

BERMUDAGRASS TRIAL

MATTHEW OLIVER

GROUNDS MANAGER
QUEENSLAND SPORT & ATHLETICS CENTRE

STADIUMS QUEENSLAND



Queensland
Tennis Centre

BERMUDAGRASS TRIAL

QSAC Location

- 11km South of Brisbane CBD
- 25km South West of Brisbane Airport
- 60km North of the Gold Coast
- 27km inland



BERMUDAGRASS TRIAL

Aerial Photo May 2021
Nearmap.com.au



BERMUDAGRASS TRIAL

Why Trial?

- Potential Resurface/Rebuild
- 2023 FIFA Womens' World Cup
- 2032 Brisbane Olympics?
- How does our existing surface compare to other varieties?

Format of Presentation

- Overview of grasses
- Method
- Testing/trials
- Layout
- Timeline
- Testing Tools
- Sample Monthly Data
- Ryegrass Overseed
- Graphs/Data from trials
- Overall 7-month observations
- Time for Questions



BERMUDAGRASS TRIAL

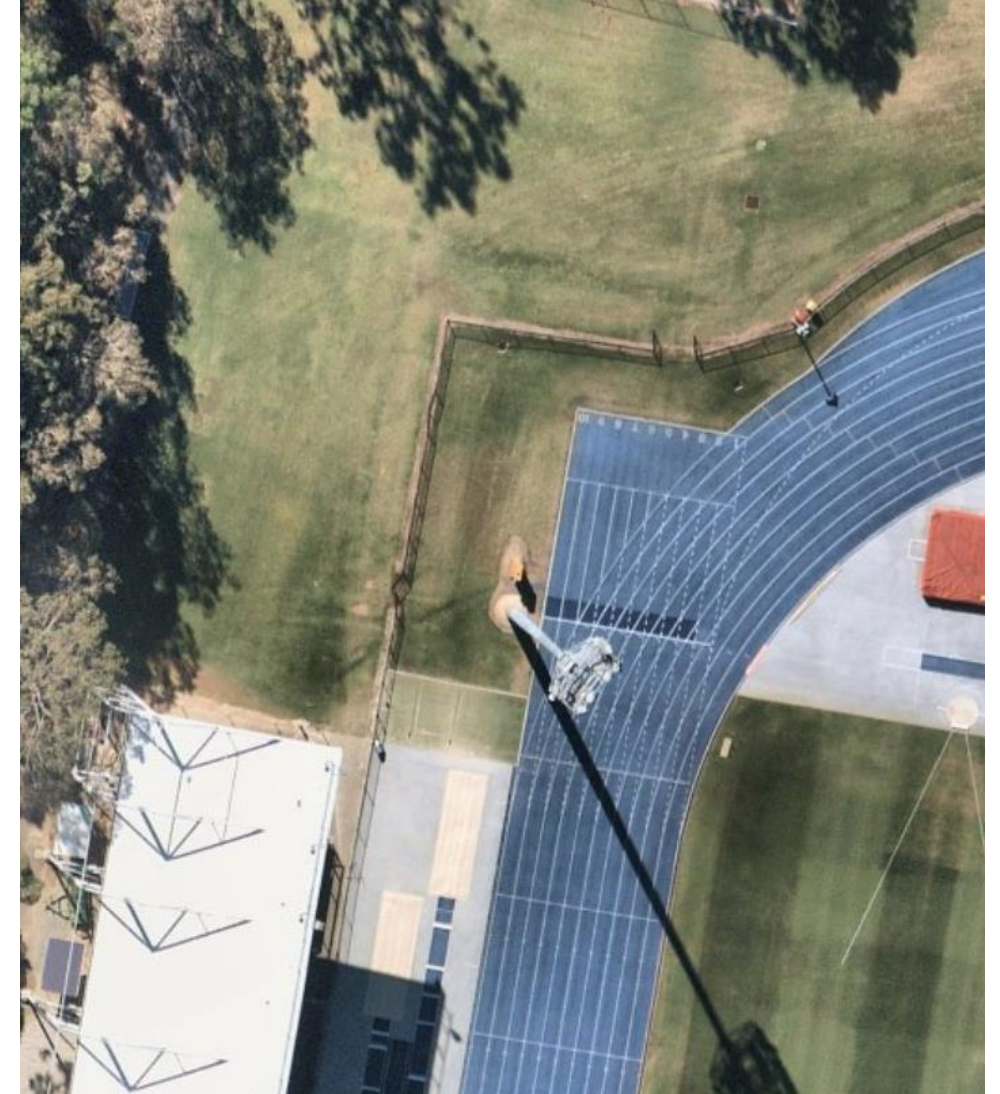
Located to the North-West of the Qld State Athletics Facility

Trial site: Clay-Loam base, 70mm sand cap. Surface Drainage only.

Rainbird IQ4 Irrigation system with Rainbird 8005 sprinkler heads.

8 grasses sourced from growers locally and interstate:

- **Bottom Line Wintergreen** (*C.dactylon*) existing grass - Logan River.
- **Legend** (*C.dactylon*) - Sunshine Coast.
- **TifTuf** (*C.dactylon* x *C.transvallensis*) - Sunshine Coast.
- **AgriDark** (*C.dactylon* x *C.transvallensis*) - Scenic Rim.
- **McMaugh Reselected Wintergreen** (*C.dactylon*) - Gold Coast.
- **Santa Ana** (*C.dactylon* x *C.transvallensis*) - Melbourne.
- **Star Express** (*C.dactylon*) - Gold Coast.
- **Tahoma 31** (*C.dactylon* x *C.transvallensis*) - Sydney. Observational purposes only due to late planting.





Sprayed out Early July 2020



Filled with sand and
levelled Mid-August 2020



Excavated Early August 2020



Turf laid August 25th 2020

BERMUDAGRASS TRIAL

The trial will run for an initial 12 months with an option to extend further. Grasses planted late August 2020.

