

BY JOHN NEYLAN

The new AGCSA Environmental Initiative logo

John Neylan looks at the AGCSA's environmental management initiative and outlines the latest results to come from the warm-season grass trials at Redlands and *Poa annua* control trials being conducted in Victoria and NSW.



AGCSA ENVIRONMENTAL INITIATIVE LOGO

Golf courses often occupy significant tracts of urban land that may be in ecologically sensitive areas and provide a number of benefits to the community and the environment.

Golf course management is an intensive form of horticulture and requires moderate levels of inputs in order to sustain the quality of golfing surfaces. High quality turf requires a constant, good quality water supply, moderate nutrient levels, applications of pesticides; and energy inputs in operating machinery, pump stations and facilities.

All this often occurs in environmentally sensitive locations where the golf course operation not only has to manage the turf but also native flora and fauna, waterways, wetlands and soils.

Golf course management has become a high-tech industry, with an increasing range of new technologies available to assist golf courses in becoming more eco-efficient. The rapid adoption of new technologies and new practices has led to a greater understanding of potential environmental impacts.

Environmental responsibility is a core value of the Australian golf industry which recognises the important role it plays in maintaining golf courses in a sustainable and environmentally responsible manner.

To help facilitate this, over the past year

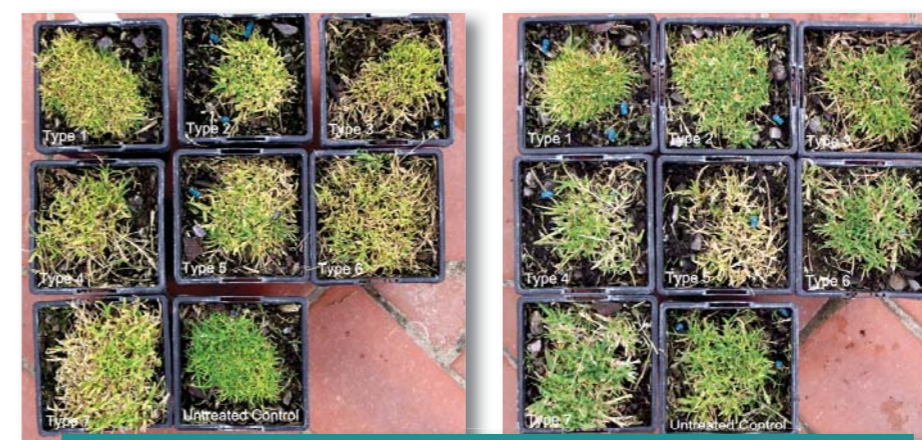
the AGCSA has rolled out its Environmental Initiative which has an ongoing commitment to improving environmental management. Through the Environmental Initiative the golf industry is committing to environmental excellence by:

- Integrating environmental factors into business decisions;
- Striving to meet and, where appropriate, exceed the requirements of all relevant legislation, regulations and other requirements to which the industry subscribes;
- Developing and maintaining the AGCSA's Golf Environmental Management Strategy that distinguishes the Australian golfing industry as the world leader in environmental management;

- Encouraging commitment to the environment through training and awareness programmes;
- Constantly striving to achieve continual improvement and the prevention of pollution in the environmental performance of golf courses;
- Promoting water management strategies to all members;
- Continuing to support and further enhance integrated pest management strategies;
- Setting environmental objectives and targets and assessing the golf industry's achievements;
- Annually reviewing the Environmental Initiative and to communicate it to all members of the Australian golf industry and the public.

TABLE 1: POA ANNUA COUNTS AT COMMONWEALTH GOLF CLUB

Treatment	% Poa annua plants					
	20/12/06	20/03/07	11/05/07	2/07/07	24/08/07	24/10/07
T1	8.8	5.5	8.0	13.8	9.3	9.3
T2	8.8	5.0	5.5	13.0	9.8	5.8
T3	8.8	3.0	7.3	6.8	7.3	2.0
T4	6.3	3.5	8.5	9.3	8.5	3.3
T5	7.5	3.5	6.0	5.5	5.0	1.3
T6	6.3	2.3	8.5	6.5	6.5	2.3
T7	8.8	3.5	9.3	10.5	11.8	12.5
Control	10.0	5.0	16.3	15.5	15.5	19.3
P<0.05	ns	ns	3.2	5.1	6.6	5.5



The effects of endothal (left) and paclobutrazol (right) herbicide applications on the seven *Poa annua* types as part of the AGCSA's control trials

- Encouraging a similar environmental commitment from material suppliers and contractors; Being part of such an initiative is a positive step for any golf club and one that should be widely promoted by superintendents and the club to members, the industry and the wider golfing community. To that end the AGCSA has designed a unique logo (pictured opposite) which those who have signed up to the initiative can now display to demonstrate their commitment to environmental excellence.

Many superintendents will well remember the first cover of Australian Turfgrass Management magazine some 10 years ago which featured a striking photo of a green and golden bell frog perched contently on a golf ball. That image has become synonymous with golf and environmental management and the AGCSA has incorporated it into the new environmental initiative logo.

