The ANTEP ryegrass and tall fescue trial plot at Mt. Scopus Memorial College in Melbourne

ANTEP ryegrass and tall fescue trials

AGCSATech senior agronomist Andrew Peart provides a snapshot of the final results to emerge from the two-year ANTEP ryegrass and tall fescue trials conducted at Mt Scopus Memorial College in Victoria.

In 2006 the Australian Golf Course Superintendents Association (AGCSA) was commissioned by the Australian Seed Federation to conduct a two-year turfgrass evaluation programme of perennial ryegrass and tall fescue varieties. The trial was established in September that year with 38 perennial ryegrass (plus Victorian perennial ryegrass) and 18 tall fescue varieties being evaluated.

The site chosen to host the trial was located at Mt. Scopus Memorial College in Burwood, Victoria. The trial site was located on the north east corner of the main oval, an area that was generally out of play as it was well away from school buildings and outside the boundary line of the football oval.

The area was also irrigated under an automatic irrigation system and there was no presence of kikuyu or couchgrass. The oval had been constructed with a sand profile and sown with perennial ryegrass. Over the years there has been considerable thatch accumulation and a large proportion of the turf cover was dominated by winter grass.

Companies participating in the trial were Advanced Seed, DLF Seeds, Gidley and Co, HG Turf, Heritage Seeds, PGG Wrightson and Seed Force. The varieties submitted can be identified by the abbreviation of the company name in brackets after the variety name in the accompanying tables (see key page 60).

SEEDING

The trial site was sown on 26 September 2006. The perennial ryegrass varieties were sown at the equivalent rate of 30g/m^2 and the tall fescue varieties at 40g/m^2. All varieties were adjusted to allow for differing germination rates and sown to provide 100 per cent germination.

The plot size of the perennial ryegrass varieties was two square metres (2.0mx1.0m) and the tall fescue was 1.5m^2 (2.0mx0.75m). All varieties were replicated on three occasions with the exception of the Victorian perennial ryegrass variety that was only replicated twice.

IRRIGATION

Irrigation was applied on an 'as need' basis during the establishment period. This was generally on two occasions, early morning and mid-afternoon although on very warm days a supplementary application was made in the middle of the day.

Irrigation continued to occur on an 'as need' basis although it was restricted with the implementation of State Government water restrictions. Mt. Scopus was able to obtain an exemption during the first year of the trial but during the second year, when Stage 3 restrictions were enforced which limited the amount of water that could be applied, turf deterioration occurred on some occasions.

TABLE 1: OVERALL RANKING OF EACH PERENNIAL RYEGRASS VARIETY FOR TURFGRASS COLOUR AFTER TWO YEARS

Variety	Yr 1 Ave	Yr 2 Ave	Overall	Ranking
Pennant III (HG)	7.9	7.6	7.7	a
Derby Xtreme (DLF)	7.2	7.1	7.2	b
Fiesta 4 (PGG)	7.3	6.9	7.1	bc
SR 4600 (AS)	7.1	7.0	7.1	bc
Cutter 2 (G)	7.2	6.9	7.1	bc
Regal 5 (DLF)	7.2	6.9	7.0	bcd
All Star 3 (DLF)	7.2	6.9	7.0	bcd
1G2 (PGG)	7.1	6.8	7.0	bcd
Pinstripe (G)	7.1	6.8	6.9	bcde
Tophat II (DLF)	6.9	6.9	6.9	bcde
Harrier 2 (DLF)	6.9	6.7	6.8	cdef
Mach 1 (PGG)	6.9	6.7	6.8	cdef
SR 4420 (AS)	6.9	6.7	6.8	cdef
Pinnacle II (HS)	6.8	6.7	6.8	cdef
SR 4220 (AS)	6.9	6.6	6.8	cdef
Ringer (G)	6.8	6.7	6.8	cdef
Keystone 2 (DLF)	6.9	6.6	6.8	cdef
LSD (P<0.05)	**0.3**	**0.3**	**0.3**	

Once a season plots were assessed for vertical growth

MOWING AND FERTILISER APPLICATIONS

The varieties were mown at a height of 26mm throughout the duration of the trial either weekly or twice a week depending on the season, and fertiliser applications were applied on an 'as need' basis after establishment had occurred. Generally the trial area received an annual application of 1.5kgN/100m^2.

