

Selecta is the merchandise and componentry division established to service the accessory requirements of primary producers, plant nurseries and the home gardener.

The Selecta range features products such as pumps, hoses, hand sprayers, nozzles and nozzle holders, fittings, filters, fire fighters and 12 volt portable sprayers, and the Jen-ell range including foam markers and misters.

Silvan is proudly Australian owned, with its head office on a 2.5 hectare site in the Melbourne suburb of Wantirna South.

Today, Silvan products are used in every crop type throughout the Australian continent and exported to countries such as Japan, New Zealand, Papua New Guinea, the Philippines, Thailand and New Caledonia.

## TEXTRON TURFCARE GROUP

Textron Turfcare will once again be a major exhibitor at this year's conference. Key products on display include the highly productive Jacobsen LF4677 Gang Fairway Mower, which is powered by a 33kw Kubota

Diesel, has 4WD features, one touch joystick reel controls and delivers 3.93m WOC.

ROPS or SUN Canopy are STD - The Jacobsen AR250 is a multi-deck fine-cut rotary, that has a choice of mulching or side discharge decks that are fully floating to follow ground contours and it is height adjustable from 19m -132m.

A full width rear roller ensures tournament quality finish every time, whilst Parallel series 4WD provides superior traction.

Greens, tees, surrounds, fairways, roughs, bunkers, renovation, top dressing and transport - You name it and we have the equipment!

You need to do what you want backed by our National Dealer Network who is designed to provide you with first class service and support.

## TURFCRAFT INTERNATIONAL

TurfCraft International has been providing the turf industry with timely, relevant information since 1987. Regular columnists to TurfCraft...

Peter McMaugh

David Nickson

Jon Scott (US PGA Tour Director of Agronomy)

Rod Riley

Every issue of TurfCraft includes articles relevant to all aspects of turf care and maintenance with industry experts addressing subjects including soils and nutrition, machinery, pests, weeds and diseases, construction and irrigation and water management.

The magazine also strongly supports turf organisations such as the AGCSA, as well as state organisations like the Turf Grass Association of Australia network (including the Turf Grass Association of South Australia), Gold Coast Ground Staff Association, state bowls associations and the recently formed Turf Producers Australia. Each issue of TurfCraft provides a free space to any turf organisation to present information for their members.

On the stand this year will be magazine editor since 1997, Alastair Dowie and advertising manager, Ed Kryskow. They would be happy to talk to any delegates about the magazine and the turf industry in general. So if you have any ideas about subjects or stories you would like to see in the magazine, call in and see Alastair and Ed on stand 20.

## TURFGRASS ASSOCIATION OF AUSTRALIA

The Turfgrass Association of Australia is a non-profit industry body that represents turf practitioners, curators, ground managers, superintendents and groundsmen. Our membership is also made up of industry representatives from soil, seed, instant turf and machinery suppliers. In addition we have a very close relationship with the Victorian Cricket Association, Melbourne University and TAFE Colleges which offer education in horticultural studies. Our main objective is to offer quality personal development and educational seminars that will assist our members in keeping abreast of new developments within this specialised field, and maintain awareness of industry standards and safety guidelines. Now in our fourteenth year we feel that our association is meeting its aims and objectives and through our quarterly newsletter and various publications, keeping our members informed and up to date. We look forward to greeting anyone at our stand during the 19th Australian Turfgrass Conference. We are a member-driven association, therefore committee persons will be on hand to chat and take any suggestions on how we can improve our services to our entire membership.



## LASTEC MOWERS - NEW & IMPROVED. STILL AVAILABLE TO SUIT OUT FRONT'S



Articulator 621ER



Articulator 3682 Diesel



Articulator 721XR

- Minimum 30hp PTO at 540 rpm
- 3 x 42 inch deck system
- 320cm cutting width / 8.91 acres p/h cutting area
- 1,232 pounds (554kg)

- Kubota 4-cylinder 36hp, water cooled diesel
- Supreme trimming ability
- Hydrostatic pump drive system
- 208cm cutting width / 5.8 acres p/h cutting area

- Minimum 35hp PTO at 540 rpm
- Multiple cutting decks - for extreme undulations
- No turf scalping
- 335cm cutting width / 9.33 acres p/h

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# Enviromist Turf Products

**For effective, efficient, controlled spraying.**

**You just can't beat Enviromist Sprayers because they're simply better sprayers and there's one that perfectly suits your needs.**

**The Spraydome 5000** *Turf managers can now carry out almost all spraying tasks with one machine.*



With its 5.25 metre spray width and its versatility and performance the 5000 sets the standards for foliar chemical application in a wide variety of turf applications.

The rugged and lightweight 5000 features low volume Controlled Droplet Application (CDA), and high volume, conventional, pressure jet spraying. It's all-round, ground-hugging protective skirt virtually eliminates wind drift and that means greater comfort and safety for members and ground staff.

Another advantage is the low application rate required, and the very low chemical-to-water mix ratio that is needed to give optimum results.

Other features include: Independent CDA head monitoring; Contour following articulated sections with external wheel design; Red Ball Flow Indicators; Ease of maintenance and spray system cleaning.

Options include: Foam marker kit; Spray rate controller; Hydraulic lifting ram kit.

**The Spraydome 2250** *Specifically designed for turf layouts that do not require the size of the 5000.*



This 2250 has a fixed 2.25 metre span with no contour-following wings, but it is a big performer that offers real efficiency and economy.

It features 3 CDA spray heads with independent monitoring, and 8 high pressure nozzles with Red Ball Flow Indicators. It also offers Enviromist's fully shrouded design that virtually eliminates spray drift, and exterior wheel location for uninterrupted spray pattern.

The Spraydome can be used behind tractors and most ATV's, and delivers all the Enviromist advantages for an outlay that puts it well within reach of turf managers with smaller areas that need a dual spray system.

**The Spraydome Turf Pro** *A variable width CDA only sprayer that can't be beaten for effectiveness, and versatility.*

The Turf Pro is ideal for use in rough areas, for spraying around trees, or spraying large open turf areas. It is adjustable in widths up to 4.6 metres and uses 1.2 metre outriggers that can be added separately or in tandem. The terrain-following outriggers give optimum coverage around raised and rough areas, and Enviromist's spray drift reducing shrouded design and proven breakaway system protect valuable trees and young plants from physical and chemical damage.

The Turf pro delivers all the cost advantages of CDA technology and Enviromist's patented and proven designs.





# The Spraydome GT2300 *Allows you to spray small and sensitive turf areas with precision and safety!*

The shrouded design virtually eliminates spray drift of chemicals to off-target areas thus allowing you to spray sensitive areas with safety. The GT 2300 is a self-contained, lightweight, highly maneuverable unit that embodies 7 Teejet spray nozzles for even spray distribution.

All controls are located close to the operator's hands and include an agitate function that assists in keeping the chemicals mixed in the tank. The 80 litre spray tank incorporates a fresh water flushing system for quick and easy cleaning of lines and nozzles. Outer wings easily fold back for transport or storage. Foam marker kit is optional.



## 7 experts give their personal experiences, comments & appraisals.

### **"With the Spraydome 5000 I can safely spray even on windy days"**

**Scott Dowdle, Superintendent,  
Laguna Quays Resort, Queensland.**

"To me the main appeal of the Spraydome 5000 is that I can spray in windy conditions. Being on the coast, with constant ocean breezes, this is most important. It is important, too, that the unit is seen by golfers and patrons to be completely enclosed and that they don't see spray drifting, or suited up staff working on the course," said Scott.

"We have 65 hectares to look after here and so we use the Spraydome 5000 about twice a week. We apply MSMA through the CDA for carpet grass and crowfoot, and through the nozzles we use Rovral Green, Thiram and Bayfidan for fungus, and Chlorpyrifos for armyworm. Our biggest savings are with the CDA where we use 2/3rds the standard rate, saving about 30% on costs; the nozzles we usually apply at normal rates," Scott added.

Prior to their purchase of the 5000 Laguna was using a trail-behind boom sprayer, which severely limited their "spray-days". But now they can spray in most conditions and, according to Scott, that's where the unit more than earns its keep.

### **"I'd recommend its use on any golf course"**

**Stewart Poole, Superintendent,  
Gailes Golf Course, Queensland.**

"I believe it's the best unit on the market for what it does," says Stewart Poole who uses his Spraydome 5000, fitted with both nozzles and CDA, two or three times per week to cover over 20 hectares of greens, surrounds, tees and fairways.

"We were using a rear-mounted sprayer, but the Spraydome 5000's shrouded design means I no longer have drift problems and can use the equipment amongst golfers without any problems, and the lower rate of chemicals I need to put through the CDA means that I'm saving up to 60% on herbicides."

Stewart is using Broadside, MSMA, Iron, and Mancozeb to control broad and flat leaf and a "range of diseases". "We use the herbicides at 35% of manufacturer's recommendation and the remainder at standard rates. We're saving time and money and getting good results," he said.

"Apart from the effectiveness and efficiency of the 5000 the fact that I can use it 8-9 hours per day on average makes it a great cost saver. I'd recommend its use on a golf course to anyone".

### **"We just couldn't get into the rough to spray"**

**Michael Bohnsack, Superintendent,  
Victor Harbor Golf Club.**

"This is a heavily wooded course," continued Michael, "and it was hard to get amongst the trees with the old boom sprayer. Add to that the problem of having a brisk ocean breeze most of the time and I was finding that we were not making any headway against the weeds."

The Turf Pro has changed all that. It's variable width - from 1.2 to 4.6 metres - means that Michael's team can easily get into even the most heavily wooded areas on the 20 or so hectares that he covers; and the shrouded design means that he can spray on days of his choosing without worrying about spray drift.

Michael uses Dicamba and MCPA and Clopyralid to control broadleaf weeds such as wire weed, clover and cape weed.

"We're managing the course much better, the quality of the course is much better, and it's taking us a lot less time to do it. Our really big saving is time," he concluded.

### **"The boss is rapt"**

**Matt Roberts of CityWide,  
Melbourne**

CityWide look after over 400 council ovals using a Spraydome 5000.

### **"This CDA unit does an amazing job"**

**Kym Bloor, Techni Gro, Gold Coast, Qld.**

TechniGro gets sterling service from a Spraydome 2000 fitted with 2 Spraydome 1000 outriggers.

### **"I was a boom spray fan...but I've had a change of heart"**

**Simon Child, Superintendent,  
Mount Coolum Golf Club,  
Queensland.**

And a boom spray fan inherits a Spraydome 2000 with Spraydome 1000 outriggers.

### **"My Spraydome CDA gives me 20 times the punch"**

**Ken Prentagast, Kedda Horticultural, Sanctuary Cove, Queensland.**

Whilst Ken Prentagast says his Spraydome 2000 with two 1000 outriggers is a knockout.

Ring us now for the location of your nearest dealer.