Using this image is particularly appropriate as the frog is a creature highly sensitive to environmental conditions and changes in the environment. The presence of frogs in the environment indicates a healthy environment, clean water and low pollution.

In the case of the green and golden bell frog, its numbers have gradually declined to the point where it is now listed as endangered under the New South Wales Threatened Species Act and classified as vulnerable nationally.

Long Reef Golf Club in Sydney is one of the few remaining areas where this species of frog still thrives and is a prime example of the role golf courses can play in both maintaining and enhancing the environment. It is therefore appropriate that the AGCSA Environmental Initiative has adopted this image as a symbol of

golf's commitment to the environment. The green tick logo represents your club's commitment to being environmentally aware and that you are documenting your environmental activities through the preparation of a dedicated environmental management system.

The logo is now available to all clubs and organisations signed up to the AGCSA's Environmental Initiative who are free to use it on letterheads, newsletters, golf course signage and, in the case of suppliers to the turf industry, in their promotional literature. For more information about the AGCSA's Environmental Initiative and the new logo, contact the AGCSA on (03) 9548 8600 or email info@agcsa.com.au

POA ANNUA CONTROL TRIALS

In recent editions of ATM we have looked at the *Poa annua* control trials currently being undertaken at both Commonwealth Golf Club (VIC) and Bonnie Doon Golf Club (NSW). The spring application of herbicides has been undertaken while herbicide tolerance screening trials of the seven *Poa annua* types have also been made. The results at this time are detailed in Table 1 and Figure 1.

The treatments are:

- Treatment 1:** Monthly applications of Shortstop (a.i. Paclobutrazol @ 200g/l).
- Treatment 2:** Shortstop (a.i. Paclobutrazol @ 200g/l) @ 2.0/ha + Dimension @ 2l/ha.
- Treatment 3:** Shortstop (a.i. Paclobutrazol @ 200g/l) @ 2.0l/ha + Bensulide @ 30l/ha.
- Treatment 4:** Shortstop (a.i. Paclobutrazol @ 200g/l) @ 2.0l/ha + Dimension @ 2l/ha + Ethephon @ 8l/ha.
- Treatment 5:** Shortstop (a.i. Paclobutrazol @ 200g/l) @ 2.0l/ha + Bensulide @ 30l/ha + Ethephon (480g/L) @ 8l/ha.
- Treatment 6:** Shortstop (a.i. Paclobutrazol @ 200g/l) @ 2.0L/ha + Bensulide @ 30l/ha + Ethephon @ 8l/ha + Poacheck @ 1.5l/ha.
- Treatment 7:** Endothal @ 1.5l/ha.
- Treatment 8:** Untreated control.

The results at this time show that all treatments have significantly less *Poa annua* than the control, with combination treatments (i.e.: T3-T6) providing the best results. The endothal-only treatment is the least effective of the treatments. The use of paclobutrazol and

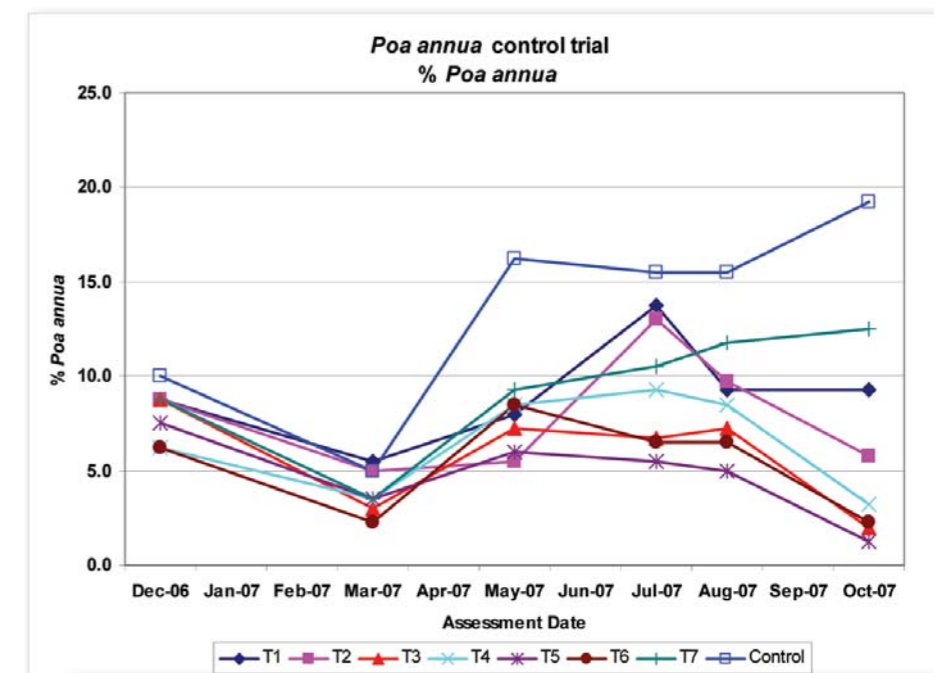


Figure 1. *Poa annua* counts at Commonwealth Golf Club

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The warm season trial plots at Redlands

ethephon is also providing a very high quality playing surface as well as good *Poa* control.