ASSESSMENTS AND RESULTS

Once the trial site was established assessments were undertaken for two years. Plots were assessed every two months for turfgrass colour, density, leaf shredding and disease. These ratings were conducted by visual assessment with a rating from 0–9 (for colour and density 0 = poor and 9 = excellent; for leaf shredding and disease 0 = none and 9 = high).

Once a season plots were visually assessed for vertical growth which was again rated 0–9 (0 = no growth, 9 = vigorous growth) and on an 'as need' basis plots were rated for any sign of disease or other damage.

The ryegrass tables presented in this article are not the full representation of all varieties due to the limitation of space. However, the tables tend to show the better performing varieties although many varieties that are not shown may be as good as those presented.

TABLE 2: OVERALL RANKING OF EACH PERENNIAL RYEGRASS VARIETY FOR TURFGRASS DENSITY AFTER TWO YEARS

Variety	Yr 1 Ave	Yr 2 Ave	Overall	Ranking
Cutter 2 (G)	7.5	7.3	7.4	a
Fiesta 4 (PGG)	7.3	7.3	7.3	ab
Derby Xtreme (DLF)	7.2	7.4	7.3	ab
Keystone 2 (DLF)	7.4	7.1	7.3	ab
All Star 3(DLF)	7.3	7.2	7.2	abc
SR 4600 (AS)	7.1	7.3	7.2	abc
Premier II (HG)	7.3	7.0	7.1	abcd
Harrier 2 (G)	7.2	7.1	7.1	abcd
SR 4220 (AS)	7.1	7.1	7.1	abcd
Citation Fore (HS)	7.1	7.1	7.1	abcd
Arena 2 (PGG)	7.1	7.1	7.1	abcd
PR 8821 (DLF)	7.0	7.1	7.0	bcd
Regal 5 (DLF)	6.9	7.1	7.0	bcd
Mach 1 (PGG)	7.0	7.0	7.0	bcd
Integra (PGG)	6.9	7.1	7.0	bcd
Pennant III (HG)	6.9	7.1	7.0	bcd
LP 4317 (HS)	6.9	7.1	7.0	bcd
Penguin II (G)	6.9	7.0	7.0	bcd
Pennant II HG)	6.9	7.0	7.0	bcd
Atlas (PGG)	6.9	7.0	7.0	bcd
LP 40C (HS)	7.0	6.9	7.0	bcd
LSD (P<0.05)	**0.3**	**0.3**	**0.3**	

A full list of the trial's results was handed out to attendees at the TGAA Victoria's annual Cricket Wicket Seminar held on 24 June at the Melbourne Cricket Ground. Further copies are also available by visiting the Australian Seed Federation website www.asf.asn.au.

Varieties are significantly different from each other if the difference in rating score between the two varieties is greater than the LSD figure. This has been presented with an alphabetical letter which represent any significant difference of the overall result.

For those varieties with no common letter it means they are significantly different to each other. Where there is a common letter, the varieties are deemed to be not significantly different in their performance.

For example in Table 1 Pennant III has a significantly darker green colour than all other varieties, while the varieties Derby Xtreme to Tophat II are not considered to be significantly different from each other as they share the letter 'b'.

The ryegrass tables that are presented show the results of turfgrass colour, turfgrass density and winter growth for each of the first two years and then an overall rating, which is an average of the two years. As can be seen from the results many varieties have performed very well and most are not significantly different from each other.

There was, however, a standout variety in terms of colour, with Pennant III having a significantly darker green colour than all the other ryegrasses, while the varieties Victorian ryegrass and Matilda, which are not shown, were significantly lighter green than any of the other varieties.

The results for ryegrass density averaged after two years showed that there were 11 varieties that provided the most dense turfgrass coverage that were not significantly different to each other, while there were another 20 varieties that provided only a slightly less dense cover. The variety Matilda, which is not shown, provided the least dense cover.

The results for winter growth (Table 3) indicated that Matilda provided the greatest winter growth, significantly more than any other variety, while Victorian ryegrass provided the second highest amount. After these there were another 15 varieties that provided the next greatest amount of vertical growth that were not significantly different from each other.