**FREECALL 1800 624 044**

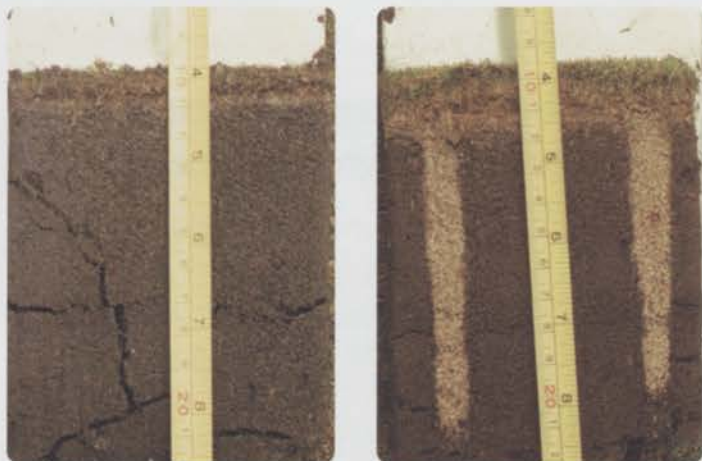
or see us at the Australian Turfgrass Conference in Adelaide.

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## BENTGRASS VARIETY TRIALS



As we come to the end of a long hot and dry summer in the southern states, we have accumulated considerable data from the AGCSA's various bentgrass trials. At the Kingston Heath GC site we have undertaken wear trials to gather data on summer wear tolerance, the Glenelg GC site has provided good information on the effects of dry patch and at Barwon Heads GC the first data has been collected in comparing the response of bentgrass and *Poa annua* when irrigated with either high salinity effluent or potable water.

The wear trials have demonstrated the on-going superior performance of Penn A1, Penn A4 and Penn G2, whereas Pennlinks and Penncross are the worst performers. SR 7200 has at times been very good, however, towards the end of summer it suffered severely from dry patch and thatch collapse disease.

Thatch depth measurements at Kingston Heath GC demonstrated no significant difference between cultivars, however, the newer bentgrass cultivars continue to have a greater tendency to produce excessive thatch. Towards the end of summer, when the trial was placed under moisture stress, the thatchy varieties developed more dry patch.

At the Glenelg GC site, the trial was subjected to moisture stress and there was a significant difference in the susceptibility of the cultivars to develop dry patch. Penn A1 and A4 were amongst the worst affected with Penn G2 amongst the least affected. Again the presence of dry patch appears to be in part related to the depth of thatch and further reinforces the need for a satisfactory thatch control program when introducing the new bentgrass cultivars.

At Barwon Heads GC the first irrigation season was completed and there was no water quality effect on turf quality. This site is constructed on well drained sand and salt accumulation has not been a problem. Any differences in turf quality relate to cultivar differences.

These trials are on-going and in future issues we will present the soils and water data collected from the Barwon Heads GC effluent reuse trials.

These trials are all funded with the assistance of Horticulture Australia. 🌱



**ABOVE LEFT:** Thatch depth / Left - SR7200 / Right - L93

**ABOVE:** Dry patch damage at Glenelg GC

Plot36 - Penn G2  
Plot - 37 Penn A1  
Plot 38 - Dominant



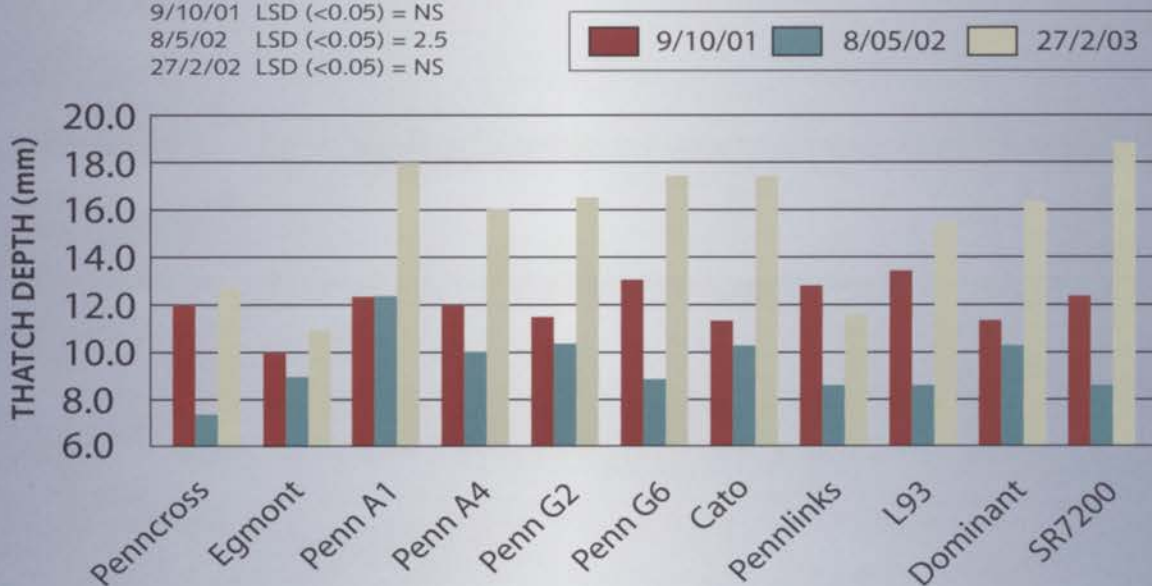
**Horticulture Australia**





### Kingston Heath GC Bentgrass Cultivar Trials - Thatch Depth

9/10/01 LSD (<0.05) = NS  
 8/5/02 LSD (<0.05) = 2.5  
 27/2/02 LSD (<0.05) = NS



Lets Talk

## Topdressing

When it comes to topdressing, nothing is as safe, versatile or effective as Dakotas range of TurfTenders, which can spread, backfill, level, fertilise, dump and apply organics all with a flick of the switch

For more information call now for a copy of your free CD Rom and information pack.

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Dakota 410



- Ranked 1 in AGCSA evaluations.
- Fine greens dusting.
- Heavy topdressing.
- Fertiliser and organics application.
- Will not bridge or clog.

#### Safety First

*All adjustments and options are a flick of the switch, ensuring the operator never leaves his seat*

Dakota 420



- 2 cubic meter capacity.
- Ideal for contractors, sportsgrounds and golf courses.
- Side conveyor & Box scraper (opt).

4CM capacity Dakota 440 also available.





## Kingston Heath GC – Turf Quality during summer wear

VARIETY	13/1/03	17/1/03	20/1/03	23/1/03	4/2/03	7/2/03	AVG
Penncross	5.8	5.8	5.8	6.0	5.7	5.8	5.8
Egmont	6.3	6.3	6.3	5.3	5.5	6.2	6.0
PENN A1	7.8	7.3	7.3	7.3	7.3	7.2	7.4
PENN A4	6.8	7.2	7.2	6.3	6.5	6.7	6.8
PENN G2	7.0	6.8	6.8	6.8	7.0	7.2	6.9
PENN G6	6.7	6.5	6.5	6.8	6.3	6.7	6.6
Cato	7.2	6.5	6.5	6.8	6.5	6.5	6.7
Pennlinks	5.3	5.5	5.5	5.8	5.3	5.5	5.5
L93	7.0	6.7	6.7	6.7	6.3	6.7	6.7
Dominant	6.5	6.0	6.0	6.7	6.2	6.5	6.3
SR7200	7.2	6.8	6.8	6.7	6.8	6.8	6.9
LSD (P<0.05)	1.0	0.9	0.9	NS	0.5	0.9	

0 = worst 9 = best

## Kingston Heath GC – Turf Density during summer wear

VARIETY	13/1/03	17/1/03	20/1/03	23/1/03	4/2/03	7/2/03	AVG
Penncross	6.5	6.2	6.2	6.0	6.2	6.0	6.2
Egmont	7.0	6.7	6.7	6.5	6.3	6.7	6.6
PENN A1	8.2	7.7	7.7	7.7	7.5	7.5	7.7
PENN A4	7.3	7.2	7.2	7.0	6.7	6.8	7.0
PENN G2	7.5	7.0	7.0	7.0	6.7	7.0	7.0
PENN G6	7.0	6.5	6.5	6.7	6.7	6.7	6.7
Cato	7.3	6.8	6.8	6.8	6.8	7.0	6.9
Pennlinks	5.8	5.8	5.8	6.0	5.8	5.7	5.8
L93	7.3	6.8	6.8	6.2	6.3	6.7	6.7
Dominant	6.8	6.3	6.3	7.0	6.5	6.5	6.6
SR7200	8.5	8.0	8.0	8.2	8.0	8.0	8.1
LSD (P<0.05)	0.9	0.7	0.7	0.8	0.9	0.8	

0 = worst 9 = best

## Glenelg GC – Dry patch (% area affected)

VARIETY	1/11/02	1/01/03	1/02/03	1/03/03
Penncross	23.3	21.7	17.3	11.7
Egmont	*	*	*	*
Penn A1	45.3	56.7	50.0	25.0
Penn A4	83.3	78.3	78.3	56.7
Penn G2	6.7	15.0	7.0	1.7
Mix	38.3	35.0	35.0	23.3
Cato	31.7	55.0	51.7	35.7
Pennlinks	23.3	16.7	8.3	3.3
L93	41.7	26.7	23.3	5.0
Dominant	46.7	18.3	10.0	1.7
RA1	50.0	36.7	36.7	10.0
RA2	70.0	36.7	36.7	11.7
Mariner	5.0	12.5	3.0	5.0
LSD (P<0.05)	32.0	28.0	30.0	28.0

Treatment	Turf Quality 4/04/03
PSU poa-EW	6.3
BHGC-EW	ND
Grand Prix-EW	5.7
Mariner-EW	4.8
Penn-G2-EW	6.5
Seaside II-EW	5.2
PSU poa-PW	6.5
BHGC-PW	ND
Grand Prix-PW	5.7
Mariner-PW	5.3
Penn-G2-PW	6.5
Seaside II-PW	5.8
LSD <0.05	0.7

EW = effluent water

PW = potable water

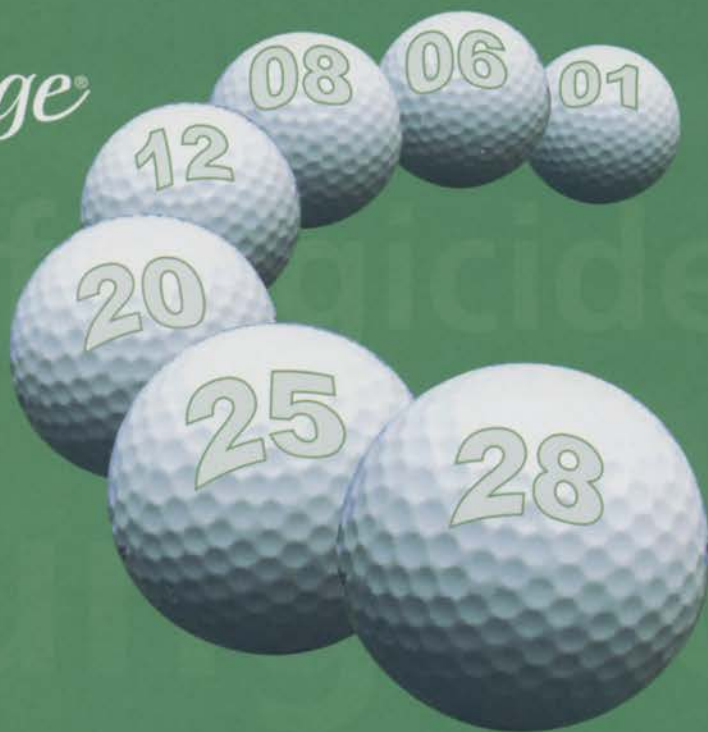
Note:

BHGC had not fully established at the time of assessment.





syngenta



# THE BROADEST SPECTRUM

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# Initial Selection of Salt-tolerant Seashore Paspalum Ecotypes

GEUNGJOO LEE, RONNY DUNCAN,  
ROBERT CARROW



## SUMMARY

- Global water scarcity demands use of alternative water resources, and on turf, this means poor quality water with some level of salt stress (growth reduction, ion toxicity, soil degradation).
- Development of salt-tolerant turfgrass cultivars is an important long-term management strategy for salt-affected sites.
- Ninety-four seashore paspalum ecotypes and four hybrid bermudagrass cultivars were screened in solution/sand culture system.
- Diverse salt tolerance (most tolerant were SI 93-1 and SI 93-3 and least tolerant was Adalayd) was found and bermudagrass cultivars generally exhibited significantly less salt tolerance than seashore paspalum.
- Salt tolerance evaluation for halophytic turfgrasses should include actual growth measurements for shoot, root, and total growth parameters at 0 and  $>35 \text{ dSm}^{-1}$  salinity ranges.
- Site-specific integrated salinity management protocols must be developed in concert with cultivar development programs.

University of Georgia researchers are developing selections of seashore paspalum that are significantly more salt-tolerant than bermudagrass

Global issues of water quality and quantity are becoming increasingly important. In turfgrass areas, good quality and ample water resources have decreased over the last decade due to priority allocation to urban sites and extreme climatic changes (temperature increases, unexpected periodic and prolonged drought seasons).

Use of low quality water is an alternative source and can include drainage water, saline ground water, and recycled water. When seawater is included with these alternative resources, they encompass more than 98% of the total global water supply (5). The use of marginal quality water is directly related to salinity problems from accumulation of total salts or toxic salt ions, which leads to decline of turf growth and eventually soil degradation (1).

One way to alleviate salt stress is to develop

turfgrass cultivars with enhanced salt tolerance. Application of site-specific management protocols on salt-affected areas is also necessary for both short and long-term water conservation strategies. The University of Georgia turf team, where Drs. Ronny Duncan and Robert Carrow are principle researchers, has contributed to development of salt management packages through comprehensive communication such as books (1, 4), articles (2, 3, 5, 6, 8), educational management workshops at various turfgrass conferences, and websites ([www.georgiaturf.com/seashorepaspalum](http://www.georgiaturf.com/seashorepaspalum) and [www.seaisle1.com](http://www.seaisle1.com)). Seashore paspalum ecotypes were evaluated under salt regimes, because fine-textured seashore paspalum (SP; *Paspalum vaginatum*) cultivars exhibit better salinity tolerance than any other warm season turfgrasses (1).

This method has been applied in the evaluation of relative salt tolerance among various crops species (which are almost always Type 1 or Type 2 plants). Most crops have been screened under limited ( $EC_e < 30 \text{ dSm}^{-1}$ ) salinity levels, which is essentially a glycophytic or salt-sensitive plant growth response. This plant group seldom grows well at  $EC_e > 20 \text{ dSm}^{-1}$  (i.e. ocean water  $EC_w = 54 \text{ dSm}^{-1}$ ). Assessment of salinity tolerance for halophytic (salt-tolerant) seashore paspalum turfgrasses (Type 3 in Fig. 1) should be conducted using new criteria (7). From the perennial turfgrass viewpoint, maintenance of high relative growth rates with increasing salinity levels ( $EC_e > 30 \text{ dSm}^{-1}$ ) can provide acceptable recoverability from traffic or other injuries since these plants maintain more shoot photosynthetic area and higher carbohydrate storage.

The objectives of this study were: (a) to evaluate the salinity tolerance of seashore paspalum (SP) ecotypes compared to selected bermudagrasses, and (b) to develop selection criteria for classification of high salinity tolerance among all turfgrasses.

## MATERIALS AND METHODS

Ninety-four seashore paspalum (SP) ecotypes plus four bermudagrass cultivars ('Tifgreen', 'Tifway', 'TifSport', 'TifEagle') were initially evaluated in Griffin, GA in 1997. After each entry was uniformly established as 5cm diameter plugs in 20cm deep cone-shaped pots filled with sand, they were immersed up to the turfgrass crown in a non-saline nutrient solution

## ISSUES ON ASSESSMENT OF SALINITY TOLERANCE

Two essential parameters for evaluation of salt tolerance have traditionally been used: (a) soil threshold electrical conductivity ( $EC_e$ ) (the maximum allowable soil salinity level without yield reduction relative to growth vs. a nonsaline control), and (b) growth reduction (%) per unit salinity increase or the slope of the relative growth curve (9). Based on this concept, Type 2 plants (moderately tolerant glycophyte) exhibit higher salinity tolerance than Type 1 plants (salt-sensitive glycophyte) since a Type 2 plant has a higher threshold  $EC_e$  ( $\text{dSm}^{-1}$ ) and less growth reduction (Fig. 1).



Salt tolerance evaluation for halophytic turfgrasses should include actual growth measurements for shoot, root and total growth parameters at 0 and  $>35 \text{ dSm}^{-1}$  salinity ranges



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## GLOSSARY

$EC_e$  = a measure of soil salinity based on the electrical conductivity of a saturated soil paste extract. This value is used to classify salt-affected soils and to rank salinity tolerance of plants. Units are usually  $dSm^{-1}$  (decisiemens per meter).

$1 dSm^{-1} = 1 mmhos cm^{-1} = 1000 micromhos cm^{-1} = 0.1 Sm^{-1}$

$EC_w$  = Electrical conductivity of irrigation water as a measure of total soluble salts. Seawater is  $54 dSm^{-1}$ .

Threshold  $EC_e$  = The  $EC_e$  at which growth starts to decline in response to increasing salinity. For halophytes, maximum growth occurs at threshold  $EC_e$ . Unit is usually  $dSm^{-1}$ .

Leaf firing (LF) = the percentage of leaves exhibiting visual symptoms of chlorosis or actual tissue desiccation.

for maximum root volume establishment. Salt mixtures were gradually added every day to the solution to achieve selected salinity levels based on electrical conductivity of water ( $EC_w$ ) = 1, 9, 17, 25, 33, and  $41 dSm^{-1}$  and to facilitate the grasses slowly adapting to increasing salinity levels. The nutrient solutions were aerated continuously, changed weekly, and maintained at a constant volume.

Shoot clippings were collected three times every two weeks. Crown (crown plus stem up to 2.5 cm mowing height) and root tissues were also harvested at the end of experiment. The tissues were dried at  $70^\circ C$  for 48 hours and weighed. Those shoot, crown, and root tissues were combined to determine total plant biomass yield.

The proposed criteria to assess salinity tolerance of halophytic seashore paspalums included: (a) absolute shoot, root and total yield (g dry weight) at  $EC_w$  of 1, 25, 33, and  $41 dSm^{-1}$ ; (b) threshold  $EC_w$  ( $dSm^{-1}$ ) for shoot, root, and total yield and the maximum total biomass yield at that salinity level, (c) shoot and root  $EC_w$  25% indicating salinity level for 25% growth reduction compared to the growth at the non-saline  $EC_w$  1, and (d) shoot leaf firing at  $EC_w = 41 dSm^{-1}$ . One approach to evaluate relative salinity tolerance among these grasses was to include all measured traits and to determine the frequency in the top (best) statistical ranking for the parameters exhibiting a significant F-test.

## RESULT AND DISCUSSION

Shoot, root, and total growth responses of five seashore paspalum ecotypes and two bermudagrasses to increasing salinity levels are presented in Tables 1, 2, and 3, respectively. Salinity tolerance responses were very diverse among 98 entries (94 seashore paspalums and four bermudagrasses).

Most shoot, root, and total growth parameters exhibited a significant F-test among 98 grass entries except for threshold  $EC_w$  (Table 1, 2, and 3). Growth responses of salt-tolerant seashore paspalum SI 93-1 showed a yield increase with increasing salinity up to the threshold  $EC_w$  (Fig. 2).

High inherent growth rate (growth at

Grass	SHOOT YIELD (g dry weight)				Threshold $EC_w$	$EC_w$ 25%	Leaf firing at	Times in
	$EC_w$ 1	$EC_w$ 25	$EC_w$ 33	$EC_w$ 41	( $dSm^{-1}$ ) <sup>z</sup>	( $dSm^{-1}$ ) <sup>y</sup>	$EC_w$ 41 (%) <sup>x</sup>	top ranking <sup>s</sup>
SI 93-1	0.71	0.56	0.48	0.30	9 (0.90)	18	9	6/6
SI 93-3	0.43	0.51	0.43	0.30	10 (0.71)	24	8	5/6
Sea Isle 2000	0.61	0.42	0.39	0.26	6 (0.83)	14	8	2/6
Sea Isle 1	0.70	0.45	0.42	0.22	11 (0.80)	17	9	4/6
Tifgreen	0.20	0.21	0.25	0.13	6 (0.33)	12	33	0/6
Tifway	0.11	0.23	0.13	0.09	7 (0.23)	12	36	0/6
Adalayd	0.24	0.11	0.10	0.08	4 (0.26)	8	25	0/6
LSD (.05)	0.25	0.14	0.12	0.08	7	9	7	-
F-test	***	***	***	***	0.39	†	***	-

<sup>z</sup>Threshold  $EC_w$  indicating the maximum allowable salinity level without growth reduction compared to growth at the nonsaline control. The value in parenthesis, therefore, represents the maximum shoot growth in g dry weight.

<sup>y</sup> $EC_w$  25% is the salinity level exhibiting 25 % growth reduction from the growth with  $EC_w$  1 (control).

<sup>x</sup>Leaf firing is the percentage of leaves exhibiting visual symptoms of chlorosis or actual tissue desiccation at  $EC_w$   $41 dSm^{-1}$ .

<sup>s</sup> denotes the numbers of times for an ecotype ranked in the highest (best) statistical category.

\*\*\* and † significant differences among 98 entries at the 0.001 and 0.10 probability levels, respectively.

Table 1. Shoot yield, threshold  $EC_w$ s, leaf firing to threshold  $EC_w$ ,  $EC_w$ 25%, and number of times in the top statistic categories for five seashore paspalums and two bermudagrasses.