The *Poa annua* type herbicide screening trial has demonstrated a variation in herbicide sensitivity depending on the *Poa annua* biotype. The dense, prostrate types show a greater resistance to herbicides compared to the more open and taller types as demonstrated in the photos (for a full description of the variation in *Poa annua* types, see AGCSATech Update Vol. 9.5). The herbicides tested are paclobutrazol, propyzamide and endothal.

WARM-SEASON GRASS TRIALS AT REDLANDS

The warm-season grass project at the QDPI&F's Redlands Research Station has been under way for more than 18 months. The trials are already showing noticeable differences between the couchgrass hybrids and the seashore paspalums.

With reduced cutting heights, thatch accumulation and general maturity in the grasses, we are starting to get a good appreciation of the attributes of the different species and cultivars.

TABLE 2: MEAN HYBRID COUCHGRASS COLOUR, QUALITY AND THATCH VISUAL OBSERVATIONS 5 JUNE, 2007

Cultivar	Colour	Quality	Thatch
Mini Verde	7.63	7.63	3.88
MS-Supreme	6.38	7.00	2.25
Novotek	6.38	6.63	2.38
Tifdwarf	4.88	5.00	1.00
TifEagle	6.75	6.75	3.13
Tifgreen	6.13	6.75	1.63
LSD (P=0.05)	0.73	0.84	0.38
Champion	6.50	6.75	2.75
FloraDwarf	5.75	6.75	2.00

TABLE 3: MEAN SEASHORE PASPALUM COLOUR, QUALITY AND THATCH VISUAL OBSERVATIONS 5 JUNE, 2007

Cultivar	Colour	Quality	Thatch
Sea Isle 2000	7.50	7.13	1.05
Sea Isle			
Supreme	7.50	7.00	1.48
Velvetene	7.50	6.50	1.15
LSD (P=0.05)	0.58	0.25	0.14



There are several off-site trials being started (or about to be started) and these will provide useful information on species and cultivar performance under different climatic conditions and maintenance regimes. Sites are being established in Victoria, South Australia, New South Wales and Queensland.

Following the appointment of experienced superintendent Jon Penberthy in January 2007, each cultivar plot was scarified to remove thatch, topdressed with sand, and mowing height gradually reduced to bring them down to target treatment heights.

This height-reduction process was slowed when at 5mm the Sea Isle 2000, in particular, showed signs of scalping. These plots were dusted with sand to encourage re-growth in the scalped patches. The hybrid couchgrass plots were not affected adversely by the reduction in height.

Currently the cutting height of the hybrid couchgrass and seashore paspalum cultivars is at 2.7mm using a John Deere walk-behind greens mower. Jon has received a set of grooming heads from overseas (John Deere) and a Jacobsen walk-behind mower has also been delivered which will enable the research team to reach lower heights where required.

TABLE 4: INCIDENCE OF PATCH DISEASES (NUMBER OF DISEASED SPOTS PER 6x3M PLOT) IN HYBRID CYNODON CULTIVARS ON THE REDLANDS RESEARCH GREEN 31 AUGUST, 2007

Cultivar	Patch 1 (spring dead spot)	Patch 2 (ring spot)
MiniVerde	5.0	4.0
MS-Supreme	7.0	6.3
Novotek	3.5	12.3
Tifdwarf	1.0	4.8
TifEagle	7.5	12.8
Tifgreen	12.3	7.8
LSD (P=0.05)	7.6	5.7

The first set of ratings was conducted on 5 June, 2007 to assess turfgrass colour, quality and levels of thatch. Subjective visual ratings were made on a 0-9 scale (0 = poor, 9 = best) over the replicated plots and later analysed by research staff. The mean values of the two species can be seen in Tables 2 and 3.

PATCH DISEASES IN HYBRID COUCH PLOTS

Despite a preventative fungicide programme throughout 2006/07, two distinctly different patch diseases became evident in late winter 2007 in plots of the various hybrid *Cynodon* cultivars on the research green at Redlands. Samples of these two diseases were sent to Dr Percy Wong for identification.

The first of these showed classic symptoms of spring dead patch, with dead grass across the whole patch. The presence of *Leptosphaeria* sp., the causal organism of spring dead patch, was confirmed by Dr Wong in the two submitted samples from Tifgreen and MS-Supreme. He also found *Rhizoctonia solani* present in the sample from MS-Supreme.

The second patch disease showed up as a ring of dead grass around recovering green grass in the centre. Dr Wong isolated *Gaeumannomyces incrustans* from samples of TifEagle. Tests on these fungi are continuing to determine whether or not they are pathogenic to hybrid green couch.

Counts of the number of diseased spots in each plot were made on 31 August, 2007. All cultivars were affected to a greater or lesser degree by both diseases as the figures in Table 4 indicate.

Two observation plots of Champion Dwarf were also badly affected by both patch diseases (averages of 16 and 18 diseased spots per plot for patch diseases one and two, respectively). Interestingly, however, in two similar observation plots of FloraDwarf there were no spots present of either patch disease. 🌱