Some of the tests which will be conducted are:

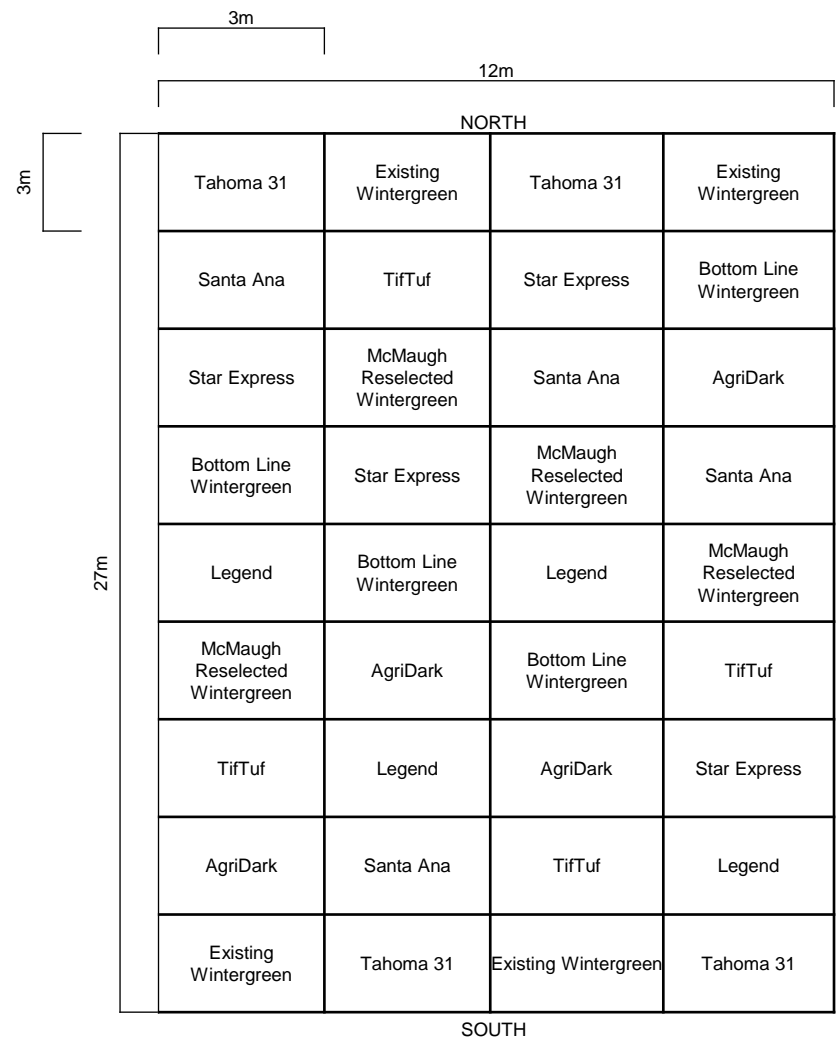
- Ryegrass seed application and chemical removal.
- Scarification tolerance and recovery.
- Wear tolerance using a walk-behind wear machine (June).
- Applications of Plant Growth Regulators.
- Removal of turf wedge to watch recovery.

Some of the assessments to be undertaken are:

- Turf Colour.
- Turf Quality.
- Thatch and Rhizome depth.
- Rotational traction.
- Turf Rootzone Shear Strength.