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Grass	ROOT YIELD (g dry weight)				Threshold EC <sub>w</sub>	EC <sub>w</sub> 25%	Times in
	EC <sub>w</sub> 1	EC <sub>w</sub> 25	EC <sub>w</sub> 33	EC <sub>w</sub> 41	(dSm <sup>-1</sup> ) <sup>z</sup>	(dSm <sup>-1</sup> ) <sup>y</sup>	top ranking <sup>§</sup>
SI 93-1	0.60	0.37	0.44	0.48	6 (0.67)	32	3/5
SI 93-3	0.40	0.44	0.40	0.39	9 (0.52)	36	4/5
Sea Isle 2000	0.40	0.31	0.50	0.36	7 (0.54)	34	2/5
Sea Isle 1	0.42	0.32	0.42	0.32	4 (0.49)	36	2/5
Tifgreen	0.30	0.26	0.27	0.24	5 (0.36)	38	1/5
Tifway	0.22	0.35	0.29	0.23	10 (0.42)	39	1/5
Adalayd	0.20	0.11	0.13	0.13	5 (0.21)	25	0/5
LSD (.05)	0.15	0.11	0.12	0.11	8	12	-
F-test	***	***	***	***	0.83	***	-

<sup>z</sup>Threshold EC<sub>w</sub> indicating the maximum allowable salinity level without growth reduction compared to growth at nonsaline control.

The value in parenthesis, therefore, represents the maximum shoot growth in g dry weight.

<sup>y</sup>EC<sub>w</sub> 25% is the salinity level exhibiting 25 % growth reduction from the growth with EC<sub>w</sub>1 (control).

<sup>§</sup>denotes the numbers of times for an ecotype ranked in the highest (best) statistical category.

\*\*\* significant differences among 98 entries at the 0.001 probability levels.

Table 2. Root yield, threshold EC<sub>w</sub>s, EC<sub>w</sub>s causing 25% root growth reduction, and number of times in the top statistical category for five seashore paspalums and two bermudagrasses.

Grass	TOTAL YIELD (g dry weight)				Threshold EC <sub>w</sub>	EC <sub>w</sub> 25%	Times in
	EC <sub>w</sub> 1	EC <sub>w</sub> 25	EC <sub>w</sub> 33	EC <sub>w</sub> 41	(dSm <sup>-1</sup> ) <sup>z</sup>	(dSm <sup>-1</sup> ) <sup>y</sup>	top ranking <sup>§</sup>
SI 93-1	2.23	1.69	1.64	1.63	9 (2.52)	35	4/5
SI 93-3	1.44	1.81	1.48	1.42	10 (2.00)	36	3/5
Sea Isle 2000	1.92	1.51	1.64	1.17	7 (2.18)	36	1/5
Sea Isle 1	1.82	1.56	1.75	1.36	6 (2.11)	35	4/5
Tifgreen	1.10	0.89	1.04	0.85	7 (1.29)	29	0/5
Tifway	0.72	1.02	0.84	0.73	9 (1.07)	34	1/5
Adalayd	1.00	0.55	0.54	0.52	4 (1.06)	18	0/5
LSD (.05)	0.54	0.44	0.37	0.32	8	12	-
F-test	***	***	***	***	0.41	***	-

<sup>z</sup>Threshold EC<sub>w</sub> indicating the maximum allowable salinity level without growth reduction compared to growth at nonsaline control.

The value in parenthesis, therefore, represents the maximum shoot growth in g dry weight.

<sup>y</sup>EC<sub>w</sub> 25% is the salinity level exhibiting 25% growth reduction compared to the growth with EC<sub>w</sub>1 (control).

<sup>§</sup>denotes the numbers of times for an ecotype ranked in the highest (best) statistical category.

\*\*\* significant differences among 98 entries at the 0.001 probability levels.

Table 3. Total yield (shoot + root + crown), threshold EC<sub>w</sub>s, EC<sub>w</sub>s causing 25% total yield reduction, and number of times in the top statistical category for five seashore paspalums and two bermudagrasses.

EC<sub>w</sub>1 or no salinity) was an important selection parameter for high salt tolerance capabilities. Among 98 entries, five seashore paspalums remained in the highest EC<sub>w</sub>41 group out of the 16 seashore paspalums in the top statistical ranking of shoot growth at EC<sub>w</sub>1 and four out of nine in root growth (data not shown).

Since enhanced growth occurs at the moderate salinity levels (EC<sub>w</sub>10 to 30 dSm<sup>-1</sup>) in halophytes, growth at EC<sub>w</sub>25 and EC<sub>w</sub>33 was considered. The more salinity tolerant SI 93-1 and SI 93-3 had the highest shoot, root, and total growth across all salinity levels (Tables 1, 2, and 3).

Threshold EC<sub>w</sub> values with nonsignificant F-tests were not included in evaluations of the top statistical categories. However, these maximum potential yield values can be used for determining leaching requirements of saline irrigation water (1, 3). In the study, 25% growth reduction occurred around EC<sub>w</sub>20 dSm<sup>-1</sup>



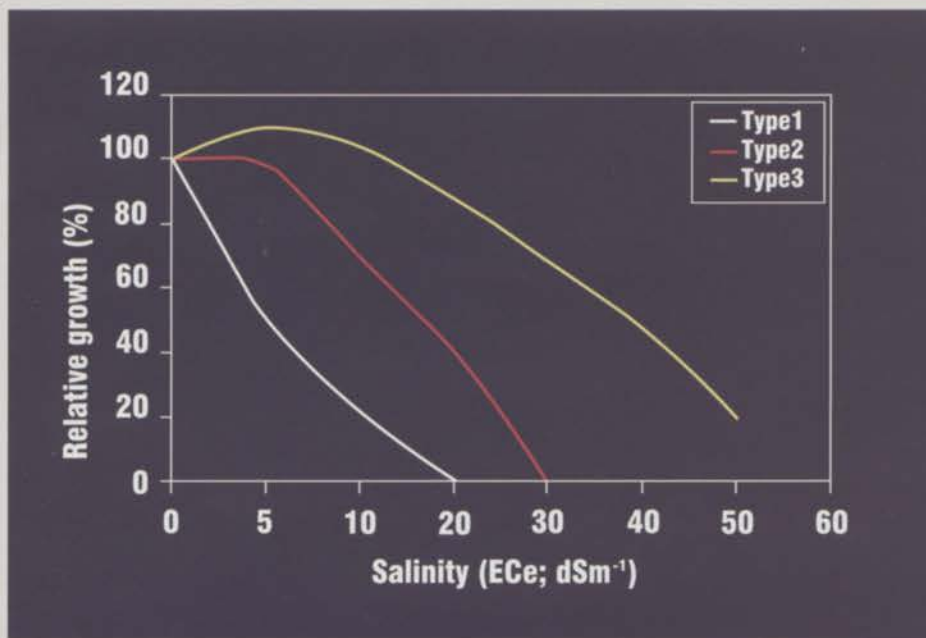


Figure 1. Growth response curves to determine salinity tolerance of agronomic crop plants (Type 1 or Type 2) and salt-tolerant halophytes (Type 3).

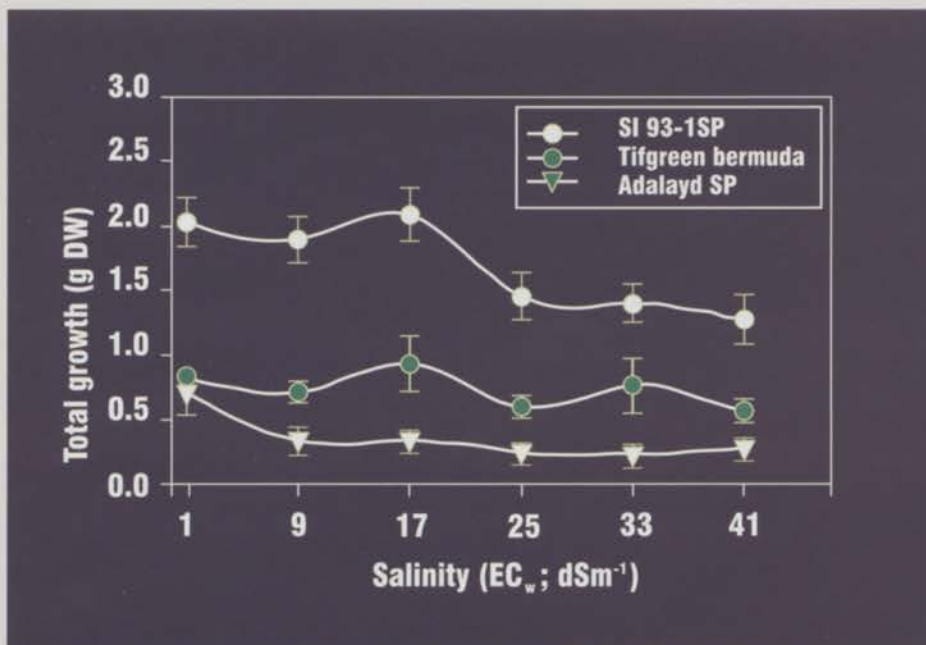


Figure 2. Newer selections of seashore paspalum (e.g., SI 93-1) are more salt tolerant than Tifgreen bermudagrass and Adalayd seashore paspalum (an older cultivar). Bars represent standard errors of the mean (n=6).

for shoot and  $>EC_{w33}$  dSm<sup>-1</sup> for root and total growth (Tables 1, 2, and 3).

The more salinity tolerant SI 93-1 and SI 93-3 seashore paspalums exhibited  $<10\%$  leaf firing at the highest  $EC_{w41}$  dSm<sup>-1</sup>. Leaf firing (leaf chlorosis and necrosis) at  $EC_{w41}$  indicated the tolerant seashore paspalums (SI 93-1, SI 93-3, Sea Isle 2000, Sea Isle 1) maintained shoot density and chlorophyll concentration at 80% of seawater salinity (54 dSm<sup>-1</sup>; Table 1). After assessing yield results from different tissue parts, the most tolerant ecotypes were

SI 93-1 and SI 93-3, followed by Sea Isle 1 and Sea Isle 2000 (within the intermediate group). Adalayd SP and two bermudagrass cultivars (Tifgreen and Tifway) exhibited the lowest salt tolerance. A diverse range of salinity tolerance was exhibited across all 94 seashore paspalum entries.

Evaluation of overall salinity tolerance among turfgrass cultivars revealed that absolute growth at  $EC_{w1}$  (nonsaline condition) and at the highest salinity level ( $EC_{w41}$ ) for shoot, root and total grass parts should be evaluated.

Percentage of leaf injury (leaf firing at  $EC_{w41}$ ) could also provide salinity assessment information. The lowest salinity-tolerant seashore paspalum (i.e., Adalayd) and both bermudagrasses tolerated up to 10 to 15 dSm<sup>-1</sup> and the most tolerant seashore paspalum ecotypes (i.e., SI 93-1, SI 93-2, SI 93-3) exhibited good turf quality and growth at  $>30$  to 35 dSm<sup>-1</sup>. The improved seashore paspalum ecotypes had more salinity tolerance than any of the bermudagrasses (Tifgreen, Tifway, TifEagle, TifSport) (Tables 1, 2, and 3; Fig. 1). The less salinity-tolerant grasses assessed in this study still rank as very tolerant by the traditional evaluation method outlined by Maas and Hofmann (9).

