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FINAL RESULTS OF ANTEP PERENNIAL RYEGRASS & TALL FESCUE VARIETY TRIAL (2007 & 2008)



TABLE OF CONTENTS

TABLE OF CONTENTS	2
1.0 INTRODUCTION	3
2.0 ESTABLISHMENT METHODOLOGY	3
3.0 ASSESSMENT METHODOLOGY	5
4.0 RESULTS	5
4.1 – PERENNIAL RYEGRASS	7
4.1.1 Percent cover during establishment	7
4.1.2 Turfgrass vigour during establishment	8
4.1.3 Colour - Year 1	9
4.1.4 Colour - Year 2	10
4.1.5 Colour - Overall	11
4.1.6 Density - Year 1	12
4.1.7 Density - Year 2	13
4.1.8 Density - Overall	14
4.1.9 Leaf Shredding - Year 1	15
4.1.10 Leaf Shredding - Year 2	16
4.1.11 Leaf Shredding - Overall	17
4.1.12 Disease Incidence - Year 1	18
4.1.13 Disease Incidence - Overall	19
4.1.14 Autumn Growth - Overall	20
4.1.15 Winter Growth - Overall	21
4.1.16 Spring Growth - Overall	22
4.1.17 Summer Growth - Overall	23
4.2 – TALL FESCUE	24
4.2.1 Percent cover during establishment	24
4.2.2 Turfgrass vigour during establishment	24
4.2.3 Colour - Year 1	25
4.2.4 Colour - Year 2	25
4.2.5 Colour - Overall	26
4.2.6 Density - Year 1	26
4.2.7 Density - Year 2	27
4.2.8 Density - Overall	27
4.2.9 Disease Incidence - Year 1	28
4.2.10 Disease Incidence - Overall	28
4.2.11 Autumn Growth - Overall	29
4.2.12 Winter Growth - Overall	29
4.2.13 Spring Growth - Overall	30
4.2.14 Summer Growth - Overall	30
5.0 COMPANY CONTACTS	31

1.0 INTRODUCTION

The location chosen to host the trial was at Mt. Scopus Memorial College in Burwood Victoria. The trial site was located on the north east corner of the main oval. The area was generally out of play as it was well away from the 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.

There were 39 perennial ryegrass varieties sown, of which one was Victorian perennial ryegrass, and 18 tall fescue varieties. The companies participating in the trial and the varieties they submitted can be seen in table 1.

2.0 ESTABLISHMENT METHODOLOGY

2.1 Site Preparation

The preparation of the trial site involved spraying out the existing grass cover with glyphosate. The trial area was then rotary hoed in two directions to a depth of 100-150mm to incorporate the thatch layer to aid with moisture retention during the establishment period.

Five weeks prior to the seeding the entire site was fumigated using Basamid® at the recommended rate. This process was undertaken by R&R Fumigation.

2.2 Seeding

The trial was sown on the 26th September, 2006. The perennial ryegrass varieties were sown at the equivalent rate of 30 g/m² and the tall fescue varieties at 40g/m². All varieties were adjusted to allow for their differing germination rates and sown to provide 100% germination.

The plot size of the perennial ryegrass varieties was 2 square metres (2.0m x 1.0m) and the tall fescue was 1.5 sq. metres (2.0m x 0.75m). All varieties were replicated on three occasions with the exception of the Victorian perennial ryegrass variety that was only replicated twice.

All of the plots were raked after seeding and the entire area was rolled with a water filled pedestrian roller.

2.3 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 throughout the duration of the trial, although it was restricted with the implementation of water restrictions. Mt. Scopus was able to obtain an exception during the first year of the trial but during the second year when stage 3 restrictions were enforced limited the amount of water that was able to be applied and as such on some occasions there was some turf deterioration.

2.4 Mowing

The plots were first mown on the 10th November, 2006 and initially mown at a height of 50mm with a pedestrian rotary mower. The height was lowered on a weekly basis until the height of cut was equivalent to that of the rest of the oval. At that stage the plots were mature enough to be mown with the cylinder mower in conjunction with the rest of the oval. The first cut with the cylinder mower occurred on the 5th January, 2007. This had been delayed slightly due to some turfgrass injury from drought stress and the mowing height was kept a little higher with the pedestrian rotary mower to allow for complete turfgrass recovery. The varieties were mown at a height of 24mm throughout the duration of the trial.

2.5 Fertiliser Applications

Fertiliser applications were applied on an as need basis after the establishment has occurred. Generally the trial area received an annual application of 1.5kgN/100m².

Table 1: Participating Seed Companies and the varieties submitted

Company	Ryegrass Variety	Tall fescue Variety
Advanced Seed	SR 4220 SR 4420 SR 4600 Pacesetter Matilda	Grande II SR 8600
DLF Seeds	All*Star 3 Derby Xtreme Keystone 2 PR 8821 Regal 5 Tophat II	Houndog 6 Jamboree Essential Rhizing Star
HG Turf	Pennant II Pennant III Roadster Saint	Shelby
Heritage Seeds	Brightstar SLT Citation Fore Premier II LP 40C LP 4317 Pinnacle II	Barvado RTF Barlexas II Tarheel II
John Gidley & Co.	Harrier 2 Indy Cutter 2 Penguin Pinstripe Ringer Penguin II	Turbo RZ Bullseye Escalade Regiment II
PGG Wrightson	Arena 2 Atlas Experimental Fiesta 4 Integra Mach 1 1G2 Centurion	Rebel 4 Justice
Seed Force	Ragtime Dart	Constitution

Company contacts are at the back of the report.

3.0 ASSESSMENT METHODOLOGY

3.1 ESTABLISHMENT ASSESSMENTS

3.1.1 Turfgrass coverage

Turfgrass coverage was rated by visual assessment using a 0 - 9 scale, with 0 being no coverage and 9 being complete coverage.

3.1.2 Turfgrass vigour

Turfgrass vigour was a visual assessment primarily of plant height but also in general the maturity of the plant. Turfgrass vigour was assessed on two occasions for both the ryegrass and tall fescues.

3.2 REGULAR ASSESSMENTS

The duration of the trial was for two years, after the completion of the establishment period. After that time plots were assessed every two months for turfgrass colour, turfgrass density and leaf shredding. Once every season plots were assessed for growth and on an as need basis plots were rated for any sign of disease or other damage.

3.2.1 Turfgrass Colour

Turfgrass colour was a visual assessment based on how dark green the varieties looked. The scores range from 0 – being completely chlorotic to 9 – being extremely dark green.

3.2.2 Turfgrass Density

Turfgrass density was a visual assessment based on the density of leaf material. The scores range from 0 – extremely sparse to 9 – very dense cover with no space between grass leaves.

3.2.3 Leaf Shredding

Leaf shredding is a visual assessment of the amount of damage done to the tips of the leaves after mowing. Leaves that exhibit shredding have fine white strands protruding from the leaf tip. Leaf shredding was not observed in any of the tall fescue varieties and therefore there is no table of results for tall fescue leaf shredding. The scores range from 0 – no shredding to 9 – extreme shredding.

3.2.5 Incidence of Disease

Disease occurred over a two month period during the first year and was rated on a visual estimate of damage that had been caused to the surface. The scores range from 0 – no damage to 9 – complete loss of turf.

3.2.4 Seasonal Growth

Seasonal growth was assessed on one occasion per season for each of the two years. The rating is a visual estimate of the amount of growth that has occurred since mowing was ceased. Generally during the spring, summer and autumn the area was not mown for two weeks prior to the growth assessment being undertaken and for a period of three to four weeks during the winter. The scores range from 0 – no growth to 9 – excessive growth.

4.0 RESULTS

Tables

Turfgrass Colour, Turfgrass Density and Leaf Shredding

The first two tables represent the average score of the three replicates for each assessment date, with the yearly average shown in the far right column. The third table shows each year's average as well as the combined two year average and ranks each variety according to the two year average based on the LSD.

Disease Incidence

As disease only occurred over a two month period during the first year the first table represents the average score of the three replicates for each assessment date, with the average severity of disease during this period being shown in the far right column. The second table shows that average and ranks each variety according to the LSD.

Seasonal Growth

The first two columns of the table represent the average score of the three replicates for that variety on each assessment date in the first and second years. The right hand column shows the combined two year average and ranks each variety according to the two year average based on the LSD.

Significant Difference

Varieties are significantly different from each other if the difference in value between two varieties is greater than the LSD figure.

Ranking

This is illustrated using an alphabetical listing where varieties with no common letter are significantly different to each other. Where there is a common letter, the varieties are deemed to be not significantly different in their performance.