BERMUDAGRASS TRIAL



BERMUDAGRASS TRIAL

3m

12m

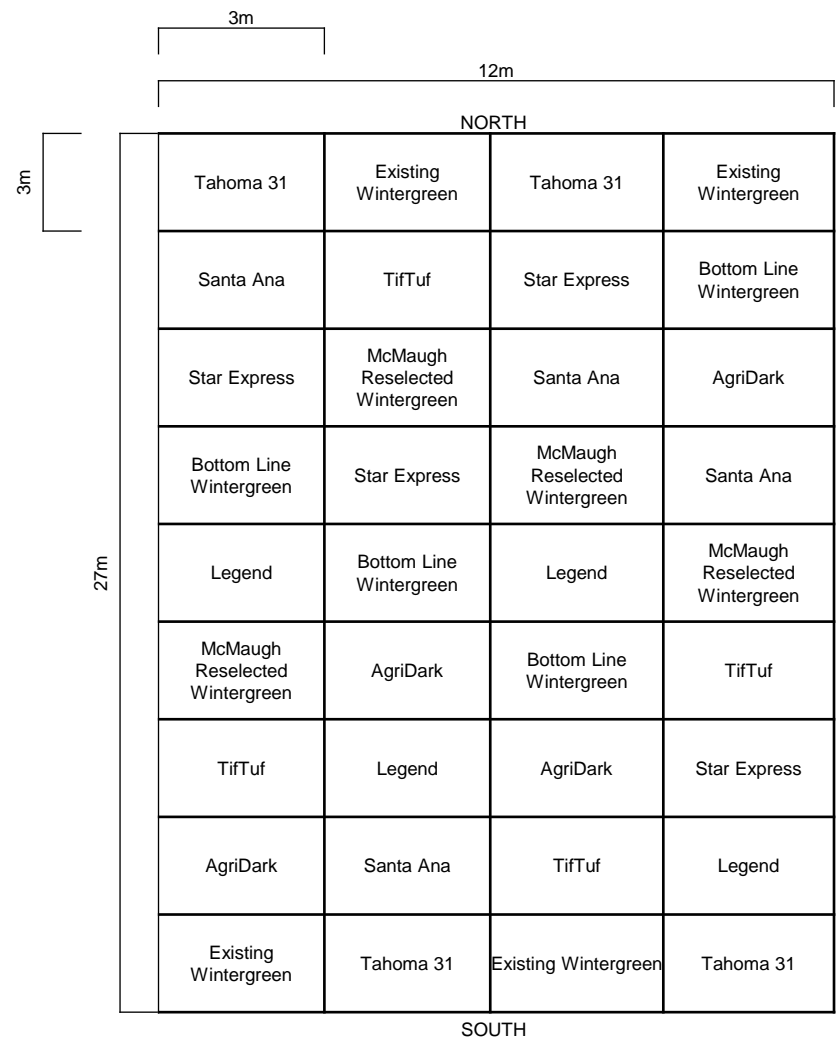
3m

27m

NORTH			
Tahoma 31	Existing Wintergreen	Tahoma 31	Existing Wintergreen
Santa Ana	TifTuf	Star Express	Bottom Line Wintergreen
Star Express	McMaugh Reselected Wintergreen	Santa Ana	AgriDark
Bottom Line Wintergreen	Star Express	McMaugh Reselected Wintergreen	Santa Ana
Legend	Bottom Line Wintergreen	Legend	McMaugh Reselected Wintergreen
McMaugh Reselected Wintergreen	AgriDark	Bottom Line Wintergreen	TifTuf
TifTuf	Legend	AgriDark	Star Express
AgriDark	Santa Ana	TifTuf	Legend
Existing Wintergreen	Tahoma 31	Existing Wintergreen	Tahoma 31
SOUTH			



BERMUDAGRASS TRIAL



BERMUDAGRASS TRIAL

3m

27m

3m			
12m			
NORTH			
Tahoma 31	Existing Wintergreen	Tahoma 31	Existing Wintergreen
Santa Ana	TifTuf	Star Express	Bottom Line Wintergreen
Star Express	McMaugh Reselected Wintergreen	Santa Ana	AgriDark
Bottom Line Wintergreen	Star Express	McMaugh Reselected Wintergreen	Santa Ana
Legend	Bottom Line Wintergreen	Legend	McMaugh Reselected Wintergreen
McMaugh Reselected Wintergreen	AgriDark	Bottom Line Wintergreen	TifTuf
TifTuf	Legend	AgriDark	Star Express
AgriDark	Santa Ana	TifTuf	Legend
Existing Wintergreen	Tahoma 31	Existing Wintergreen	Tahoma 31
SOUTH			
































BERMUDAGRASS TRIAL

Timeline

Test	Tool	#	Month	Collection Date	Reporting	Notes
Turf colour	Turf Colour Meter	1	Oct-20	2-Nov-20	-	Delayed from Oct due to rain events
Subjective turf quality	NA	2	Nov	23-Nov-20	-	
Thatch and rhizome depth	50mm or 105 mm corer	3	Dec	22-Dec-20	-	Recent wet weather. Plots were double scarified
Turf/green cover	Canopeo Mobile App	4	Jan-21	21-Jan-21	-	Recent wet weather. Minor summer grass around
Turf recovery of wedges removed from the rootzone to enable an assessment of turf recovery by stolons and rhizomes (230 mm x 230 mm wide, 100mm deep and 30 degree wedge from one side)	I think we should do these at the following times:	5	Feb	24-Feb-21	-	
	Nov wedge to watch summer recovery	6	Mar		6 month report	Ryegrass to be applied
	Feb wedge to watch autumn recovery	7	Apr		-	
	May wedge to watch winter recovery	8	May		-	
Rotational traction	Turf-Tec Shear Strength Tester;	9	Jun		-	
	and studded boot apparatus	10	Jul		-	
Turf rootzone shear	Turf rootzone shear tester with 50mm rod	11	Aug		-	
Seedhead rating	Subjective (started Nov 2020)	12	Sep		12 month report	Ryegrass to be removed

BERMUDAGRASS TRIAL

Colour Comparison

 ASTC <small>AUSTRALIAN SPORTS TURF CONSULTANTS</small>	2 Nov 2020	23 Nov 2020	22 Dec 2020	21 Jan 2021
TifTuf				
Peter McMaugh's Reselected Wintergreen				
Star Express				
Bottom Line Turf (QSAC) Wintergreen				
AgriDark				
Legend				
Santa Ana				

BERMUDAGRASS TRIAL



TifTuf Rhizomes



Seedhead- Santa Ana and AgriDark were the only two to have zero seedhead present in February.

BERMUDAGRASS TRIAL

Example Results

November Results

		TCM		Quality		Thatch		Rhizome		Caneopo		Root-shear		Wedge-Recovery		Traction		Shear		SUMMARY	Notes: 1 = best and 7 = worst LSD at 5%
Mean and Rank	Variety	Mean	Rank	Mean	Rank	Mean	Rank	Mean	Rank	Mean	Rank	Mean	Rank	Mean	Rank	Mean	Rank	Mean	Rank	-	
	AgriDark	7.3	1.5	7.0	1	17.3	2.5	23.8	2.5	91.2	1	22.1	2	-	-	52.6	2.5	12.4	2	1.9	
	Bottom Line Wintergreen	7.4	1	5.3	2	19.3	2.5	20.3	3	88.3	1	33.8	1.5	-	-	64.1	1	12.5	2	1.8	
	Legend	7.7	1	5.3	2	15.5	2	25.5	1.5	89.8	1	41.3	1	-	-	52.4	2.5	13.1	2	1.6	
	McMaugh Reselected Wintergreen	7.4	1	4.6	2	16.8	2.5	22.5	2.5	73.5	2	25.6	2	-	-	49.2	3	13.9	2	2.1	
	Santa Ana	7.4	1	7.0	1	15.5	2	19.8	3	87.2	1.5	29.3	1.5	-	-	59.0	1.5	18.3	1	1.6	
	Star Express	6.9	2	3.4	3	10.8	1	13.5	4	56.3	3	24.2	2	-	-	46.9	3	13.9	2	2.5	
	TifTuf	7.7	1	7.5	1	19.5	3	30.0	1	95.0	1	44.1	1	-	-	62.8	1	14.1	2	1.4	