The tall fescue results shown in Table 4 outline the average over two years for turfgrass density. It can be seen that Jamboree, Bullseye and Essential exhibited significantly greater turf density than all other varieties when averaged over the two years, while there was very little difference between the remaining 15 varieties.

ACKNOWLEDGEMENTS

The AGCSA would like to thank Mt. Scopus Memorial College and in particular the efforts of curator Nathan Tovey and his staff for maintaining the trial area, particularly during the summer months.

A number of industry field days were held during the trial

TABLE 3: WINTER GROWTH OF PERENNIAL RYEGRASS VARIETIES IN THE FIRST AND SECOND YEARS

Variety	Yr 1	Yr 2	Overall	Ranking
Matilda (AS)	7.7	7.3	7.5	a
Victorian Rye	6.5	5.8	6.1	b
Atlas (PGG)	5.7	5.0	5.3	c
PR 8821 (DLF)	5.3	5.3	5.3	c
SR 4600 (AS)	5.0	5.2	5.1	cd
Saint (HG)	5.2	5.0	5.1	cd
1G2 (PGG)	5.0	5.2	5.1	cd
Pacesetter (AS)	5.0	5.2	5.1	cd
Indy (G)	5.0	5.2	5.1	cd
Centurion (PGG)	5.3	4.8	5.1	cd
SR 4420 (AS)	5.0	5.0	5.0	cde
Pennant II (HG)	5.0	5.0	5.0	cde
Harrier 2 (G)	5.0	5.0	5.0	cde
Ragtime (SF)	4.7	5.2	4.9	cdef
Derby Xtreme (DLF)	4.7	5.2	4.9	cdef
Integra (PGG)	5.0	4.8	4.9	cdef
Arena 2 (PGG)	5.0	4.8	4.9	cdef
Premier II (HS)	4.7	5.0	4.8	def
LP 4317 (HS)	4.7	5.0	4.8	def
Penguin II (G)	4.7	4.8	4.8	def
SR 4220 (AS)	4.7	4.8	4.8	def
SF R51-001 (SF)	4.7	4.8	4.8	def
Pinnacle II (HS)	4.3	5.2	4.8	def
Fiesta 4 (PGG)	4.7	4.8	4.8	def
Mach 1 (PGG)	4.7	4.8	4.8	def
LP 40C (HS)	4.7	4.8	4.8	def
Brightstar SLT (HS)	4.7	4.8	4.8	def
Keystone 2 (DLF)	4.7	4.8	4.8	def
LSD (P<0.05)	**0.7**	**0.5**	**0.4**	

TABLE 4: OVERALL RANKING OF EACH TALL FESCUE VARIETY FOR TURFGRASS DENSITY AFTER TWO YEARS

Variety	Yr 1 Ave	Yr 2 Ave	Overall	Ranking
Jamboree (DLF)	7.3	7.4	7.3	a
Bullseye (G)	7.2	7.4	7.3	a
Essential (DLF)	7.1	7.3	7.2	ab
Turbo RZ (G)	6.9	6.7	6.8	c
Rebel 4 (PGG)	6.8	6.6	6.7	cd
Justice (PGG)	6.6	6.7	6.7	cd
Grande 11 (AS)	6.6	6.6	6.6	cd
Tarheel II (HS)	6.7	6.5	6.6	cd
Barvado (HS)	6.6	6.5	6.6	cd
Escalade (G)	6.5	6.6	6.6	cd
SR 8600 (AS)	6.6	6.5	6.6	cd
Regiment 11 (G)	6.6	6.5	6.5	cd
Barlexas II (HS)	6.6	6.5	6.5	cd
Shelby (HG)	6.6	6.4	6.5	cd
SFR52-001 (SF)	6.6	6.4	6.5	cd
Houndog 6 (DLF)	6.4	6.5	6.4	d
Rhizing Star (DLF)	6.4	6.3	6.4	d
RTF (HS)	6.4	6.3	6.4	d
LSD (P<0.05)	**0.3**	**0.3**	**0.3**	

Key for participating companies:

(AS) – Advanced Seed
(DLF) – DLF Seeds
(G) – Gidley and Co
(HG) – HG Turf
(HS) – Heritage Seeds
(PGG) – PGG Wrightson
(SF) – Seed Force