4.1 RESULTS – PERENNIAL RYEGRASS

Table 4.1.1: Percent cover of perennial ryegrass during establishment (0 - 9)

Variety	10 DAS	14 DAS	21 DAS	1 MAS	2 MAS	3 MAS
Ragtime	1.7	4.7	7.0	8.3	8.7	9.0
Victorian Rye	1.5	2.8	6.0	8.0	8.0	9.0
Penguin II	1.7	3.2	5.3	7.3	7.7	9.0
PR 8821	2.0	3.2	6.0	7.3	8.0	9.0
Indy	0.7	4.3	6.0	7.3	7.7	9.0
Tophat II	1.5	3.0	5.0	7.0	8.0	8.7
SR 4220	1.7	3.0	5.7	7.0	7.3	8.7
Dart	1.5	2.8	5.7	7.0	8.0	8.7
Pinnacle II	1.8	4.3	5.7	7.0	7.7	8.7
1G2	1.8	3.3	6.0	7.0	7.7	9.0
Penguin	1.2	2.7	5.7	7.0	8.0	8.3
Matilda	1.3	3.3	5.3	7.0	8.0	8.0
Premier II	2.2	3.8	5.7	7.0	7.7	9.0
Harrier 2	1.8	3.5	6.0	7.0	7.7	9.0
Derby Xtreme	1.7	4.3	5.3	7.0	8.0	9.0
All Star 3	2.3	4.2	6.7	7.0	8.0	9.0
Saint	1.8	3.2	5.0	6.7	7.7	8.7
Regal 5	1.7	2.8	5.0	6.7	7.7	9.0
Cutter 2	1.3	3.0	5.7	6.7	8.3	9.0
Integra	2.0	3.5	5.0	6.7	7.7	8.7
Fiesta 4	2.0	4.3	5.3	6.7	7.7	8.7
Pennant II	1.8	3.3	5.0	6.7	7.3	9.0
Citation Fore	1.7	3.2	6.0	6.7	8.0	9.0
Brightstar SLT	1.5	3.0	5.7	6.7	7.3	9.0
Keystone 2	1.3	2.5	5.0	6.7	7.3	8.7
Atlas	1.5	3.3	5.0	6.7	7.7	8.7
Roadster	2.2	3.3	4.7	6.3	7.3	9.0
Centurion	1.5	2.7	5.3	6.3	7.0	8.7
Mach 1	1.5	3.2	5.0	6.3	7.7	8.7
Pennant III	2.0	3.3	5.0	6.3	7.3	8.3
LP 40C	1.3	2.8	4.7	6.3	7.7	8.7
Experimental	2.2	3.7	5.0	6.3	7.3	8.7
Arena 2	1.7	3.7	5.3	6.3	7.3	8.3
SR 4600	1.7	3.5	5.0	6.0	7.3	8.3
Pinstripe	1.0	3.0	5.0	6.0	7.7	8.3
Ringer	1.0	2.3	4.3	5.7	7.0	8.7
Pacesetter	1.3	2.8	5.0	5.7	7.0	8.7
SR 4420	1.3	2.5	4.3	5.3	7.0	8.3
LP 4317	1.3	2.5	4.0	5.3	7.0	8.3
LSD (P<0.05)	ns	ns	ns	0.6	ns	ns

Table 4.1.2: Turfgrass vigour of perennial ryegrass during establishment (0 - 9)

Variety	10 DAS	14 DAS
Matilda	5.7	8.0
Victorian Rye	5.5	7.5
PR 8821	5.0	6.7
Saint	4.3	6.3
Roadster	3.7	6.0
Ragtime	4.0	6.0
Pinnacle II	3.7	6.0
1G2	3.3	6.0
Brightstar SLT	4.0	6.0
Experimental	4.0	6.0
Arena 2	3.7	6.0
SR 4220	3.7	5.7
Pinstripe	3.3	5.7
Centurion	3.7	5.7
Pennant III	3.7	5.7
Pennant II	3.7	5.7
Penguin	3.3	5.7
LP 40C	3.0	5.7
Premier II	4.0	5.7
Citation Fore	3.7	5.7
Harrier 2	3.7	5.7
Atlas	3.7	5.7
SR 4420	3.0	5.3
Ringer	3.3	5.3
Cutter 2	3.0	5.3
Mach 1	3.7	5.3
Pacesetter	3.7	5.3
Keystone 2	3.0	5.3
Derby Xtreme	3.3	5.3
Tophat II	3.3	5.0
Penguin II	3.7	5.0
Dart	3.3	5.0
Regal 5	3.3	5.0
Integra	3.0	5.0
Fiesta 4	3.3	5.0
LP 4317	3.0	5.0
SR 4600	3.0	4.7
All Star 3	3.7	4.7
Indy	3.0	4.0
LSD (P<0.05)	0.7	0.9

Table 4.1.3: First year results for colour of perennial ryegrass varieties (0 - 9)

Variety	16/1/07	20/3/07	22/5/07	2/7/07	10/9/07	23/11/07	Average
Pennant III	7.8	7.7	7.8	8.0	8.0	7.8	7.9
Fiesta 4	7.5	7.2	7.2	7.7	7.2	7.2	7.3
Derby Xtreme	7.3	6.8	7.2	7.5	7.2	7.3	7.2
Regal 5	7.2	6.7	7.2	7.8	7.2	7.2	7.2
Cutter 2	7.7	6.5	7.0	7.5	7.3	7.2	7.2
All Star 3	7.5	7.0	7.0	7.5	7.2	7.0	7.2
SR 4600	7.0	7.0	7.0	7.5	7.2	7.2	7.1
1G2	7.2	6.7	7.2	7.7	7.0	7.0	7.1
Pinstripe	7.5	6.0	7.2	7.7	7.0	7.2	7.1
Harrier 2	7.0	6.7	6.8	7.5	7.0	6.7	6.9
Keystone 2	7.0	6.5	6.7	7.5	7.0	6.8	6.9
Tophat II	7.0	5.8	6.8	7.7	7.2	6.8	6.9
Mach 1	7.0	6.0	7.0	7.3	7.0	7.0	6.9
SR 4420	7.0	5.8	7.0	7.5	7.0	6.8	6.9
SR 4220	7.0	6.2	6.8	7.3	7.0	6.8	6.9
Pinnacle II	7.2	5.5	6.8	7.5	7.0	7.0	6.8
Ringer	7.0	5.8	7.0	7.5	7.0	6.7	6.8
Integra	7.0	5.7	6.8	7.7	7.0	6.7	6.8
Premier II	7.0	6.0	6.7	7.2	6.8	7.2	6.8
Roadster	7.0	6.3	6.8	7.2	7.0	6.5	6.8
Dart	7.0	5.7	6.7	7.5	7.0	6.7	6.8
Pennant II	7.0	5.7	6.7	7.5	7.0	6.5	6.7
Arena 2	7.0	6.0	6.3	7.2	6.8	6.8	6.7
LP 4317	7.0	5.8	6.5	7.3	6.8	6.7	6.7
Citation Fore	6.8	5.8	6.7	7.2	7.0	6.7	6.7
Brightstar SLT	6.7	5.5	6.7	7.3	7.0	6.7	6.6
Penguin II	6.3	5.7	6.5	7.5	7.0	6.7	6.6
Experimental	7.0	6.0	6.3	7.0	6.8	6.3	6.6
Centurion	6.5	5.7	6.5	7.0	6.8	6.8	6.6
LP 40C	7.0	5.2	6.3	7.5	6.7	6.5	6.5
Pacesetter	6.5	5.3	6.3	7.0	6.8	6.3	6.4
Atlas	6.5	6.0	6.2	7.0	6.2	6.3	6.4
Penguin	6.5	5.3	6.0	7.0	6.8	6.5	6.4
PR 8821	6.3	5.5	6.3	6.7	6.5	6.3	6.3
Indy	6.0	5.3	5.8	7.0	6.5	6.0	6.1
Saint	6.2	5.0	5.8	6.5	6.2	6.0	5.9
Ragtime	6.0	5.2	5.8	6.3	6.0	6.0	5.9
Matilda	5.0	4.2	5.0	6.0	4.7	4.7	4.9
Victorian Rye	5.0	4.0	4.8	5.8	4.3	3.5	4.5
LSD (P<0.05)	0.3	0.5	0.6	0.4	0.2	0.6	0.3

Table 4.1.4: Second year results for colour of perennial ryegrass varieties (0-9)