February Results

		TCM		Quality		Thatch		Rhizome		Caneopo		Root-shear		Wedge-Recovery		Traction		Shear		Seedhead		SUMMARY	Notes: 1 = best and 7 = worst LSD at 5% Data includes seedhead
Mean and Rank	Variety	Mean	Rank	Mean	Rank	Mean	Rank	Mean	Rank	Mean	Rank	Mean	Rank	Mean	Rank	Mean	Rank	Mean	Rank	Mean	Rank	-	
	AgriDark	7.7275	1	7.725	1	27.5	1	29.25	1	61.355	1	42.25	1	51.2325	1	50.6	1	23.75	1	1	1	1.0	
	Bottom Line Wintergreen	8.045	1	7.45	1	27	1	30	1	57.0375	1	47.1	1	50.68	1	56.225	1	21	1	2.75	2.5	1.2	
	Legend	7.8775	1	7.125	1	28.25	1	30.75	1	60.85	1	47.95	1	51.46	1	52.05	1	22.625	1	3.0625	2.5	1.2	
	McMaugh Reselected Wintergreen	7.635	1	5.9375	2	30	1	28	1	32.715	1	46.125	1	39.68	1	50.275	1	22.25	1	2.8125	2.5	1.3	
	Santa Ana	8.12	1	7.3875	1	28.75	1	29.5	1	59.95	1	44.25	1	52.87	1	53.25	1	22.875	1	1.25	1	1.0	
	Star Express	7.77	1	5.325	2	26.25	1	28.75	1	29.175	1	44.525	1	47.1325	1	51.9	1	25.75	1	4	3	1.3	
	TifTuf	7.8875	1	7.0375	1	27.5	1	24.5	1	60.2975	1	53.2025	1	46.4125	1	47.2	1	20.25	1	1.9375	1.5	1.1	
LSD at 5%		0.571	0.571	0.423	0.423	4.590	4.590	7.950	7.950	21.730	21.730	14.700	14.700	10.220	10.220	7.124	7.124	4.678	4.678	0.831	0.831	-	

BERMUDAGRASS TRIAL Overseeding with Ryegrass

The Trial Plots were oversown with Premier III Perennial Ryegrass on 31 March 2021 @ 220Kg/Hectare to mirror the Stadium programme.

The seed was put out using a 1.5m wide Redexim Speed Seeder with Dual Spike Rollers.

The left half of each plot was seeded and the right half was left as straight Bermudagrass to monitor winter activity.

No pre-emergent herbicides have been applied, however they will be applied in August and October.



BERMUDAGRASS TRIAL

7-month observations

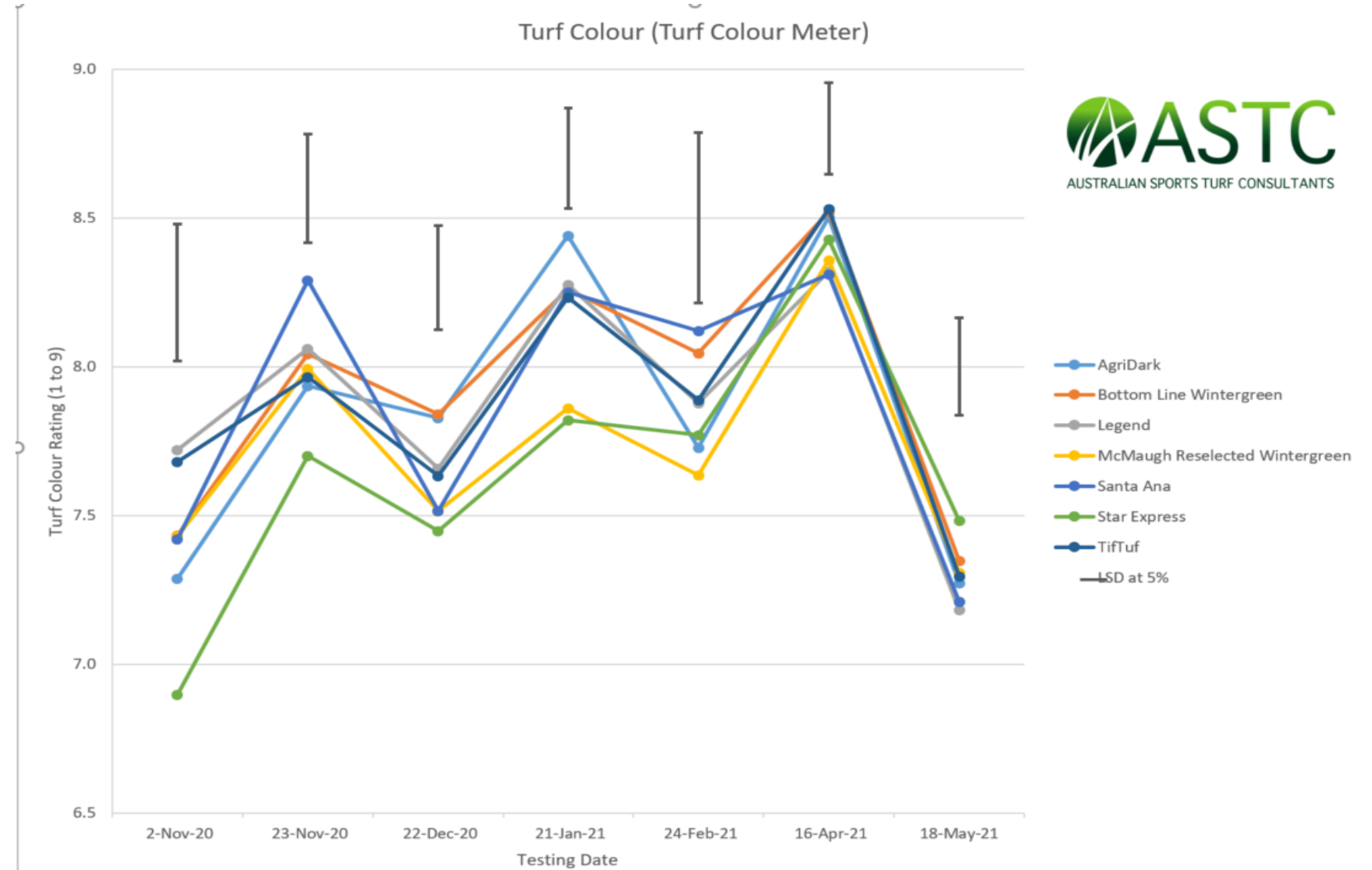
Fig 3- TURF COLOUR

January:

1. AgriDark
2. Legend
3. Santa Ana

May:

1. Star Express
2. Bottom Line Wintergreen
3. Reselected Wintergreen



BERMUDAGRASS TRIAL

7-month observations

Fig 4- TURF QUALITY

January:

1. AgriDark
2. Santa Ana
3. TifTuf

May:

1. Bottom Line Wintergreen
2. Santa Ana
3. AgriDark



BERMUDAGRASS TRIAL

7-month observations

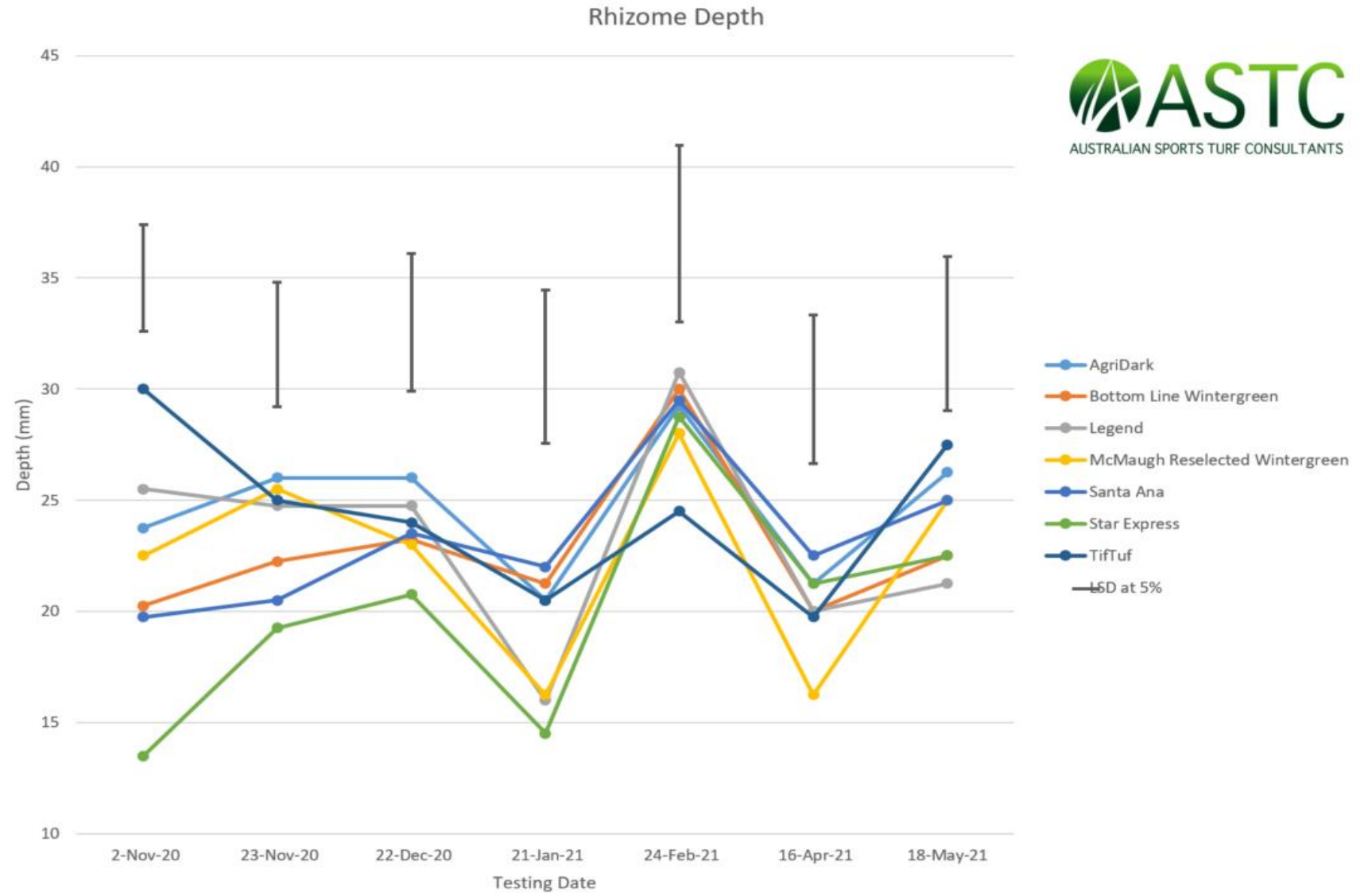
Fig 6- RHIZOME DEPTH

January:

1. Santa Ana
2. Bottom Line Wintergreen
3. TifTuf

May:

1. TifTuf
2. AgriDark
3. Santa Ana



BERMUDAGRASS TRIAL

7-month observations

Fig 8- ROOTZONE SHEAR USING ASTCs
SHEAR TRACTION TESTER

January:

1. Bottom Line Wintergreen
2. TifTuf
3. Legend

May:

1. TifTuf
2. Bottom Line Wintergreen
3. Legend



BERMUDAGRASS TRIAL

Rotational Traction tests



Santa Ana traction result.