Regardless of salt-tolerance level in turfgrass cultivars, successful long-term management programs must include a comprehensive management strategy to minimise buildup of excess salts in the soil profile. The most fundamental check-points to properly manage grasses subjected to long term salinity stress include soil physical information (fine or coarse type, soil profile), irrigation water quality (chemical and biological), an appropriate leaching program (adequate percolation), and good nutrition management.

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## Editors Note – Seashore Paspalum:

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## LITERATURE CITED

1. Carrow, R.N., and R.R. Duncan. 1998. Salt-affected turfgrass sites: assessment and treatment. Ann Arbor Press, Chelsea, MI. 185p. (TGIF Record 43045)
2. Carrow, R.N., R.R. Duncan, and M. Huck. 1999. Treatment the cause, not the symptoms. Irrigation water treatment for better infiltration. USGA Green Section Record 37(6):11-15. (TGIF Record 62493)
3. Carrow, R.N., M. Huck, and R.R. Duncan. 2000. Leaching for salinity management on turfgrass sites. USGA Green Section Record 38 (6):15-24. (TGIF Record 70760)
4. Duncan, R.R., and R.N. Carrow. 2000. Seashore Paspalum: The Environmental Turfgrass. Ann Arbor Press, Chelsea, MI. 281p. (TGIF Record 64879)
5. Duncan, R.R., R.N. Carrow, and M. Huck. 2000. Effective use of seawater irrigation on turfgrass. USGA Green Section Record 38 (1):11-17. (TGIF Record 63021)
6. Duncan, R.R., R.N. Carrow, and M. Huck. 2000. Understanding water quality and guidelines to management. An overview of challenges for water usage on golf courses for 21st century. USGA Green Section Record 38(5):14-24. (TGIF Record 68198)
7. Lee, G. J. 2000. Comparative salinity tolerance and salt tolerance mechanisms of seashore paspalum ecotypes. PhD Dissertation (Abstract No. AA79994109). The University of Georgia. 264p. (TGIF Record 78711)
8. Lee, G.J., R.R. Duncan, and R.N. Carrow. 2000. Salinity tolerance of *Paspalum vaginatum* and *Cynodon* spp. genotypes. Aust. Turf. Management 2(3):30-32. (TGIF Record 65750)
9. Maas, E.V., and G. J. Hoffman. 1977. Crop salt tolerance-current assessment. J. Irrig. Drainage Div., ASCE 103 (IR2): 115-134.



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# 2003 John Deere Team Championship

The John Deere Team Championship is a golf tournament that has been running in the US for the last 15 years. The event has been running in Australia since 2001, with the events over the last two years being heralded a huge success. The tournament was founded to provide each of the key decision makers within the golf facility an opportunity to get to know each other in an informal environment and gain an insight into the role that they each play at the club.

## Tournament Format

John Deere Golf & Turf dealers host local Team Championship tournaments around the country, with teams playing a modified scramble event. The winning teams from each local event qualify to compete at the Australian Final held at The Glades Golf and Spa, located on Queensland's Gold Coast, with John Deere providing each winning team member with an all expenses paid trip to compete at the National Final. The winning team at the Australian Final then has the opportunity to represent Australia at the World Final of the John Deere Team Championship, held at Grayhawk Country Club in Scottsdale, Arizona, USA.

## Team composition

Each golf facility may submit a team consisting of:

- Course Superintendent (or other member of their maintenance staff who is a member of their local GCSA)
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- Club Manager (or other serving member of management)
- Golf Professional (or other member of their staff with PGA membership)

## When is it on?

Below are the details for each of the local qualifying rounds of the John Deere Team Championship:

Region	Venue	Date
Victoria	Cranbourne Golf Club	19 <sup>th</sup> May 2003
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South Australia	Gawler Golf Club	26 <sup>th</sup> May 2003
Contact Metropolitan Machinery on 8349 5499 for more details		
Newcastle	Nelson Bay Golf Club	12 <sup>th</sup> June 2003
Contact Sharpes Tractor Centre on 4932 5588 for more details		
Sydney	Oatlands Golf Club	8 <sup>th</sup> July 2003
Contact Cess Hill Industries on 4735 4333 for more details		
Western Australia	Royal Fremantle Golf Club	4 <sup>th</sup> August 2003
Contact CJD Equipment on 9277 2011 for more details		
Queensland	Redland Bay Golf Club	19 <sup>th</sup> August 2003
Contact BHM Machinery on 3287 3877 for more details		
Australian Final	The Glades Golf & Spa	3 <sup>rd</sup> - 4 <sup>th</sup> September 2003
World Final	Grayhawk Country Club	12 <sup>th</sup> - 15 <sup>th</sup> November 2003

## What people say about the John Deere Team Championship

"...I believe it was a valuable team building exercise for us as we rarely get a chance to have our club professional, Manager, and Committee people together with the superintendent for an extended period of time in an off the job situation, it allows an insight into the way other people in our organisation think and behave. I also believe it has given the other Team members a much greater appreciation of the role the Superintendent plays in the grand scheme of things happening on any Golf Course. I thought the whole event was run very smoothly and with typical John Deere precision."

Jon Penberthy, Gainsborough Greens, Qld.

"The format of this event fosters a strong team spirit amongst the participants, and it certainly brought closer together the key personnel of our golf club, and on that basis alone, we believe its continuation should be strongly supported. Our group in particular discussed many issues relating to the management of our club during the course of the day."

David Baumgartel, Cottesloe Golf Club, WA



The event promotes positive relationships within the golf club



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Sampling for soil-borne insect pests



Replicated plot design for product assessment

There are many products available to assist turf managers in the maintenance of their particular turf area. There are numerous fertilisers, fungicides, turfgrass varieties etc. available and many come with claims to be better than the opposition product. But how does the turf manager determine whether a particular turf product is useful or applicable in their particular situation? Each situation is different and a clear understanding of the local soils, grass types, climate etc. is important in determining how effective a product will be under those circumstances. The only way that the effectiveness of a particular product can be determined is by having access to independent research results and then following it up with a carefully planned on-site evaluation.

## UNDERSTANDING PRODUCT INFORMATION

If a product is to have any credibility in the market place it must be subjected to rigorous evaluation and compared to similar products. Of the many turf products on the market, pesticides are generally the most rigorously tested in order to meet Government registration requirements. Other products such as fertilisers need only meet certain minimum requirements for their nitrogen content to be registered, while others require no scientific evaluation at all. When presented with any new product, the turf manager must insist on seeing the research data, where it was done and by whom. Research is often done and only selected parts of the data are printed in promotional literature (usually the favourable points). These glossy brochures and advertisements can often contain anecdotal reports or testimonials by well known turf managers from well known turf venues. While these testimonials may well be accurate, they have little or no value unless it is supported by properly conducted research.

A properly conducted research trial should contain the following;

1. Each treatment must be replicated.
2. Any new product must be compared to the industry standard(s).
3. Trial repeated at the same site or several sites.

4. Details of what parameters were assessed
5. Were the assessments made quantitatively (physical measurements) or qualitatively (visual observations).
6. Has the data been statistically analysed.

The best information on product effectiveness is found in the scientific literature, where it has been subjected to peer review. The scientific literature is not always "user friendly", however, researchers often write for popular and trade magazines where the results are reported in a more readily digested format. This source of information is extremely useful in evaluating and sourcing information on new products.

## ANALYSIS OF TRIAL DATA

The only procedure for accurately stating whether one product is better than another is by statistical analysis. Statistics enable us to make statements and draw conclusions of scientific significance from the limited information obtained by the examination of one or more relatively small samples. For example, in testing a new herbicide for dandelion control, an experiment can only treat a limited area and a limited number of dandelions. However, the conclusions need to apply to all occurrences of dandelions. Whatever experiment is undertaken, its purpose is to provide a means of making plausible generalisations about the practice under study. In conducting any



experiment or trials there will always be chance variations that are beyond the researchers control. Weather is one such example of this chance variation.

Many natural phenomena have a natural variation, which are normally distributed (e.g. heights, weights, leaf length etc.). If we classify these observations and plot the frequency with which they occur, the resulting graph is bell shaped and is called a curve of normal distribution (Fig. 1). The high point of the graph represents the most common class with the rare exceptional classes at the two ends. From this curve we can see what is the average (or mean) of the population and the spread of variability of the population. Statistical analysis uses this basic relationship to describe a mass of data in simple terms so that it has meaning.

If we follow this premise of natural variability it can be seen that an experiment with a single plot gives us no idea of the natural variability or where this single observation fits into the normal distribution. So therefore, there is no way to determine the degree of confidence in any conclusions (e.g. if a fungicide is applied and a result is obtained there is no way of knowing whether it is one of the extremes or represents the average). The more replicates there are the more reliable the results. Non-replicated trials are not experiments and can only be considered an observation trial. Conclusions from such trials must be treated with scepticism and only serve to demonstrate or reinforce the application or effectiveness of a new product.

#### INTERPRETATION OF TRIAL DATA

When faced with trial information, depending on how it is presented, it can sometimes be misinterpreted or misleading.

In Table 1 there is an extract of results from couchgrass trials in the USA.

Table 1: Mean winter colour rating of couchgrass cultivars\*

Cultivar	Mean winter colour rating
Tifsport	7.3
Tifway	7.3
CN 2-9	7.0
Princess 77	6.8
SWI-11	6.1
Continental	5.4
Shangri La	5.3
Blue-muda	5.2
OKS 95-1	5.2
Savannah	5.2
LSD (P<0.05)	0.7

\* National Turfgrass Evaluation Program National Bermudagrass Test - 1997 Progress Report 2000

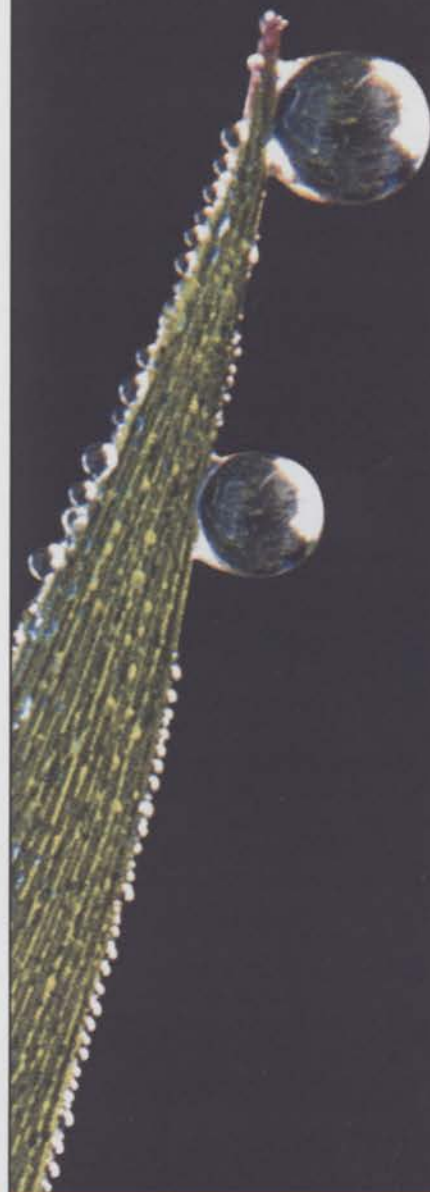
Part of these results have been produced in graphical form (Fig. 2) and on face value the results suggest that the varieties Tifsport and Tifway are of better quality than Princess 77 and SWI-11 is superior to Continental. However, a statistical analysis has been undertaken and the Least Significant Difference (LSD) is given so that varieties can be compared. The LSD is quoted with a probability limit (e.g.  $P < 0.05$ ), which in this case means there is a 95 per cent confidence or probability that the result is due to a difference between the varieties and not due to a chance event. In Table 1, the LSD is quoted and statistical difference is determined by subtracting one treatment mean from another treatment mean and comparing the result to the LSD value. Statistical difference occurs when the difference between the treatment means is greater than the corresponding LSD value. In the above example of comparing Tifsport and Tifway with Princess 77 then;  $7.3 - 6.8 = 0.5$ . The difference is less than the LSD (i.e. 0.7) and therefore there is no significant difference. For this criteria the two varieties can be assumed to be the same. With Princess 77 and SWI-11 the difference is;  $6.8 - 6.1 = 0.7$ . The difference is equal to the LSD, so therefore there is no significant difference between the varieties.