Variety	16/1/08	19/3/08	21/5/08	1/7/08	11/9/08	28/11/08	Average
Pennant III	7.7	7.7	7.5	7.5	7.8	7.3	7.6
Derby Xtreme	7.2	7.5	7.0	7.2	7.0	6.8	7.1
SR 4600	7.3	7.0	6.7	7.2	7.0	6.8	7.0
Cutter 2	7.2	7.2	6.8	6.8	7.0	6.7	6.9
Fiesta 4	7.3	7.0	6.7	6.8	7.0	6.7	6.9
Tophat II	7.0	7.2	6.7	7.0	6.8	6.7	6.9
Regal 5	7.2	7.0	6.8	6.8	6.7	6.8	6.9
All Star 3	6.7	7.2	6.8	6.8	7.0	6.7	6.9
1G2	7.2	7.0	6.7	6.8	6.7	6.7	6.8
Pinstripe	7.0	6.8	6.5	7.0	6.7	6.5	6.8
SR 4420	6.7	6.8	6.7	6.7	6.7	6.8	6.7
Pinnacle II	7.0	6.7	6.5	6.7	6.8	6.7	6.7
Harrier 2	6.7	6.8	6.7	6.8	7.0	6.3	6.7
Mach 1	6.5	6.8	6.8	6.7	6.7	6.7	6.7
Dart	6.7	7.0	6.7	6.7	6.7	6.3	6.7
Ringer	7.0	6.7	6.7	6.7	6.5	6.5	6.7
Integra	6.8	6.8	6.7	6.7	6.3	6.7	6.7
SR 4220	6.8	6.8	6.5	6.8	6.5	6.3	6.6
Roadster	7.0	6.8	6.5	6.7	6.7	6.2	6.6
Pennant II	7.0	6.7	6.7	6.5	6.5	6.3	6.6
Penguin	6.5	6.7	6.5	7.0	6.7	6.3	6.6
Brightstar SLT	6.8	6.5	6.7	6.7	6.7	6.3	6.6
Keystone 2	7.0	6.7	6.5	6.5	6.3	6.5	6.6
LP 4317	6.5	6.5	6.5	6.8	6.5	6.3	6.5
Premier II	6.8	6.8	6.5	6.5	6.3	6.2	6.5
Experimental	6.7	6.8	6.3	6.7	6.2	6.5	6.5
Penguin II	6.7	6.5	6.7	6.7	6.5	6.0	6.5
LP 40C	6.5	6.5	6.5	6.5	6.5	6.3	6.5
Citation Fore	6.5	6.2	6.5	6.8	6.3	6.5	6.5
Centurion	6.7	6.7	6.3	6.7	6.2	6.0	6.4
Pacesetter	6.3	6.3	6.3	6.7	6.3	6.3	6.4
Arena 2	6.3	6.5	6.3	6.5	6.3	6.2	6.4
Atlas	6.7	6.0	6.2	6.3	6.3	6.5	6.3
Indy	6.3	6.3	6.2	6.5	6.3	6.2	6.3
PR 8821	6.5	6.3	6.2	6.3	6.3	5.7	6.2
Saint	6.2	6.3	6.2	6.2	6.0	5.8	6.1
Ragtime	6.0	6.0	6.0	6.3	5.7	5.7	5.9
Matilda	4.5	5.0	5.0	5.2	4.0	5.2	4.8
Victorian Rye	5.0	4.0	4.3	4.5	4.0	5.0	4.5
LSD (P<0.05)	0.5	0.5	0.4	0.5	0.5	0.5	0.3

Table 4.1.5: Overall ranking of each perennial ryegrass variety for turfgrass color after two years.

Variety	Yr 1 Ave	Yr 2 Ave	Overall	Ranking
Pennant III	7.9	7.6	7.7	a
Derby Xtreme	7.2	7.1	7.2	b
Fiesta 4	7.3	6.9	7.1	bc
SR 4600	7.1	7.0	7.1	bc
Cutter 2	7.2	6.9	7.1	bc
Regal 5	7.2	6.9	7.0	bcd
All Star 3	7.2	6.9	7.0	bcd
1G2	7.1	6.8	7.0	bcd
Pinstripe	7.1	6.8	6.9	bcde
Tophat II	6.9	6.9	6.9	bcde
Harrier 2	6.9	6.7	6.8	cdef
Mach 1	6.9	6.7	6.8	cdef
SR 4420	6.9	6.7	6.8	cdef
Pinnacle II	6.8	6.7	6.8	cdef
SR 4220	6.9	6.6	6.8	cdef
Ringer	6.8	6.7	6.8	cdef
Keystone 2	6.9	6.6	6.8	cdef
Integra	6.8	6.7	6.7	defg
Roadster	6.8	6.6	6.7	defg
Dart	6.8	6.7	6.7	defg
Premier II	6.8	6.5	6.7	defg
Pennant II	6.7	6.6	6.7	defg
Brightstar SLT	6.6	6.6	6.6	efgh
LP 4317	6.7	6.5	6.6	efgh
Citation Fore	6.7	6.5	6.6	efgh
Experimental	6.6	6.5	6.6	efgh
Penguin II	6.6	6.5	6.6	efgh
Arena 2	6.7	6.4	6.5	fghi
LP 40C	6.5	6.5	6.5	fghi
Centurion	6.6	6.4	6.5	fghi
Penguin	6.4	6.6	6.5	fghi
Pacesetter	6.4	6.4	6.4	ghi
Atlas	6.4	6.3	6.3	hij
PR 8821	6.3	6.2	6.3	hij
Indy	6.1	6.3	6.2	ijk
Saint	5.9	6.1	6.0	jk
Ragtime	5.9	5.9	5.9	k
Matilda	4.9	4.8	4.9	l
Victorian Rye	4.5	4.5	4.5	m
LSD (P<0.05)	0.3	0.3	0.3	

Table 4.1.6: First year results for density of perennial ryegrass varieties (0-9)

Variety	16/1/07	20/3/07	22/5/07	2/7/07	10/9/07	23/11/07	Average
Cutter 2	8.0	7.0	7.3	7.7	7.2	7.7	7.5
Keystone 2	7.7	7.3	7.3	7.3	7.0	7.7	7.4
Fiesta 4	7.3	7.0	7.5	7.5	7.2	7.5	7.3
Premier II	8.0	7.0	7.3	7.2	7.0	7.2	7.3
All Star 3	7.7	7.0	7.2	7.2	7.0	7.5	7.3
Derby Xtreme	6.7	7.0	7.8	7.5	7.2	7.2	7.2
Harrier 2	7.3	7.0	7.3	7.5	7.0	7.0	7.2
Citation Fore	7.3	7.0	7.0	7.2	7.0	7.3	7.1
SR 4600	7.0	7.0	6.8	7.3	7.2	7.3	7.1
SR 4220	7.3	6.7	7.0	7.2	7.0	7.3	7.1
Arena 2	7.0	7.2	7.0	7.2	7.0	7.2	7.1
Dart	7.3	6.7	6.7	7.2	7.2	7.2	7.0
Mach 1	6.7	6.7	7.2	7.3	7.0	7.3	7.0
LP 40C	7.0	6.7	6.8	7.2	7.0	7.3	7.0
PR 8821	7.7	6.5	6.7	6.8	7.0	7.2	7.0
Brightstar SLT	7.0	6.5	7.0	7.2	6.8	7.3	7.0
Regal 5	7.0	6.7	6.7	7.0	7.0	7.3	6.9
Pinnacle II	6.7	6.3	7.0	7.2	7.0	7.5	6.9
Tophat II	7.0	6.7	6.8	7.0	7.0	7.2	6.9
Penguin II	7.0	6.7	7.0	7.0	6.8	7.2	6.9
Integra	7.0	6.8	6.8	7.2	7.0	6.8	6.9
Pennant II	7.0	6.7	6.8	7.3	7.0	6.8	6.9
LP 4317	6.7	6.3	7.2	7.0	7.0	7.3	6.9
SR 4420	6.7	6.7	7.0	7.0	7.0	7.2	6.9
Atlas	7.0	6.8	7.0	7.0	7.0	6.7	6.9
Ringer	7.0	6.7	6.8	6.8	7.0	7.0	6.9
Ragtime	7.3	6.3	6.8	6.8	6.8	7.0	6.9
1G2	7.3	6.5	6.5	6.8	7.0	7.0	6.9
Pennant III	7.0	6.5	6.7	7.0	6.8	7.2	6.9
Roadster	7.0	6.8	6.8	6.7	6.8	6.8	6.8
Centurion	6.7	6.5	6.8	7.0	7.0	6.8	6.8
Pacesetter	6.7	6.5	6.7	7.0	7.0	6.8	6.8
Experimental	6.7	6.5	6.8	7.0	6.7	7.0	6.8
Indy	7.0	6.7	6.2	6.7	6.7	6.2	6.6
Penguin	7.3	6.5	5.8	5.5	6.8	6.8	6.5
Saint	6.7	6.2	6.0	6.5	6.8	6.5	6.4
Pinstripe	6.3	6.0	6.2	6.5	6.8	6.7	6.4
Victorian Rye	5.5	5.0	5.3	6.0	5.5	4.8	5.3
Matilda	4.7	4.0	4.8	6.0	5.0	4.5	4.8
LSD (P<0.05)	0.5	0.3	0.5	0.5	0.3	0.4	0.3