BERMUDAGRASS TRIAL

7-month observations

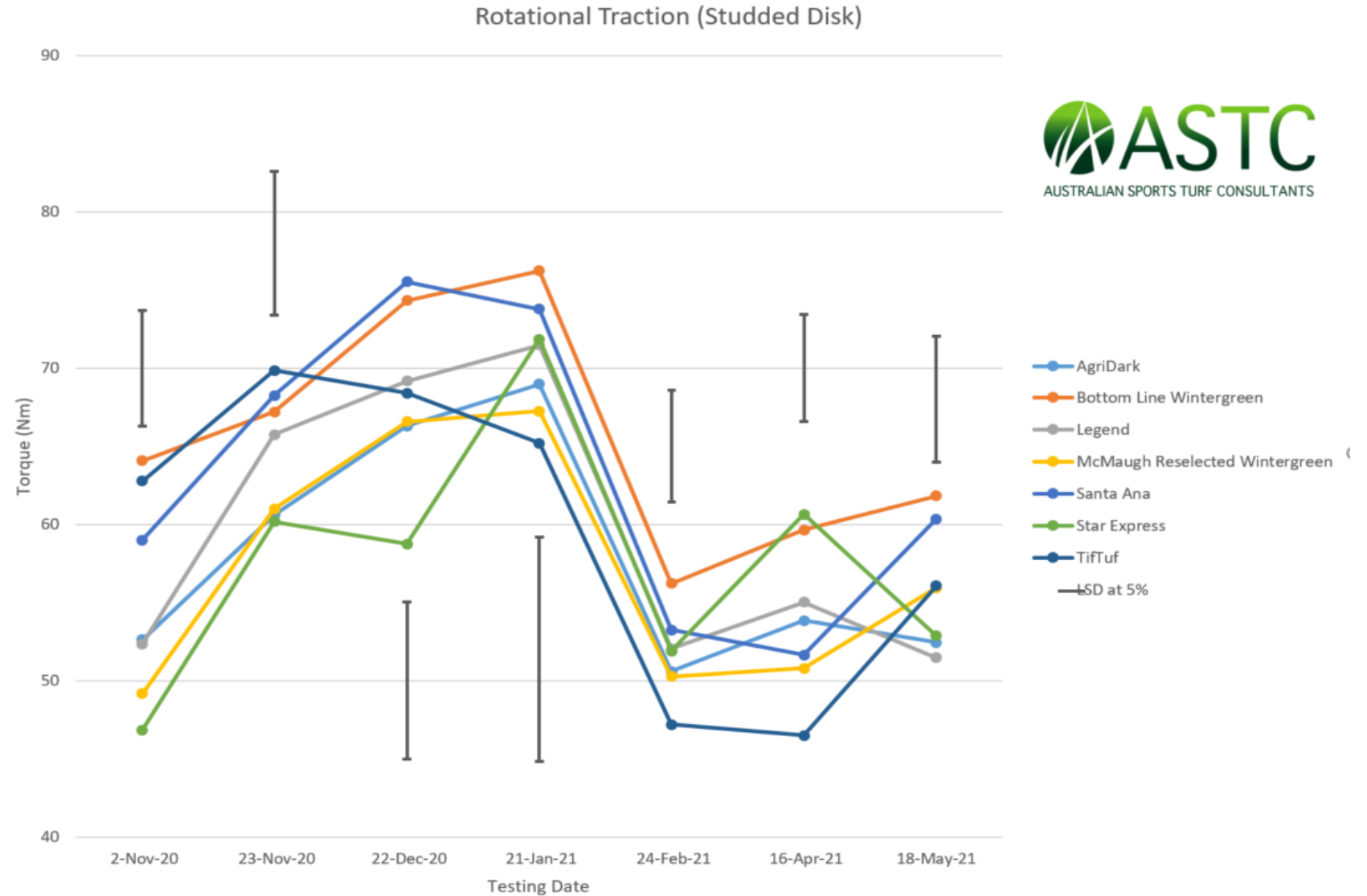
Fig 9- ROTATION SURFACE TRACTION
USING STUDED DISK APPARATUS

January:

1. Bottom Line Wintergreen
2. Santa Ana
3. Star Express

May:

1. Bottom Line Wintergreen
2. Santa Ana
3. TifTuf



BERMUDAGRASS TRIAL

7-month observations

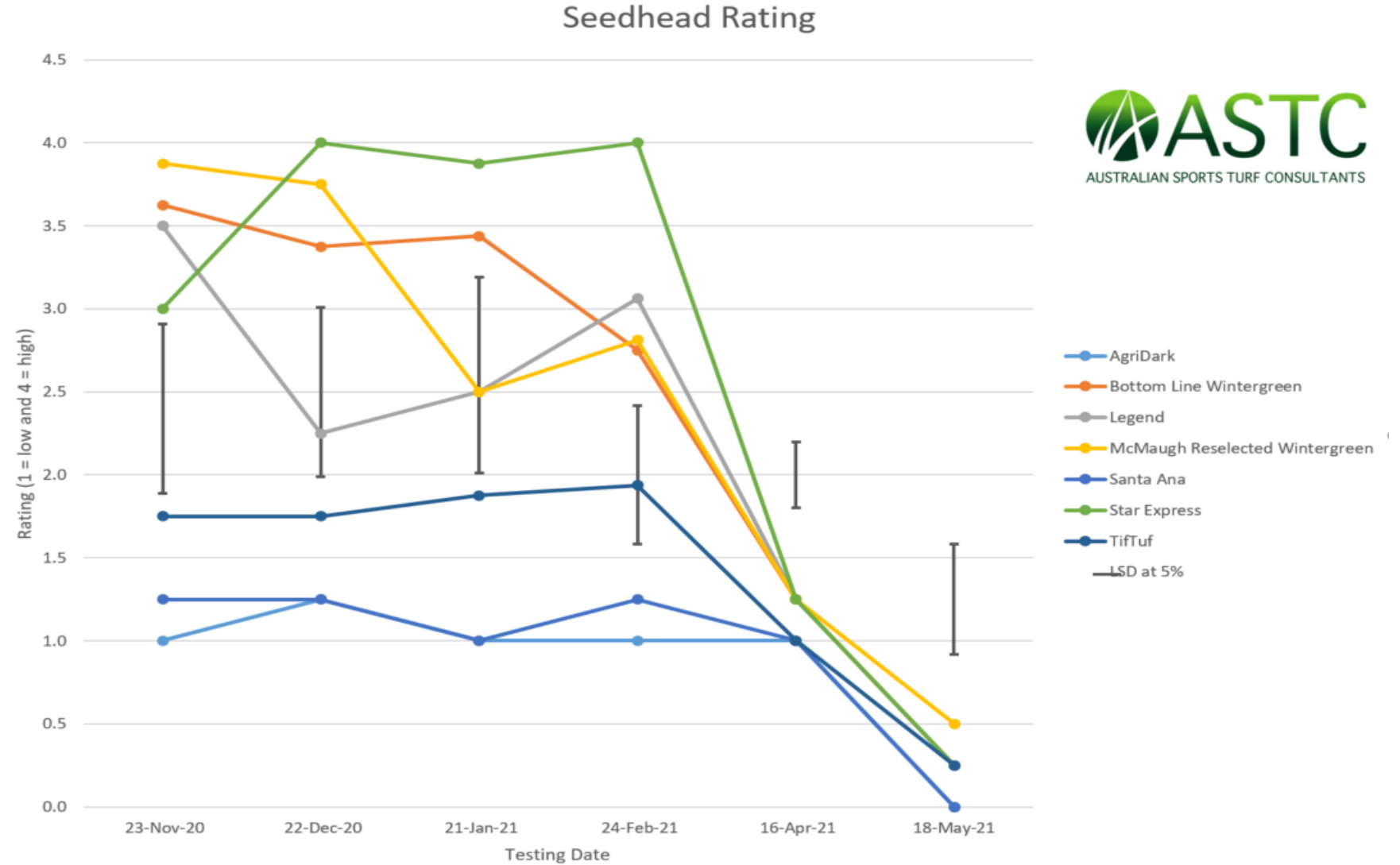
Fig 13- SEEDHEAD RATING

January:

1. Santa Ana
2. AgriDark
3. TifTuf

May:

1. Santa Ana
2. AgriDark
3. TifTuf



BERMUDAGRASS TRIAL

Recovery tests



BERMUDAGRASS TRIAL

Recovery tests



BERMUDAGRASS TRIAL

7-month observations

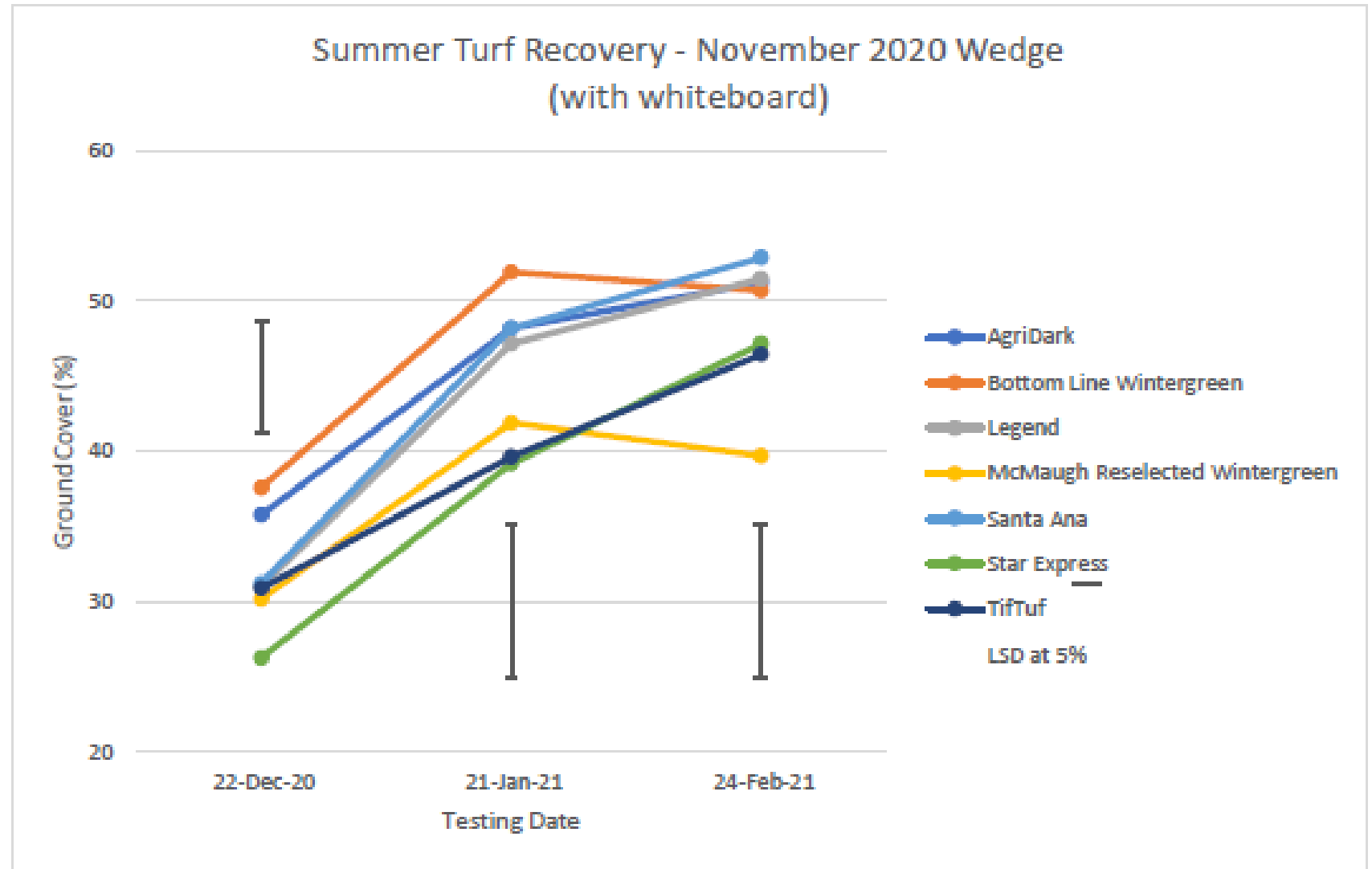
**Fig 11- SUMMER RHIZOME & STOLON
TURFGRASS RECOVERY FOLLOWING
WEDGE REMOVAL IN NOV 2020**

January:

1. Bottom Line Wintergreen
2. Santa Ana
3. AgriDark

February:

1. Santa Ana
2. Legend
3. Bottom Line Wintergreen



BERMUDAGRASS TRIAL

7-month observations

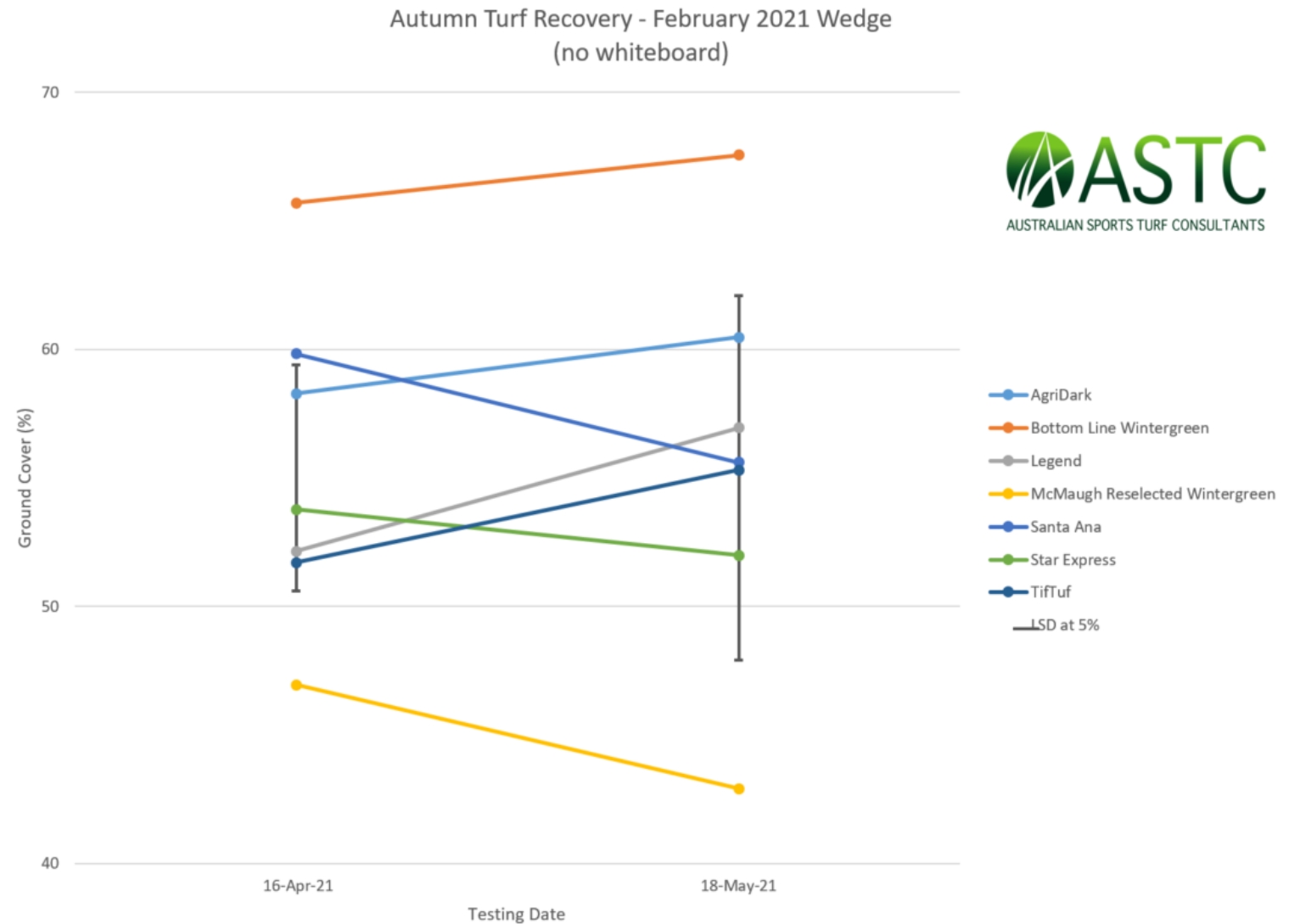
**Fig 12- AUTUMN RHIZOME & STOLON
TURFGRASS RECOVERY FOLLOWING WEDGE
REMOVAL IN FEB 2021**

April:

1. Bottom Line Wintergreen
2. Santa Ana
3. AgriDark

May:

1. Bottom Line Wintergreen
2. AgriDark
3. Legend



BERMUDAGRASS TRIAL 7-month observations

QSAC Couch Trial - Current Turf Performance Ranking Summary



Date	AgriDark	Bottom Line Wintergreen	Legend	McMaugh Reselected Wintergreen	Santa Ana	Star Express	TifTuf
2/11/2020	1.9	1.8	1.6	2.1	1.6	2.5	1.4
23/11/2020	1.2	1.6	1.4	1.8	1.0	2.1	1.2
22/12/2020	1.1	1.3	1.2	1.4	1.2	1.5	1.2
21/01/2021	1.0	1.3	1.2	1.4	1.1	1.6	1.2
24/02/2021	1.0	1.2	1.2	1.3	1.0	1.3	1.1
16/04/2021	1.1	1.0	1.1	1.1	1.1	1.0	1.1
18/05/2021	1.05	1.0	1.05	1.09	1.05	1.05	1.05
Mean	1.18	1.31	1.25	1.46	1.14	1.58	1.18

Notes:

- The lowest number is the highest performing turf variety. The green cells highlight the best
- No seed head data was collected on 2 Nov 2020.
- No data was collected in March 2021 due to inclement weather and COVID restrictions.



Queensland
Tennis Centre

BERMUDAGRASS TRIAL

A big Thankyou to Matt Roche and his team at Australian Sports Turf Consultants.

Also like to thank:

- Will Pearce and ICL.
- Fernland and Campbell Chemicals for phytotoxicity trials.
- Syngenta and Bayer.
- Turf suppliers for donating turf.
- STA Queensland- a great trade day held earlier in the year.
- ASTMA- inviting me to present on such an important topic for our region.