Another important consideration when determining whether a new product will have an impact or not, is establishing the magnitude of the response. Scientists are very good at measuring various parameters with great accuracy under well controlled conditions, however, in the field these responses may not be apparent to the turf manager. Many products such as fertilisers, herbicides and fungicides are highly effective and the results are readily observed. With some other products, claims are made that they "increase root growth", "reduce water use" or "reduce thatch" and it is easy to imagine that a large response may occur, where in fact it could be quite small. The literature contains many studies where a significant result has been achieved but the magnitude may only be a few per cent. Although the result is significant, is a few per cent improvement what the turf manager envisages as a significant result? To determine whether a particular product is going to be suitable for your situation the turf manager may elect to conduct a local trial. In this way the turf manager can observe the ease of using a new product, where it fits into the management program and how substantial the response is.

#### CONDUCTING AN OBSERVATION TRIAL

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# TURF TRIALS – Evaluating New Products

It is important to approach even the simplest of trials in a logical way to ensure that you draw reasonable conclusions.

For example, how should an observation trial be approached to select an appropriate variety for future regrassing of putting or bowling surfaces?

1. Gather together as much of the available research data as possible (including the results of overseas trials, local trials, other users).
2. From the available information, select three or four of the varieties that most interest you.
3. Include your current variety or the industry standard.
4. Select a plot area that typifies the golf course, bowling green etc and avoid sites that have localised effects e.g. poor irrigation, variable soils, excessive shade.
5. Provide a plot area that is relatively large so that it can be subjected to typical mowing and maintenance practices. If possible, the area should be subjected to typical traffic and played on.
6. Determine assessment criteria that are an issue for your area e.g.;

- spiking
- drought tolerance
- resistance to *Poa annua* invasion
- putting or bowling quality
- turf density
- ability to tolerate wear, your mowing heights and pesticides
- renovation requirements

It is important to create a measure for each criteria, (e.g. stimpmeter readings, quality ratings, % weeds,) so that it is easier to determine the extent of the differences.

7. Schedule periods of regular inspection and assess each of your predetermined assessment criteria. Record your observations.

When dealing with fertilisers, fungicides or herbicides it is essential to include the product normally used or the industry standard. It is also important to include an untreated control, particularly when using fungicides and pre-emergence herbicides. The control provides proof that the condition to be controlled actually occurred and that due to chance the condition did not occur. Applying the product

without a comparison may produce a response due to favourable (or unfavourable) weather conditions or other circumstances completely unrelated to the product.

## CONCLUSION

Given the range of new products on the turf market a methodical approach is required to determine whether they offer a better alternative to current practices. Ask for the research data, question how and where the work was done and then decide whether the product has a potential use in your situation. The next step is then to evaluate it yourself, under your management, before a final decision is made. There has been more than one error of judgement made by being influenced by glossy brochures rather than evaluating meaningful, properly conducted scientific trials.

*J Neylan - AGCSATech*

Fig 1

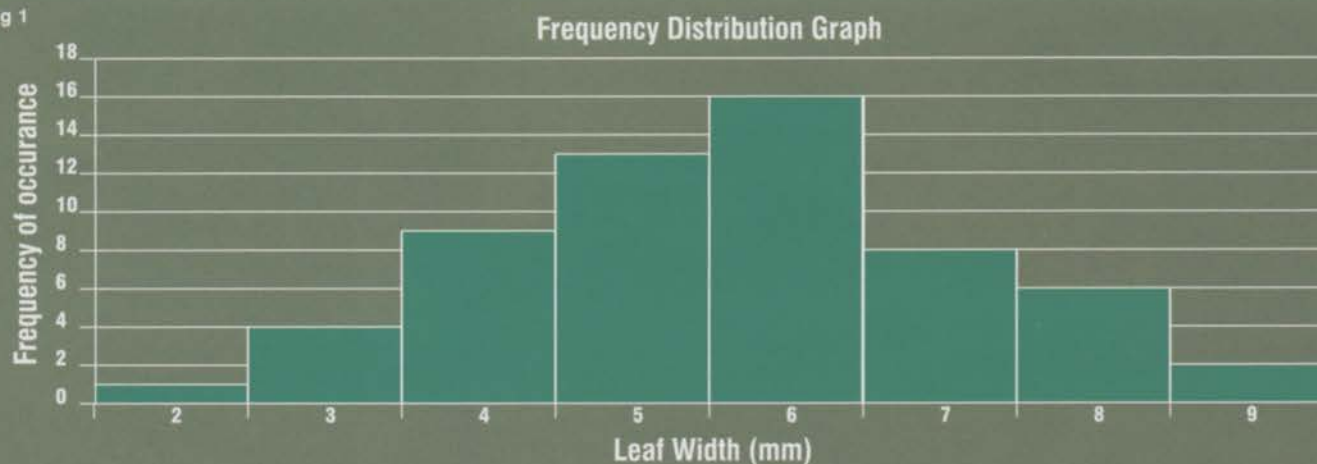


Fig 2







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# International Studies In Turf

PHILLIP FORD

NMIT's (Northern Melbourne Institute of TAFE) Turf Management is involved in its first international venture this year with the delivery of its Diploma of Horticulture (Turf) to students in Hong Kong.

The two-year diploma is being taught to nine students, seven of whom are English-speaking Chinese, with five working for the Hong Kong Golf Club and the two others employed at the Sha Tin Racecourse and the Hong Kong Jockey Club.

The other two students include an Australian expatriate who started the diploma at NMIT last year in Melbourne but left to take up a job with the Hong Kong Golf Club, while another is also an Australian expatriate working at the Hong Kong Cricket Club as grounds manager.

The course is being offered through flexible online delivery where the students can study at their own pace and in their own time, meeting once a week as a group to work through the study units and perform the practical activities.

There are 10 units in the course covering competencies leading to an Australian National Training Package qualification at Diploma level. Studies will include soils and plants, nutrition,

pest and disease and the design of turf irrigation, drainage and construction.

Each unit is a comprehensive module consisting of the academic component with practical exercises to be carried out at the workplace and supervised by an NMIT appointed supervisor.

Assignments are sent back to the NMIT Parkville campus teacher, Phillip Ford, for assessment.

NMIT has been offering the flexible delivery diploma since 1997 with students interstate as well as in regional Victoria.

"This is the first major overseas involvement with our turf Diploma," course coordinator Phillip Ford said. "The catalyst has been these ex-pats over there, who have first-hand knowledge of NMIT and the value of the diploma course we offer."

"The material and style of the course is focused directly on the work of the golf course workplace and is very practical compared to a degree course. Some of the students already have degrees in agriculture and botany, but felt NMIT's course could enhance their knowledge and skills in day-to-day turf agronomy," Phillip added.

Phillip is also planning to visit the students in June/July for a week of workshops to conduct laboratory and field activities and deliver lectures in their study units.

He added that while some aspects of the course would be difficult and different in Hong Kong (eg the grasses as well as the pests and diseases), the soils, drainage and irrigation issues are all exactly the same whether you lived in Hong Kong or Melbourne.

"The course doesn't need a lot of change, but we'll tailor it as best we can to their climatic conditions."

Phillip Ford: NMIT Ph: 9269-8823

Further Information: Pauline Pogorelske NMIT

Media Officer Ph: 9269-1253



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## GCSAQ

Weather has been wet, 193mm on Wednesday night causing havoc on the Gold Coast and shutting the course for a few days. Further inland the rain was lighter; Dave Morrison at Hills Educational Foundation reported just 25mm for the same period. While I am sure the farmers need it inland, I have had enough for a while thanks Huey! My office has been painted, twice, the irrigations main area has been painted, cleaned, re-organised and even the shed windows have been windexed while we keep busy during the wet days.

With the Adelaide conference behind us, now I would like to congratulate the board on their efforts and especially the outgoing board members Dave Warwick and Rob MacDonald, on their dedicated service to the association. I only hope we will still get to see you both involved in the future at conferences and meetings. It seems a great pity to me that many of those people who have really put in over the years in serving the AGCSA, seem to disappear off the face of the earth after they finish their time on the board. This goes for both state and national associations. I don't know the reason why but maybe it comes from the constant pressure to lead by example.

I understand there are frustrations involved when you listen to what members tell you they want, you go to the effort of providing it and end up with egg on your face when members don't support a program they have provided the idea for.

A good case in point was the recent roving workshop topic for creating a Best Practices Manual. In all surveys done over the years the boxes that get ticked most when asked what the AGCSA should be doing are:-

1. Promoting the profession and...
2. Increasing professionalism in the industry.

Now I would have thought the idea of producing a Best Practices Manual at each club would boost both of these areas, and give the superintendent an opportunity to put down on paper some initiatives that would demonstrate his commitment to the job and his workplace. It is disappointing that so few people even bothered to reply. Perhaps it's just the do it "last minute" syndrome, where you can't decide what you are doing until the day before. If we want organised days like this that require speakers, facilitators, airfares, room hire, catering etc, we may have to realise that planning is involved.

On a brighter note, the turn-out at Hills Educational Foundation was very pleasing with 42 golfing and 46 to hear Dr. Pam Pitaway speak on soil micro-environments and how they react to various treatments. Richard Armstrong and Dr. Wal Scatini were on hand from sponsors Enviro Organics to enliven the discussion and display their compost product. A decent debate ensued with

plenty of knowledge swapped both ways in the delightful surroundings of host superintendent Dave Morrison's shed.