Table 4.1.7: Second year results for density of perennial ryegrass varieties (0-9)

Variety	16/1/08	19/3/08	21/5/08	1/7/08	11/9/08	28/11/08	Average
Derby Xtreme	7.3	7.5	7.7	7.3	7.3	7.3	7.4
SR 4600	7.7	7.3	7.3	7.0	7.2	7.5	7.3
Fiesta 4	7.3	7.3	7.5	7.3	7.0	7.3	7.3
Cutter 2	7.7	7.3	7.3	7.0	7.0	7.2	7.3
All Star 3	7.0	7.3	7.2	7.3	7.3	7.2	7.2
Keystone 2	7.5	7.3	7.0	7.0	6.8	7.2	7.1
SR 4220	7.0	7.3	7.3	7.0	7.0	7.0	7.1
Pennant III	6.5	7.3	7.3	7.2	7.2	7.2	7.1
Regal 5	7.5	7.2	7.2	7.2	6.7	6.8	7.1
PR 8821	7.3	7.2	7.2	7.3	6.8	6.7	7.1
Integra	7.2	7.0	7.2	7.0	6.8	7.2	7.1
LP 4317	7.2	7.2	7.3	7.0	6.7	7.0	7.1
Harrier 2	7.5	7.0	7.2	7.0	6.8	6.8	7.1
Arena 2	7.0	7.2	7.0	7.2	6.7	7.3	7.1
Citation Fore	7.0	7.3	7.0	7.3	6.7	7.0	7.1
Penguin II	7.2	7.0	7.2	7.0	6.8	7.0	7.0
Centurion	7.2	7.2	7.0	7.0	7.0	6.8	7.0
Atlas	7.3	7.2	7.0	7.0	6.7	7.0	7.0
Mach 1	7.0	7.2	7.5	7.2	6.8	6.3	7.0
Pennant II	7.3	7.0	7.0	7.0	6.7	7.0	7.0
SR 4420	7.2	7.2	7.0	6.8	6.8	6.8	7.0
Premier II	7.0	7.0	7.2	7.0	6.8	6.8	7.0
Tophat II	7.3	7.0	7.0	7.0	6.8	6.5	6.9
Pacesetter	6.8	7.0	7.2	6.8	6.8	6.8	6.9
LP 40C	7.0	6.7	7.2	7.2	6.5	7.0	6.9
Ragtime	7.0	6.8	7.3	7.2	6.3	6.7	6.9
Roadster	7.2	7.0	7.0	6.7	6.3	6.8	6.8
1G2	6.5	7.0	7.0	6.8	6.8	6.8	6.8
Experimental	6.8	7.0	7.2	7.0	6.5	6.5	6.8
Ringer	6.8	7.0	6.8	6.8	6.5	6.8	6.8
Brightstar SLT	6.7	6.8	7.0	6.8	6.8	6.7	6.8
Pinnacle II	6.5	6.8	6.8	6.8	6.7	6.8	6.8
Dart	6.2	7.0	6.8	6.8	6.5	6.5	6.6
Penguin	6.3	6.7	6.7	6.8	6.3	6.8	6.6
Saint	5.5	6.7	6.5	6.7	6.3	6.7	6.4
Indy	6.2	6.7	6.3	6.3	5.8	7.0	6.4
Pinstripe	5.3	6.3	6.8	6.8	6.2	6.7	6.4
Victorian Rye	5.3	5.8	5.5	5.8	4.5	4.5	5.2
Matilda	4.7	5.0	4.7	4.8	3.7	4.5	4.6
LSD (P<0.05)	0.8	0.3	0.5	0.4	0.5	0.6	0.3

Table 4.1.8: Overall ranking of each perennial ryegrass variety for turfgrass density after two years.

Variety	Yr 1 Ave	Yr 2 Ave	Overall	Ranking
Cutter 2	7.5	7.3	7.4	a
Fiesta 4	7.3	7.3	7.3	ab
Derby Xtreme	7.2	7.4	7.3	ab
Keystone 2	7.4	7.1	7.3	ab
All Star 3	7.3	7.2	7.2	abc
SR 4600	7.1	7.3	7.2	abc
Premier II	7.3	7.0	7.1	abcd
Harrier 2	7.2	7.1	7.1	abcd
SR 4220	7.1	7.1	7.1	abcd
Citation Fore	7.1	7.1	7.1	abcd
Arena 2	7.1	7.1	7.1	abcd
PR 8821	7.0	7.1	7.0	bcd
Regal 5	6.9	7.1	7.0	bcd
Mach 1	7.0	7.0	7.0	bcd
Integra	6.9	7.1	7.0	bcd
Pennant III	6.9	7.1	7.0	bcd
LP 4317	6.9	7.1	7.0	bcd
Penguin II	6.9	7.0	7.0	bcd
Pennant II	6.9	7.0	7.0	bcd
Atlas	6.9	7.0	7.0	bcd
LP 40C	7.0	6.9	7.0	bcd
Tophat II	6.9	6.9	6.9	cd
SR 4420	6.9	7.0	6.9	cd
Centurion	6.8	7.0	6.9	cd
Brightstar SLT	7.0	6.8	6.9	cd
Ragtime	6.9	6.9	6.9	cd
Pinnacle II	6.9	6.8	6.8	de
Ringer	6.9	6.8	6.8	de
1G2	6.9	6.8	6.8	de
Pacesetter	6.8	6.9	6.8	de
Dart	7.0	6.6	6.8	de
Roadster	6.8	6.8	6.8	de
Experimental	6.8	6.8	6.8	de
Penguin	6.5	6.6	6.5	ef
Indy	6.6	6.4	6.5	ef
Saint	6.4	6.4	6.4	fg
Pinstripe	6.4	6.4	6.4	fg
Victorian Rye	5.3	5.2	5.3	h
Matilda	4.8	4.6	4.7	i
LSD (P<0.05)	0.3	0.3	0.3	

Table 4.1.9: First year results for leaf shredding of perennial ryegrass varieties (0-9)

Variety	16/1/07	20/3/07	22/5/07	2/7/07	10/9/07	23/11/07	Average
Victorian Rye	3.5	3.0	1.0	0.0	0.0	2.5	1.7
Matilda	2.3	1.7	1.0	0.0	0.0	1.0	1.0
Indy	0.0	0.0	0.0	0.0	0.0	0.3	0.1
Atlas	0.0	0.0	0.0	0.0	0.0	0.3	0.1
Tophat II	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Penguin II	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SR 4600	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SR 4420	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SR 4220	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dart	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Saint	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Roadster	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Ringer	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Regal 5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Ragtime	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PR 8821	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cutter 2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pinstripe	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pinnacle II	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Centurion	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1G2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Integra	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Fiesta 4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mach 1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pennant III	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pennant II	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Penguin	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pacesetter	0.0	0.0	0.0	0.0	0.0	0.0	0.0
LP 4317	0.0	0.0	0.0	0.0	0.0	0.0	0.0
LP 40C	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Premier II	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Citation Fore	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Brightstar SLT	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Keystone 2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Harrier 2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Derby Xtreme	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Experimental	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Arena 2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All Star 3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
LSD (P<0.05)	0.1	0.1	0.2	ns	ns	0.1	0.1

Table 4.1.10: Second year results for leaf shredding of perennial ryegrass varieties (0-9)

Variety	16/1/08	19/3/08	21/5/08	1/7/08	11/9/08	28/11/08	Average
Victorian Rye	0.0	2.0	4.0	3.0	2.5	2.5	2.3
Matilda	0.0	1.7	3.0	1.7	1.7	1.3	1.6
Tophat II	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Penguin II	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SR 4600	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SR 4420	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SR 4220	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dart	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Saint	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Roadster	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Ringer	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Regal 5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Ragtime	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PR 8821	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cutter 2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pinstripe	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pinnacle II	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Centurion	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1G2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Integra	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Fiesta 4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mach 1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pennant III	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pennant II	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Penguin	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pacesetter	0.0	0.0	0.0	0.0	0.0	0.0	0.0
LP 4317	0.0	0.0	0.0	0.0	0.0	0.0	0.0
LP 40C	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Premier II	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Citation Fore	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Brightstar SLT	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Keystone 2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Indy	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Harrier 2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Derby Xtreme	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Experimental	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Atlas	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Arena 2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All Star 3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
LSD (P<0.05)	ns	0.1	0.2	0.2	0.2	0.2	0.1

Table 4.1.11: Overall ranking of each perennial ryegrass variety for leaf shredding after two years.

Variety	Yr 1 Ave	Yr 2 Ave	Overall	Ranking
Victorian Rye	1.7	2.3	2.0	a
Matilda	1.0	1.6	1.3	b
Indy	0.1	0.0	0.0	c
Atlas	0.1	0.0	0.0	c
Tophat II	0.0	0.0	0.0	c
Penguin II	0.0	0.0	0.0	c
SR 4600	0.0	0.0	0.0	c
SR 4420	0.0	0.0	0.0	c
SR 4220	0.0	0.0	0.0	c
Dart	0.0	0.0	0.0	c
Saint	0.0	0.0	0.0	c
Roadster	0.0	0.0	0.0	c
Ringer	0.0	0.0	0.0	c
Regal 5	0.0	0.0	0.0	c
Ragtime	0.0	0.0	0.0	c
PR 8821	0.0	0.0	0.0	c
Cutter 2	0.0	0.0	0.0	c
Pinstripe	0.0	0.0	0.0	c
Pinnacle II	0.0	0.0	0.0	c
Centurion	0.0	0.0	0.0	c
1G2	0.0	0.0	0.0	c
Integra	0.0	0.0	0.0	c
Fiesta 4	0.0	0.0	0.0	c
Mach 1	0.0	0.0	0.0	c
Pennant III	0.0	0.0	0.0	c
Pennant II	0.0	0.0	0.0	c
Penguin	0.0	0.0	0.0	c
Pacesetter	0.0	0.0	0.0	c
LP 4317	0.0	0.0	0.0	c
LP 40C	0.0	0.0	0.0	c
Premier II	0.0	0.0	0.0	c
Citation Fore	0.0	0.0	0.0	c
Brightstar SLT	0.0	0.0	0.0	c
Keystone 2	0.0	0.0	0.0	c
Harrier 2	0.0	0.0	0.0	c
Derby Xtreme	0.0	0.0	0.0	c
Experimental	0.0	0.0	0.0	c
Arena 2	0.0	0.0	0.0	c
All Star 3	0.0	0.0	0.0	c
LSD (P<0.05)	0.1	0.1	0.1	

Table 4.1.12: First year results for Incidence of disease in perennial ryegrass varieties (0-9)

Disease only occurred during a two month period over autumn in the first year and was rated on a visual estimate of damage that had been caused to the surface. The disease pathogens present were *Curvularia* spp. and *Drechslera* spp. The scores range from 0 – no damage to 9 – complete loss of turf.

Variety	18/4/07	24/4/07	22/5/07	Average
Penguin	3.7	5.3	4.0	4.3
Saint	2.3	3.3	2.8	2.8
Indy	1.0	3.0	2.7	2.2
Pinstripe	1.3	2.2	2.0	1.8
PR 8821	0.2	2.0	0.7	0.9
Victorian Rye	0.0	1.8	1.0	0.9
Roadster	0.0	1.5	1.0	0.8
Matilda	0.0	1.8	0.7	0.8
Pennant III	0.2	1.3	0.7	0.7
Pennant II	0.3	0.5	1.0	0.6
Ragtime	0.2	1.2	0.3	0.6
1G2	0.3	0.8	0.3	0.5
Penguin II	0.0	0.8	0.3	0.4
Dart	0.0	0.8	0.2	0.3
LP 40C	0.0	0.5	0.5	0.3
Brightstar SLT	0.0	0.7	0.3	0.3
Pinnacle II	0.2	0.5	0.2	0.3
Atlas	0.0	0.2	0.7	0.3
Tophat II	0.0	0.5	0.2	0.2
Ringer	0.0	0.3	0.3	0.2
Centurion	0.0	0.3	0.3	0.2
Integra	0.0	0.3	0.2	0.2
Pacesetter	0.0	0.3	0.2	0.2
LP 4317	0.0	0.3	0.2	0.2
Experimental	0.0	0.5	0.0	0.2
Regal 5	0.0	0.2	0.2	0.1
SR 4220	0.0	0.2	0.0	0.1
Premier II	0.0	0.2	0.0	0.1
Citation Fore	0.0	0.2	0.0	0.1
Keystone 2	0.0	0.0	0.2	0.1
Harrier 2	0.0	0.2	0.0	0.1
SR 4600	0.0	0.0	0.0	0.0
SR 4420	0.0	0.0	0.0	0.0
Cutter 2	0.0	0.0	0.0	0.0
Fiesta 4	0.0	0.0	0.0	0.0
Mach 1	0.0	0.0	0.0	0.0
Derby Xtreme	0.0	0.0	0.0	0.0
Arena 2	0.0	0.0	0.0	0.0
All Star 3	0.0	0.0	0.0	0.0
LSD (P<0.05)	0.6	1.0	1.0	0.7

Table 4.1.13: Overall ranking for incidence of disease based on the one occasion during the first year when *Curvularia* spp. and *Drechslera* spp. were identified.

Variety	Yr 1 Ave	Ranking
Penguin	4.3	a
Saint	2.8	b
Indy	2.2	bc
Pinstripe	1.8	c
PR 8821	0.9	d
Victorian Rye	0.9	d
Roadster	0.8	de
Matilda	0.8	de
Pennant III	0.7	def
Pennant II	0.6	def
Ragtime	0.6	def
1G2	0.5	def
Penguin II	0.4	def
Dart	0.3	def
LP 40C	0.3	def
Brightstar SLT	0.3	def
Pinnacle II	0.3	def
Atlas	0.3	def
Tophat II	0.2	def
Ringer	0.2	def
Centurion	0.2	def
Integra	0.2	def
Pacesetter	0.2	def
LP 4317	0.2	def
Experimental	0.2	def
Regal 5	0.1	ef
SR 4220	0.1	ef
Premier II	0.1	ef
Citation Fore	0.1	ef
Keystone 2	0.1	ef
Harrier 2	0.1	ef
SR 4600	0.0	f
SR 4420	0.0	f
Cutter 2	0.0	f
Fiesta 4	0.0	f
Mach 1	0.0	f
Derby Xtreme	0.0	f
Arena 2	0.0	f
All Star 3	0.0	f
LSD (P<0.05)	0.7	

Table 4.1.14: Autumn growth of perennial ryegrass varieties in the first and second years

Variety	Yr 1	Yr 2	Overall	Ranking
Matilda	7.0	7.0	7.0	a
Victorian Rye	6.0	6.3	6.1	b
PR 8821	5.3	4.3	4.8	c
SR 4600	5.0	4.5	4.8	c
SR 4220	5.0	4.5	4.8	c
Centurion	4.7	4.8	4.8	c
Regal 5	4.7	4.5	4.6	cd
Brightstar SLT	4.3	4.8	4.6	cd
Tophat II	4.3	4.7	4.5	cde
Premier II	4.7	4.3	4.5	cde
Pennant II	4.3	4.7	4.5	cde
Arena 2	4.7	4.3	4.5	cde
Citation Fore	4.7	4.3	4.5	cde
Roadster	4.3	4.5	4.4	cdef
Ringer	4.3	4.5	4.4	cdef
Ragtime	4.3	4.5	4.4	cdef
1G2	4.3	4.5	4.4	cdef
SR 4420	4.0	4.7	4.3	cdef
Dart	4.0	4.7	4.3	cdef
Pacesetter	4.0	4.7	4.3	cdef
Penguin II	4.3	4.3	4.3	cdef
LP 4317	4.3	4.3	4.3	cdef
Indy	3.7	5.0	4.3	cdef
Pinnacle II	4.0	4.5	4.3	cdef
Pennant III	4.0	4.5	4.3	cdef
Experimental	4.0	4.5	4.3	cdef
Atlas	3.7	4.7	4.2	cdef
Cutter 2	4.0	4.3	4.2	cdef
LP 40C	4.0	4.3	4.2	cdef
Keystone 2	4.0	4.3	4.2	cdef
Derby Xtreme	4.0	4.3	4.2	cdef
Fiesta 4	4.0	4.2	4.1	def
Mach 1	4.0	4.2	4.1	def
All Star 3	4.0	4.2	4.1	def
Saint	3.7	4.5	4.1	def
Integra	3.7	4.5	4.1	def
Harrier 2	3.7	4.3	4.0	def
Pinstripe	3.3	4.5	3.9	ef
Penguin	3.3	4.3	3.8	f
LSD (P<0.05)	0.9	0.5	0.6	