It was quite an eye opener for most of us who hadn't been to the Hills before; the course is actually the longest in the world, with some monster Par 5's winding through some glorious terrain. Our group started in the shotgun start on the first hole and by the 5th we were feeling quite battered after fighting our way through some really spectacular holes that had us guessing off the tee just how to play them.

By the time we got onto the back nine and some slightly tamer holes, the damage was done, but all in our group were keen to get back out for another round now that we know the lie of the land a bit better.

The course was immaculately presented and has certainly won a few fans after the field day. The good roll-up brought out a few keen golfers like Bill Heraghty and Greg Plummer and even Barry Harken was down on the list for a game. The catering staff did a great job with lunch too!

Next big event after the conference is our Textron/Nuturf Turf Tour in July this time visiting McLaine, Yamba (holiday letting available now) and casino. Until then keep your chins up.

**John Penberthy**



## NSWGCSA

We now have the frustrating situation in NSW where many golf courses in the coastal areas are now too wet; whilst just 30 or 40 kilometres inland the drought still rules with an iron fist.

The rain has been so confined that residents in the Sydney metropolitan area will soon be on compulsory water restrictions because so little has fallen in the Warragambie catchment area. At least it will give some people a taste of what our western district people are going through.

We have had two major events since the last issue of Australian Turfgrass Management and both were rousing successes.

Our annual Rube Walkerdon Championship Day at Manly Golf Club was special in many ways; the club was celebrating its Centenary Year. The winner of the Rube Walkerdon trophy, Allan Woods, was celebrating his confirmation of course superintendent at Tuncurry Golf Club. Trevor Ridge celebrated the successful defence of his title 'Superintendents Champion' with a fine round of 71.

Host superintendent Michael Bradbery had the course in beautiful condition, and I am sure he enjoyed the many pats on the back that he and his staff deserved. The Patons Cup Fourball Event was won by Andy Stankovic and Chris Blagg. Many thanks to Patons once again for their generous support of this great day which is steeped in tradition.

More recently we held our annual "Country Tour" which boasts a blend of education and golf. The venues this year were the Highlands Golf Club at Mittagong, where we sampled the fruits of host superintendent Brendan Warbys' labours,

and all players that braved the chilly conditions argued that the course was an excellent test of golf for players of all levels and believe me ALL LEVELS were represented.

From there it was on the bus for an exciting journey down the mountain and into the beautiful Kangaroo Valley. Richard Hooters (Hooters) was host to a great Sunday nights feasting and frivolity and many old friends got a chance to re-acquaint themselves.

Monday morning saw the education component take place and sponsors Matt Collias and Sons and Nu-Turf provided a range of speakers which enlightened the 65 strong attendees on a range of very relevant subjects to the industry.

Michael Waring from Royal Canberra provided an unusual guest speaker in the form of a greens chairman Mr Jim Townley. Mr Townley gave an insight into the best way to successfully relate to greens committees and also made the point that in his opinion, Clubs should not out source their main asset, i.e. the maintenance of the course. Needless to say Mr Townley was very popular with the delegates and it was comforting to know that there are people out there with common sense who are not blinded by the mighty dollar.

After lunch 52 players took to the spectacular mountain course in carts and David Worrad from Nu-Turf and yours truly walked; it was a very satisfying experience! Legendary south-coast dancing personality Tony Fogarty ensured that Mr Worrad and I were not left in the wake of the golf cart by not hitting his golf ball straight. Congratulations once again to Brendan and Hooter on the condition of their courses JUST GREAT!

When you have a strong combination of great sponsors and people from the board with talent like Craig Easton and Merv Haywood, great events assured! Well done fellas!

On a sad note we mourn the passing of Terry Watson who died shortly after the Kangaroo Valley event; Terry was formerly course superintendent at Bayview Golf Club on Sydney's northern beaches in the 70's. He then went into construction work and was involved at such great courses as Bonville and Riverside Oaks before travelling overseas to India and China where he was involved in many course developments. Terry was 54 years old.

Good luck to Phil George in his future career; I am sure he has played a big part in the growth of this publication.

See you all in Adelaide.

**Martyn Black**  
President NSWGCSA



## VGCSA

With 2003 well on the way it is nice to report that there has been above average rainfall recorded in some areas of Victoria.

Unfortunately many of the catchments have missed out, bringing Metropolitan Melbourne very close to level 2 water restrictions. We remain hopeful the Gods smile on us this year and the rains



come through winter and spring.

The VGCSA Annual General Meeting was held at Commonwealth Golf Club mid April with over 100 members and guests participating in the day.

Host Superintendent Mark Prosser and his team presented the course in splendid condition. We thank him for his efforts.

Guest speaker this year was Colin Phillips from the AGU who, as many would remember, was in the firing line at last year's Australian Open. His presentation was based on the lead-up to the Open and what has transpired as a consequence. With all that has been written and said over the past few months it was refreshing to hear Colin's frank summary of what happened. I know many in the room were appreciative of his efforts to shed light on what transpired.

Following Collins presentation, VGA representative Jack Meagher awarded the VGA-VGCSA apprentice of the year plaque to Jason Hounsall from Wodonga TAFE accompanied with a cheque for \$1000 donated by the VGA to assist with his career.

Congratulations to Jason and the other finalists James Dalton, Anthony King and Joel Murden.

The annual election of all office bearers was then conducted with a number of new faces coming on board.

The new look VGCSA is:

**President:** Michael Picken *Riversdale GC*

**Vice President:** Michael Riordan *Paterson River CC*

**Secretary:** Mark Lambourne *Mooroopna GC*

**Treasurer:** Brett Balloch *Anglesea GC*

**Committee:**

Chris Grumelart *Shearwater Resort*

Glen Davie *Freeway Golf*

Mark Prosser *Commonwealth GC*

Adam Robinson *Kew GC*

General business was then conducted followed by the traditional presentation of the Golf Championship trophies proudly sponsored by the Toro Company.

Winners this year were:

**Powell Trophy:** Darren Green *Lang Lang GC*

**Toro Cup:** Tony O Rielly *Yallourn Nth GC*

**Presidents Trophy:** John Mansfield *David Golf*

A brief point of concern that appears to be gaining momentum in other states, as has been the case for a long while in Vic, is the onset of contracted golf course maintenance.

Unfortunately another well known superintendent in Steve Tuckett has seen his position at Sorrento GC recently made redundant leaving his future awkwardly perched. Our thoughts go out to Steve in the hope that he finds a position shortly.

It has probably reached a time when all states should be addressing this change in club policy and develop strategies to combat this worrying trend. A forum at the Adelaide Conference may offer a good sounding board to discuss this matter.

Moving on to local upcoming events, the Managers will be hosting their respective

superintendents at the National GC in June and in August the VGCSA is heading off to the Murray Downs GC in Swan Hill for the annual country meeting.

And last but not least a welcome to Brad Marsden who has recently made the sensible move to our southern shores, taking up the supers role at Torquay Sands. We look forward to seeing him at future meetings.

See you in Adelaide.

**Michael Picken**



#### TGCSA

Well what a great autumn we are having in the sunshine state! Congratulations to the turf managers that produced some of the best playing surfaces in Australia. Steve Hooper at York Park, the best AFL surface that Hawthorn and West Coast Eagles players and officials said they have played on. Phil Hill at Launceston produced the course in the only manner he and his staff know and that is superb for the Australian Ladies Amateur. Tony Smith at Mowbray has just had the Australian Junior with the boys raving about the standard and speed of the greens. This just proves that this little back wash can produce quality turf with the best of them.

We are holding a turf managers day at Oatlands on the 17th June 2003, the speakers will be:

Mark Doherty - *about diseases and their control.*

Mike Norman - *on unregistered chemicals.*

Bruce Stephens - *on new seed release.*

Eddie Bennett - *on the training of our future.*

We will be also be looking at the grey water set up. Well done to James De Grooton on his appointment as course super at Bicheno.

Enjoy the sun!

**Chris Hay, President.**



#### TGAA (ACT & Surrounding Region)

Along with the cooler weather, winter has brought with it further water restrictions throughout the ACT & surrounding districts. The recent upgrade in restrictions should not greatly affect recreational turf areas, as consumption of irrigation water has significantly reduced due to a reduction in plant requirements.

In local news, the Canberra Institute of Technology (School of Horticulture) has received a good number of enrolments for semester 1, with many students assisting with the clean-up, repair and reconstruction of areas of the school damaged by the devastating January bush fires. Up to 50% of the grounds were damaged including the turf seed variety trial which has been established for a number of years.

The trial was undertaken by the TGAA with the support of the CIT and luckily, was near the end of its assessment and evaluation. In an effort to help rebuild lives and homes affected by the fires, the ACT Turf Grass Association has donated \$500.00 to the bush fire appeal.

Excitement is growing amongst local and interstate turfies as the ACT Turf Grass Association is in the final stages of preparing for the annual seminar to be held on the 30th of July. Like all previous seminars, this year is set to be bigger and better than the last. Topics will encompass differing aspects of weed, pest and disease control, soil structure and profiles, electronic nutrient sensors, modern wicket preparation, new seed and turf varieties, blood tests for pesticide residues and much more. Speakers include Peter Apps (curator of Bellerive Oval), Helen Mauriarty (Charles Sturt University), Dr Donald Loch (Queensland University) plus many more. Members and anyone who attended last year's seminar should have received a registration form and program. If you wish to attend, and you do not have a registration form, contact the TGAA by mailing to TGAA, ACT region, PO Box 3223, Weston Creek, ACT., 2611. Don't miss out! Come along to a friendly, social environment and learn of new ideas and the latest innovations in the turf industry.

Seminar particulars are as follows:

**Date:** Wednesday 30th July, 03

**Venue:** Burns Club, Kambarr ACT

**Cost:** \$80

On a final note, the ACT TGAA would like to wish all the best to committee member Glen Dawson who has left Australia for New York in pursuit of an international career at the Shinnacook Hills CC, Long Island, which will be hosting the 2004 US Open. Congratulations Glen.

Till next time, agrostologists.

**Justin A K Haslam**

**(Committee, TGAA ACT & Surrounding Regions)**

#### TGAA (Vic) Report

To all members,

It has been a busy time for the TGAA(Vic) Activities over the autumn. In April, we conducted an extremely successful *OHS* day at Trinity Grammar in Bulleen. Our theme this year was personal health and safety, and we were fortunate to have such a good list of presenters.

The morning opened with a presentation from Mr. Glen Hopkins, horticulturist at Melbourne Zoo. Glen explained how management at the Zoo were coping with the issue of an ageing work population in a physically demanding work site. In response to this, Glen has undertaken "Body Mapping" of work stress injuries for each of their staff, and produced a series of stretching exercises that each of the staff carry out as part of their daily work routine.

As a result of this pro-active attitude, and with the full support of management, Glen and his staff have been really dynamic in identifying and rectifying areas of health and safety concern in their work place, thereby reducing time lost to injuries in their workplace.

WorkSafe Victoria were our next presenter.

Ms. Christy Frejer outlined the rapidly changing role of WorkSafe Vic in our work environment.