Table 4.1.15: Winter growth of perennial ryegrass varieties in the first and second years

Variety	Yr 1	Yr 2	Overall	Ranking
Matilda	7.7	7.3	7.5	a
Victorian Rye	6.5	5.8	6.1	b
Atlas	5.7	5.0	5.3	c
PR 8821	5.3	5.3	5.3	c
SR 4600	5.0	5.2	5.1	cd
Saint	5.2	5.0	5.1	cd
1G2	5.0	5.2	5.1	cd
Pacesetter	5.0	5.2	5.1	cd
Indy	5.0	5.2	5.1	cd
Centurion	5.3	4.8	5.1	cd
SR 4420	5.0	5.0	5.0	cde
Pennant II	5.0	5.0	5.0	cde
Harrier 2	5.0	5.0	5.0	cde
Ragtime	4.7	5.2	4.9	cdef
Derby Xtreme	4.7	5.2	4.9	cdef
Integra	5.0	4.8	4.9	cdef
Arena 2	5.0	4.8	4.9	cdef
Premier II	4.7	5.0	4.8	def
LP 4317	4.7	5.0	4.8	def
Penguin II	4.7	4.8	4.8	def
SR 4220	4.7	4.8	4.8	def
Dart	4.7	4.8	4.8	def
Pinnacle II	4.3	5.2	4.8	def
Fiesta 4	4.7	4.8	4.8	def
Mach 1	4.7	4.8	4.8	def
LP 40C	4.7	4.8	4.8	def
Brightstar SLT	4.7	4.8	4.8	def
Keystone 2	4.7	4.8	4.8	def
Tophat II	4.7	4.7	4.7	def
Ringer	4.7	4.7	4.7	def
All Star 3	4.3	5.0	4.7	def
Citation Fore	4.7	4.5	4.6	ef
Roadster	4.3	4.8	4.6	ef
Regal 5	4.3	4.8	4.6	ef
Cutter 2	4.3	4.8	4.6	ef
Pennant III	4.3	4.8	4.6	ef
Experimental	4.3	4.8	4.6	ef
Pinstripe	4.3	4.7	4.5	f
Penguin	4.0	5.0	4.5	f
LSD (P<0.05)	0.7	0.5	0.4	

Table 4.1.16: Spring growth of perennial ryegrass varieties in the first and second years

Variety	Yr 1	Yr 2	Overall	Ranking
Victorian Rye	7.8	7.5	7.6	a
Matilda	7.3	7.2	7.3	ab
Indy	6.5	5.5	6.0	c
Saint	6.0	5.8	5.9	cd
Experimental	6.0	5.8	5.9	cd
Centurion	6.0	5.7	5.8	cde
Pennant II	6.2	5.5	5.8	cde
Tophat II	5.8	5.8	5.8	cde
SR 4420	6.2	5.2	5.7	cdef
Pacesetter	5.8	5.5	5.7	cdef
Atlas	6.0	5.3	5.7	cdef
Roadster	5.5	5.7	5.6	cdefg
Ringer	6.0	5.2	5.6	cdefg
PR 8821	5.7	5.5	5.6	cdefg
Penguin	5.8	5.3	5.6	cdefg
Penguin II	5.8	5.2	5.5	cdefgh
SR 4220	5.8	5.2	5.5	cdefgh
Dart	5.5	5.3	5.4	defghi
1G2	5.5	5.3	5.4	defghi
Mach 1	6.0	4.8	5.4	defghi
LP 4317	5.5	5.3	5.4	defghi
Brightstar SLT	5.7	5.0	5.3	efghi
Harrier 2	5.5	5.2	5.3	efghi
Citation Fore	5.7	5.0	5.3	efghi
All Star 3	5.7	5.0	5.3	efghi
Regal 5	5.3	5.3	5.3	efghi
Premier II	5.5	5.0	5.3	efghi
Arena 2	5.8	4.7	5.3	efghi
SR 4600	5.7	4.7	5.2	fghi
Keystone 2	5.2	5.2	5.2	fghi
Ragtime	5.3	5.0	5.2	fghi
Integra	5.5	4.8	5.2	fghi
LP 40C	4.8	5.5	5.2	fghi
Pinnacle II	5.0	5.2	5.1	ghi
Cutter 2	5.3	4.8	5.1	ghi
Fiesta 4	5.3	4.8	5.1	ghi
Derby Xtreme	5.3	4.8	5.1	ghi
Pennant III	4.8	5.2	5.0	hi
Pinstripe	4.8	5.0	4.9	i
LSD (P<0.05)	0.5	0.7	0.5	

Table 4.1.17: Summer growth of perennial ryegrass varieties in the first and second years

Variety	Yr 1	Yr 2	Overall	Ranking
Victorian Rye	7.3	7.5	7.4	a
Matilda	7.3	7.3	7.3	a
Ragtime	6.0	5.7	5.8	b
Pacesetter	6.0	5.7	5.8	b
Indy	6.0	5.7	5.8	b
Saint	5.7	5.7	5.7	bc
Experimental	5.7	5.7	5.7	bc
Atlas	5.5	5.8	5.7	bc
PR 8821	5.7	5.5	5.6	bcd
SR 4220	5.3	5.7	5.5	bcde
Brightstar SLT	5.5	5.5	5.5	bcde
Arena 2	5.7	5.3	5.5	bcde
SR 4600	5.5	5.3	5.4	cdef
Ringer	5.3	5.5	5.4	cdef
Centurion	5.3	5.5	5.4	cdef
Pennant II	5.5	5.3	5.4	cdef
Tophat II	5.3	5.3	5.3	defg
SR 4420	5.3	5.3	5.3	defg
1G2	5.3	5.3	5.3	defg
Mach 1	5.3	5.3	5.3	defg
Penguin II	5.2	5.3	5.3	defg
Pinstripe	5.2	5.3	5.3	defg
Integra	5.2	5.3	5.3	defg
Fiesta 4	5.0	5.5	5.3	defg
LP 4317	5.2	5.3	5.3	defg
Keystone 2	5.2	5.3	5.3	defg
Harrier 2	5.2	5.3	5.3	defg
Derby Xtreme	5.0	5.5	5.3	defg
Citation Fore	5.2	5.3	5.3	defg
Roadster	5.2	5.2	5.2	efg
Premier II	5.2	5.2	5.2	efg
Dart	5.0	5.2	5.1	fg
Cutter 2	5.2	5.0	5.1	fg
LP 40C	5.0	5.2	5.1	fg
All Star 3	5.0	5.2	5.1	fg
Regal 5	5.0	5.0	5.0	g
Pinnacle II	5.0	5.0	5.0	g
Pennant III	4.8	5.2	5.0	g
Penguin	5.0	5.0	5.0	g
LSD (P<0.05)	0.5	0.5	0.3	

4.2 RESULTS – TALL FESCUE

Table 4.2.1: Percent cover of tall fescue during establishment (0 - 9)

Variety	14 DAS	21 DAS	1 MAS	2 MAS	3 MAS
Jamboree	1.7	3.3	5.0	7.0	8.3
Constitution	2.0	3.3	4.7	7.0	8.0
Grande II	1.3	3.3	5.0	6.7	8.0
Bullseye	1.8	3.7	5.3	6.7	8.0
Essential	1.7	3.0	4.3	6.3	8.0
Tarheel II	1.7	3.3	5.0	6.0	8.0
Regiment II	1.7	3.0	4.7	6.7	7.7
Barlexas II	1.7	3.0	4.3	6.7	7.7
SR 8600	1.3	3.3	5.3	6.3	7.7
RTF	1.0	2.7	4.3	6.0	7.7
Barvado	1.7	3.3	4.7	6.0	7.7
Rebel 4	1.7	3.0	4.7	7.0	7.3
Shelby	1.3	2.7	4.7	6.3	7.3
Turbo RZ	1.3	2.7	4.7	6.3	7.3
Justice	1.7	2.7	4.3	6.0	7.3
Hounddog 6	0.8	2.0	3.3	5.3	7.3
Rhizing Star	1.7	3.3	4.3	5.7	7.0
Escalade	1.5	2.7	4.0	6.0	6.7
LSD (P<0.05)	ns	ns	ns	ns	0.7

Table 4.2.2: Turfgrass vigour of tall fescue during establishment (0 - 9)

Variety	21 DAS	1 MAS
Rhizing Star	4.3	5.3
Escalade	3.7	5.3
Shelby	4.0	5.0
Constitution	4.7	5.0
Essential	4.0	5.0
Barlexas II	4.0	5.0
Justice	3.7	4.7
Jamboree	3.3	4.7
Grande II	4.3	4.7
Barvado	4.3	4.7
Rebel 4	4.0	4.7
Tarheel II	4.7	4.3
SR 8600	4.7	4.3
Hounddog 6	3.3	4.3
RTF	4.0	4.3
Bullseye	4.7	4.3
Regiment II	4.0	4.0
Turbo RZ	3.7	4.0
LSD (P<0.05)	ns	ns

Table 4.2.3: First year results for colour of tall fescue varieties (0-9)

Variety	16/1/07	20/3/07	22/5/07	2/7/07	10/9/07	23/11/07	Average
Regiment II	6.0	6.0	6.5	5.5	6.7	7.2	6.3
Turbo RZ	6.3	6.0	6.3	5.5	6.5	7.2	6.3
Rebel 4	6.0	6.3	6.0	5.5	6.5	7.2	6.3
Shelby	6.0	6.2	6.0	5.5	6.5	7.2	6.2
Hounddog 6	6.0	6.0	6.3	5.5	6.5	7.0	6.2
Bullseye	6.0	6.0	6.0	5.5	6.5	7.2	6.2
Jamboree	6.0	6.2	6.0	5.3	6.5	7.0	6.2
Constitution	6.0	5.5	6.2	5.5	6.5	7.2	6.1
Justice	6.0	5.5	6.2	5.7	6.5	7.0	6.1
Barlexas II	6.0	6.0	5.8	5.5	6.5	7.0	6.1
Barvado	6.0	5.7	6.0	5.5	6.5	7.0	6.1
Essential	6.3	5.7	6.0	5.5	6.5	6.7	6.1
SR 8600	6.0	5.5	6.0	5.5	6.5	7.0	6.1
RTF	6.0	5.7	6.0	5.5	6.3	6.8	6.1
Grande II	6.0	5.5	6.0	5.3	6.5	7.0	6.1
Escalade	6.0	5.3	6.0	5.5	6.5	6.8	6.0
Tarheel II	6.0	5.5	5.8	5.3	6.5	6.8	6.0
Rhizing Star	6.0	5.7	6.0	5.0	6.3	6.7	5.9
LSD (P<0.05)	ns	ns	0.3	0.2	ns	ns	ns

Table 4.2.4: Second year results for colour of tall fescue varieties (0-9)

Variety	16/1/08	19/3/08	21/5/08	1/7/08	11/9/08	28/11/08	Average
Regiment II	7.3	6.7	6.8	6.8	6.8	6.3	6.8
Turbo RZ	6.8	6.7	7.0	6.8	7.0	6.3	6.8
Hounddog 6	7.0	6.7	6.8	6.7	6.8	6.2	6.7
Shelby	6.5	6.8	7.0	6.7	6.8	6.2	6.7
Justice	6.7	6.7	7.0	6.7	6.8	6.2	6.7
Barvado	6.5	6.7	7.0	6.8	6.8	6.2	6.7
Rebel 4	6.7	6.8	6.8	6.7	6.7	6.3	6.7
Bullseye	6.5	6.5	7.0	6.8	6.8	6.3	6.7
Grande II	6.8	6.5	7.0	6.5	6.8	6.2	6.6
Constitution	6.5	6.5	6.7	6.8	6.8	6.3	6.6
Essential	6.5	6.7	7.0	6.7	6.8	6.0	6.6
RTF	6.7	6.5	6.8	6.5	6.8	6.3	6.6
Jamboree	6.5	6.7	7.0	6.5	6.7	6.2	6.6
Barlexas II	6.7	6.7	6.8	6.5	6.7	6.0	6.6
SR 8600	6.7	6.7	6.7	6.5	6.5	6.2	6.5
Rhizing Star	6.5	6.5	6.8	6.5	6.5	6.3	6.5
Tarheel II	6.5	6.5	6.8	6.3	6.7	6.2	6.5
Escalade	6.5	6.5	6.8	6.5	6.5	6.2	6.5
LSD (P<0.05)	0.3	ns	ns	ns	ns	ns	ns

Table 4.2.5: Overall ranking of each tall fescue variety for turfgrass colour after two years.

Variety	Yr 1 Ave	Yr 2 Ave	Overall	Ranking
Regiment II	6.3	6.8	6.6	a
Turbo RZ	6.3	6.8	6.5	ab
Hounddog 6	6.2	6.7	6.5	ab
Rebel 4	6.3	6.7	6.5	ab
Shelby	6.2	6.7	6.4	abc
Bullseye	6.2	6.7	6.4	abc
Justice	6.1	6.7	6.4	abc
Barvado	6.1	6.7	6.4	abc
Constitution	6.1	6.6	6.4	abc
Jamboree	6.2	6.6	6.4	abc
Essential	6.1	6.6	6.4	abc
Grande II	6.1	6.6	6.3	bc
Barlexas II	6.1	6.6	6.3	bc
RTF	6.1	6.6	6.3	bc
SR 8600	6.1	6.5	6.3	bc
Escalade	6.0	6.5	6.3	bc
Tarheel II	6.0	6.5	6.3	bc
Rhizing Star	5.9	6.5	6.2	c
LSD (P<0.05)	ns	ns	0.2	

Table 4.2.6: First year results for density of tall fescue varieties (0-9)

Variety	16/1/07	20/3/07	22/5/07	2/7/07	10/9/07	23/11/07	Average
Jamboree	7.3	6.8	7.2	7.7	7.3	7.5	7.3
Bullseye	6.7	7.2	7.3	7.7	6.8	7.7	7.2
Essential	6.7	6.8	6.8	7.5	7.2	7.5	7.1
Turbo RZ	7.0	6.5	6.5	7.2	6.8	7.2	6.9
Rebel 4	7.0	6.8	6.2	7.2	6.8	7.0	6.8
Tarheel II	7.0	6.5	6.3	6.8	6.5	6.8	6.7
SR 8600	6.7	6.5	6.2	7.0	6.5	7.0	6.6
Grande II	7.0	6.3	6.0	7.0	6.5	7.0	6.6
Barvado	6.3	6.3	6.2	7.2	6.7	7.2	6.6
Justice	6.3	6.2	6.2	7.0	7.0	7.0	6.6
Shelby	6.3	6.5	6.2	6.8	6.7	7.0	6.6
Constitution	6.7	6.5	6.0	6.8	6.5	7.0	6.6
Regiment II	6.7	6.5	6.0	6.8	6.7	6.8	6.6
Barlexas II	6.7	6.7	6.0	6.7	6.5	7.0	6.6
Escalade	6.0	6.2	6.3	7.0	6.7	7.0	6.5
Hounddog 6	6.0	6.3	6.0	6.7	6.5	7.0	6.4
RTF	6.3	6.3	6.0	6.7	6.3	6.8	6.4
Rhizing Star	5.7	6.3	6.0	7.0	6.3	7.0	6.4
LSD (P<0.05)	0.5	ns	0.3	0.4	0.4	0.3	0.3

Table 4.2.7: Second year results for density of tall fescue varieties (0-9)

Variety	16/1/08	19/3/08	21/5/08	1/7/08	11/9/08	28/11/08	Average
Bullseye	7.7	7.2	7.7	7.5	7.5	7.2	7.4
Jamboree	7.8	7.2	7.5	7.2	7.3	7.2	7.4
Essential	7.2	7.0	7.8	7.2	7.5	7.3	7.3
Justice	6.8	6.5	6.8	7.0	6.7	6.3	6.7
Turbo RZ	6.8	6.5	6.7	6.8	6.8	6.3	6.7
Escalade	6.7	6.5	6.8	6.7	6.7	6.3	6.6
Rebel 4	6.7	6.7	6.8	6.7	6.7	6.2	6.6
Grande II	6.8	6.5	6.7	6.5	6.7	6.3	6.6
Tarheel II	6.8	6.5	6.5	6.7	6.5	6.2	6.5
Barvado	6.7	6.5	6.5	6.7	6.7	6.0	6.5
SR 8600	6.7	6.5	6.7	6.5	6.5	6.0	6.5
Regiment II	6.7	6.5	6.7	6.5	6.5	6.0	6.5
Hounddog 6	6.5	6.3	6.5	6.7	6.5	6.3	6.5
Barlexas II	6.7	6.5	6.7	6.5	6.5	6.0	6.5
Shelby	6.7	6.3	6.7	6.5	6.5	5.8	6.4
Constitution	6.7	6.2	6.5	6.5	6.5	6.0	6.4
Rhizing Star	6.5	6.3	6.3	6.3	6.5	6.0	6.3
RTF	6.3	6.3	6.5	6.3	6.3	6.0	6.3
LSD (P<0.05)	0.5	0.4	0.4	0.4	0.4	0.4	0.3

Table 4.2.8: Overall ranking of each tall fescue variety for turfgrass density after two years.