An overview of the Act and the broad implications



for us all was followed by some explanation of common issues that arise in our workplaces. Ms. Frejer also outlined the importance of developing a good relationship between the employer and the their respective insurance agents in relation to health and safety issues. The TGAA is extremely grateful to Ms. Frejer and WorkSafe Victoria for their assistance at this and past OHS days.

Commonwealth Rehabilitation Services (CRS) are called upon to assist in developing and implementing Return to Work plans for people who have been seriously injured at work. Ms. Melissa Hooper and Ms. Sharon Leahy from CRS were our next presenters. They outlined the role of CRS, and how they go about assessing injuries and developing rehabilitation strategies for people returning to work, and provided booklets and guidelines to assist us preparing a suitable Return to Work plan for our workplace. This presentation complemented our previous speaker.

Ms. Danielle Bonett, a Prosthetist/Orthotist was, our next speaker. Her topic was how to look after our health by looking after our feet. Ms. Bonett explained how many common foot, ankle and leg injuries were a direct result of the selection of inappropriate footwear. Once again, this was an excellent presentation that outlined some straightforward solutions to common ailments.

To complete our presentation, Mr. Ted Boltong from Active Safety Supplies, gave an entertaining and informative reminder to us all about a range of products designed to make what could be a dangerous work task a lot safer to us and to our work environment. As I said, it was informative, but more importantly, it was very, very entertaining. Just imagine for a moment, Ted Boltong, completely outfitted in various spray protective clothing outfits, boots, gloves, and masks (there were at least three that I could see), giving us a running commentary on what was either the latest in trends in personal safety protection, or it could have been a list of potential winners in the last at Caulfield; with all of those masks, it was a bit hard to understand to say the least!

A special "Thanks" to all our presenters for assisting in our day. Thanks also go to Mr. David Sanguinetti for enabling us to use the wonderful facilities at Trinity College, to Simone Staples for all of her work, to Abbey Smith at Melbourne Zoo and Matt Scott at Simplot, and the rest of the Activities sub committee for all of their hard work in ensuring the day was a great success, and especially to Active Safety Supplies who were our major sponsor on the day.

Following on from our OHS day, May 7 saw the TGAA and ASBA combined field day held at Marcellin College in Bulleen. This is a wonderful event put on to develop appreciation and understanding between these two organisations.

The day was very well attended by in excess of 150 people, plus trade exhibitors. The day contained two main themes to cater for both the Turf Professional and the School Administrator.

Those two themes were:

- Master Plans: Their development & implementation, from concept to completion.
- Turf Surfaces: How do we provide better turf surfaces with less fresh water resources?

The outline of the turf stream was as follows.

#### **Recycled Water: A Historical Perspective.**

**By Mr. John Neylan. AGSCATech.**

John presented an outline of the recent history of water recycling in the turf industry since the early 1980's. From moves that started after the last serious drought in 1982/83 through to the current day, John brought the forum up to date with the most common issues that arose from the consideration of recycled water use in the turf industry. These included the issues of excessive nutrition, dealing with salt tolerances, and the needs for adequate monitoring of sites prior to and during the use of recycled water.

#### **Drought Tolerant Grasses.**

**Phil Ford. Senior Lecturer, NMIT Turf Department.**

Phil outlined the major differences between warm and cool season grasses as an introduction to this presentation. This also included a broad definition and description of the major types of both cool and warm season grasses used in the sports turf industry in Victoria.

As a major part of this presentation, Phil guided us toward the selection of couch grasses that are now available for use in this industry. He was able to outline the performance characteristics and benefits that arise from the use of these grasses, a major one being the ability to survive on little or no water once established.

Phil also outlined the trial work that is currently under way in Victoria on the use of other grass species that may have applications for use in low or recycled water situations.

#### **Water as a Resource: Where to for Melbourne?**

**Michael Arbon. Melbourne Water.**

As our final presenter in the turf stream, Michael Arbon outlined the strategy of Melbourne Water for coping with the predicted increased demand for freshwater over the next 50 years in our community.

Michael was able to present a wealth of information for delegates showing current water use trends, areas of use, future trends, and explain how fresh water would not be available for use in horticulture or turf in the future at the current levels.

There will be no more dams to be built in the foreseeable future to store and supply more water, and demand for fresh water will increase substantially.

#### **Summary.**

It is apparent from the presentations given by both Michael Arbon and John Neylan, that there will soon be extraordinary pressure on us in the turf industry to provide suitable alternatives to the high water use, cool season grass swards that are currently being prepared in many situations.

The presentation given by Phil Ford provided us with some serious direction into ways we can work toward maintaining, and even improving our turf surfaces by using warm season grasses that require less water.

Our thanks go to all of our presenters for their excellent contribution. Our sponsors again showed great support for the TGAA, which is greatly appreciated. To all of our sponsors who supported and attended this day, please be rest assured that the issue of "phantom sponsors" turning up unannounced at events such as this is being dealt with at Committee level. Thanks also to the ASBA committee, and especially Simone Staples and Anthony Uhr Henry for preparing for this day.

I am sorry to have to announce that Matt Scott is standing down from his role in TGAA Activities. On behalf of our committee and members I would like to thank Matt for all of his wonderful efforts and enthusiasm while working with us, and take this opportunity to wish him all the best for the future.

*The next TGAA (Vic) function will be the Cricket Wicket Seminar on Tuesday July 15, at Colonial Stadium. We have an excellent program organised for that day. Fliers will be out soon. Look forward to seeing you then.*

**Jim Marchbank,  
TGAA(Vic) Activities.**



#### **GCSAWA**

Finally turf managers and farmers can breathe easier with the onset of excellent autumn rain. In some areas recent rainfall records have been broken and fortunately good rainfall has extended further east into the agricultural areas.

The period since the last Presidents report has been full of positives for our West Aussie Turf Managers, young and old. Firstly, our GCSAWA Best Indentured Apprentice Award was deservedly won by Nick Kinley, formerly employed at the Vines and now working under his old Assistant from the Vines, Darren Wilson at Wembley Golf Complex.

Congratulations must also go to two superintendents for their recent success at gaining new appointments at two of WA's metropolitan golf courses. Michael Williams has taken over as superintendent at Aralluen Country Club recently and Michael Dennis fills the position of course superintendent at Royal Perth Golf Club later in June. Obviously with any new appointment someone moves on to bigger and better things and on behalf of the GCSAWA I would like to extend a sincere thanks to Tony Johnston for his support of the Industry in WA and wish him and his family all the best in the future.

As you all should be aware the 19th Annual Turfgrass Conference will be held in Adelaide from the 23rd June to the 27th June. It is exciting to announce of the success of two West Aussies in becoming national finalists for this year's AGCSA Awards.

Idris Evans - Western Australian GC has been selected as a national finalist for the AGCSA



Excellence in Turf Management Award and Nick Kinley's selection as national finalist for the Graduate of the Year Award. To the both of you, well done for your success to date in being selected from colleagues around Australia, and we all extend our best wishes for your forthcoming selection interviews in Adelaide.

For those of you who are sitting on the fence and have not registered for this year's conference, don't miss out on what is set to be another great few days and take advantage of the fact that this conference in Adelaide is the closest to WA for the next couple of years.

On a less positive note, from a state point of view it was a little disappointing to have the recent AGCSA Best Management Practices Workshop cancelled due to lack of interest from some States. Congrats firstly to the AGCSA, primarily for trying to provide educational content to it's members, and secondarily to the 23 odd Superintendents and Assistants around Australia who saw it as a worthwhile, well priced exercise and registered. As a result, the GCSAWA took the day on in it's original format and those 13 West Aussies who registered and showed up had a great time and enjoyed an open constructive discussion. Thank you very much to those guys for their support.

Next event : July 15th WA Golf Club – Golf Course Re-development. Further details soon.

**Brad Sofield**  
GCSAWA



April saw the VGA conduct the K & B Adams Turf Pairs at Port Melbourne Bowls Club. Approx. 20 turfies enjoyed a BBQ with several ales and plenty of discussion over the tough season that was, followed by a hard fought game of bowls. Many thanks to our sponsors and of course Darren Walls

(Turf Manager) who produced an excellent TifDwarf playing surface (who says it can't be grown south of the ranges?) On the 20th, 21st & 22nd of May the VGA headed to Albury to conduct a mini-conference, which included some interesting talks by some of the district's most talented turfies and a manager from the water board and also to play the rest of the association's championship games. This was truly the first real Victorian Championship as there were greenkeepers from all around the state in attendance. This event would not have been such a success but for the efforts of committeemen Alan Elliot and Shane Harling, and local legend Greg Dunn as he arranged just about everything. Top effort that!!

On the weekend of June 28 & 29, the VGA will be meeting in Horsham to have a challenge match against SA. The rivalry between the two states isn't quite as bad as in football but it is tough. We intend to play bowls on the Saturday at Ross Barnetts' Sunnyside Bowls Club, then for those who wish to test themselves out on a top golf course, play golf at Horsham on Sunday morning and the not so adventurous will have another game of bowls followed by us all getting together again at Sunnyside for a BBQ before heading back home in the arvo.

In the 2nd or 3rd week in August the VGA will be conducting its annual Seminar/AGM. More information about all the above events will be in our VGA newsletter in June or alternatively if you're interested in attending our days you can contact me on ph./fax. 03 9337 0112 or email [duncan.knox@bigpond.com](mailto:duncan.knox@bigpond.com) Happy renovations & holidays and please safe driving. Cheers.

**Duncan Knox.**



As I sit and write this report the 19th Australian Turfgrass Conference is fast approaching. I would like to take this opportunity to wish all delegates and exhibitors a warm welcome to South Australia and hope everyone has a successful conference, with the Adelaide Convention Centre being our base for the week and everything needed for a successful stay within easy walking distance of the Centre. I am sure a great conference will be had by all.

After a dry and warm start to autumn some good opening rains in most districts has lifted hopes for a good wet winter. With water restrictions coming into force at the start of July, every drop of rain will be more welcome as the year moves on. As far as the restrictions go, the details of the scope of these restrictions to the golf industry have yet to be fully detailed as we go to print. These restrictions will be keenly studied over the next few weeks for the full impact on our part of the turf industry to be fully appreciated.

Congratulations must go to Rob Millington and his staff at the Vines of Reynella for the way they presented their course for the recent South Australian PGA tournament, the course was in fantastic condition. Rob even turned on the weather, judging by the scores the pros had, and the tournament was a success for all concerned. Our State AGM was held at the Murry Bridge Golf Club on June 5. A detailed report will be included in our next edition.

Upcoming dates for the diary are.  
August meeting.  
Adelaide Shores Golf Club.  
Host Superintendent Paul Morley.  
Looking forward to seeing you all in Adelaide  
**Peter Harfield**  
President

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An aerial photograph of a golf course. On the left, a large, dark body of water borders the course. A dense forest of green trees sits on a peninsula between the water and the green. The green itself is a light green color with a prominent checkered pattern. Several people are visible on the green, some standing and some in motion. The overall scene is captured from a high angle, looking down on the landscape.

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