Variety	Yr 1 Ave	Yr 2 Ave	Overall	Ranking
Jamboree	7.3	7.4	7.3	a
Bullseye	7.2	7.4	7.3	a
Essential	7.1	7.3	7.2	a
Turbo RZ	6.9	6.7	6.8	b
Rebel 4	6.8	6.6	6.7	bc
Justice	6.6	6.7	6.7	bc
Grande II	6.6	6.6	6.6	bc
Tarheel II	6.7	6.5	6.6	bc
Barvado	6.6	6.5	6.6	bc
Escalade	6.5	6.6	6.6	bc
SR 8600	6.6	6.5	6.6	bc
Regiment II	6.6	6.5	6.5	bc
Barlexas II	6.6	6.5	6.5	bc
Shelby	6.6	6.4	6.5	bc
Constitution	6.6	6.4	6.5	bc
Hounddog 6	6.4	6.5	6.4	c
Rhizing Star	6.4	6.3	6.4	c
RTF	6.4	6.3	6.4	c
LSD (P<0.05)	0.3	0.3	0.3	

Table 4.2.9: First year results for incidence of disease in tall fescue varieties (0-9)

Variety	24/4/07	22/5/07	Average
Hounddog 6	1.5	0.7	1.1
Barlexas II	0.8	0.0	0.4
Regiment II	0.7	0.0	0.3
Tarheel II	0.5	0.0	0.3
Justice	0.5	0.0	0.3
RTF	0.5	0.0	0.3
Rebel 4	0.5	0.0	0.3
SR 8600	0.3	0.0	0.2
Shelby	0.2	0.0	0.1
Constitution	0.2	0.0	0.1
Grande II	0.2	0.0	0.1
Escalade	0.2	0.0	0.1
Rhizing Star	0.0	0.0	0.0
Essential	0.0	0.0	0.0
Jamboree	0.0	0.0	0.0
Barvado	0.0	0.0	0.0
Bullseye	0.0	0.0	0.0
Turbo RZ	0.0	0.0	0.0
LSD (P<0.05)	ns	ns	ns

Table 4.2.10: Overall ranking for incidence of disease based on the one occasion during the first year when *Curvularia* spp. and *Drechslera* spp. were identified.

Variety	Average	Ranking
Hounddog 6	1.1	a
Barlexas II	0.4	a
Regiment II	0.3	a
Tarheel II	0.3	a
Justice	0.3	a
RTF	0.3	a
Rebel 4	0.3	a
SR 8600	0.2	a
Shelby	0.1	a
Constitution	0.1	a
Grande II	0.1	a
Escalade	0.1	a
Rhizing Star	0.0	a
Essential	0.0	a
Jamboree	0.0	a
Barvado	0.0	a
Bullseye	0.0	a
Turbo RZ	0.0	a
LSD (P<0.05)	ns	

Table 4.2.11: Autumn growth of tall fescue varieties in the first and second years.

Variety	Yr 1	Yr 2	Overall	Ranking
RTF	5.3	4.8	5.1	a
Tarheel II	5.0	4.5	4.8	ab
SR 8600	4.7	4.5	4.6	bc
Constitution	4.7	4.5	4.6	bc
Barlexas II	4.7	4.5	4.6	bc
Rhizing Star	4.3	4.7	4.5	bcd
Grande II	4.3	4.5	4.4	bcde
Escalade	4.3	4.5	4.4	bcde
Turbo RZ	4.3	4.5	4.4	bcde
Barvado	4.0	4.7	4.3	cde
Justice	4.3	4.3	4.3	cde
Shelby	4.0	4.5	4.3	cde
Regiment II	4.0	4.5	4.3	cde
Rebel 4	4.0	4.5	4.3	cde
Houndog 6	4.0	4.3	4.2	cdef
Jamboree	4.0	4.2	4.1	def
Essential	4.0	4.0	4.0	ef
Bullseye	3.7	4.0	3.8	f
LSD (P<0.05)	0.8	0.3	0.4	

Table 4.2.12: Winter growth of tall fescue varieties in the first and second years.

Variety	Yr 1	Yr 2	Overall	Ranking
RTF	5.0	5.3	5.2	a
Grande II	4.0	5.0	4.5	b
SR 8600	4.0	4.7	4.3	bc
Rhizing Star	4.0	4.7	4.3	bc
Tarheel II	4.0	4.5	4.3	bc
Shelby	4.0	4.5	4.3	bc
Constitution	4.0	4.5	4.3	bc
Regiment II	4.0	4.5	4.3	bc
Justice	4.0	4.5	4.3	bc
Essential	4.0	4.5	4.3	bc
Houndog 6	4.0	4.5	4.3	bc
Barlexas II	4.0	4.5	4.3	bc
Barvado	4.0	4.5	4.3	bc
Escalade	4.0	4.5	4.3	bc
Rebel 4	4.0	4.5	4.3	bc
Turbo RZ	4.0	4.5	4.3	bc
Bullseye	4.0	4.3	4.2	c
Jamboree	4.0	4.2	4.1	c
LSD (P<0.05)	0.2	0.3	0.2	

Table 4.2.13: Spring growth of tall fescue varieties in the first and second years.

Variety	Yr 1	Yr 2	Overall	Ranking
RTF	5.8	6.0	5.9	a
Rhizing Star	5.7	5.8	5.8	a
Barlexas II	5.5	5.8	5.7	a
Shelby	5.5	5.7	5.6	ab
Regiment II	5.5	5.7	5.6	ab
Constitution	5.7	5.0	5.3	bc
Grande II	5.5	5.2	5.3	bc
Rebel 4	5.5	5.2	5.3	bc
Tarheel II	5.3	5.3	5.3	bc
SR 8600	5.3	5.2	5.3	bc
Justice	5.5	5.0	5.3	bc
Hounddog 6	5.3	5.2	5.3	bc
Barvado	5.5	5.0	5.3	bc
Turbo RZ	5.5	5.0	5.3	bc
Jamboree	5.5	4.8	5.2	c
Escalade	5.5	4.8	5.2	c
Essential	5.5	4.5	5.0	c
Bullseye	5.3	4.7	5.0	c
LSD (P<0.05)	ns	0.5	0.3	

Table 4.2.14: Summer growth of tall fescue varieties in the first and second years.

Variety	Yr 1	Yr 2	Overall	Ranking
Shelby	6.3	5.8	6.1	a
Constitution	6.0	6.0	6.0	ab
RTF	6.2	5.8	6.0	ab
Barlexas II	6.0	6.0	6.0	ab
SR 8600	6.0	5.8	5.9	abc
Turbo RZ	6.0	5.8	5.9	abc
Rhizing Star	5.8	5.8	5.8	abcd
Regiment II	5.8	5.8	5.8	abcd
Grande II	6.0	5.5	5.8	abcd
Tarheel II	5.7	5.7	5.7	bcd
Barvado	5.7	5.7	5.7	bcd
Rebel 4	5.8	5.5	5.7	bcd
Escalade	5.7	5.5	5.6	cde
Justice	5.5	5.5	5.5	de
Essential	5.3	5.7	5.5	de
Hounddog 6	5.5	5.5	5.5	de
Jamboree	5.2	5.5	5.3	e
Bullseye	5.2	5.5	5.3	e
LSD (P<0.05)	0.5	0.3	0.3	

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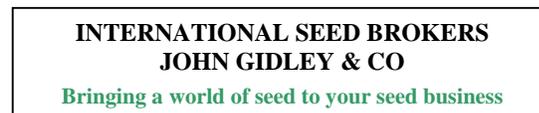
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