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Agriculture

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PASTURE DRY MATTER YIELD OF PERENNIAL RYEGRASS AND RYEGRASS HYBRIDS IN THE SOUTHERN CAPE

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Wilderness

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Introduction

- Perennial ryegrass plays an important role in fodder flow programmes in the southern cape



- Perennial ryegrass, hybrid ryegrass and Festulolium (*L. multiflorum* x *L. perenne*; *L. perenne* x *Festuca pratensis*) cultivars available in South Africa.

In order to determine the best adapted and highest producing cultivar to utilise in pasture systems, it is important that these cultivars be evaluated on a regular basis and over a sufficient number of years to take climatic variations into account.

Materials and methods

- 16 perennial ryegrass (*L. perenne*)
- 5 hybrid ryegrass (*L. multiflorum* x *L. perenne*)
- 3 Festulolium x (*L. perenne* x *F. pratensis*)



- Small plot cutting trial- established April 2014



- Permanent over-head sprinkler irrigation



- Harvested approximately every 28 days/canopy closure



- Fertilise 50 kg N ha⁻¹ after each harvest



Table 1: The total seasonal DM production (t DM ha⁻¹) of perennial ryegrass and ryegrass hybrids during year 1 and year 2.

Variety		Year 1				Year 2			
		Winter	Spring	Summer	Autumn	Winter	Spring	Summer	Autumn
Shogun	HR ¹	3.04**	5.36*	2.19**	1.35*	1.33*	4.02**	2.23**	3.12*
Base	Lp ²	2.86*	5.26*	2.15*	1.07	1.04*	3.57*	2.02*	3.54**
Arrow	Lp	2.46	5.45**	2.03*	1.44*	1.22*	3.49*	1.38	3.33*
One50	Lp	2.59*	5.28*	1.97*	1.20*	1.45**	3.29	1.69	3.10*
Halo	Lp	2.80*	5.19*	1.71*	1.29	1.19*	3.23	1.82*	3.27*
Banquet I	HR	2.45	4.88*	2.13*	1.43*	0.92	3.15	2.06*	3.38*
Acrobat	HR	2.78*	5.10*	1.67*	1.28*	0.74	3.92*	1.72	3.49*
Degree	Lp	2.31	5.09*	1.72*	1.57**	0.67	3.86*	1.80	2.72
Ultra	F ³	2.42	4.72*	1.93*	1.08	0.89	2.81	1.97*	3.40*
Trojan	Lp	2.52	4.93*	1.56	1.22*	0.99	3.27	1.37	3.22*
Mezo	Lp	2.38	4.87*	1.83*	0.93	0.78	2.46	1.64	3.48*
Helix	F	2.71*	4.73*	1.68*	0.81	0.77	2.70	1.55	2.98
Billabong	Lp	2.37	4.46	1.55	1.28*	0.94	3.27	1.37	3.11*
Optimum	Lp	2.39	4.58*	1.40	1.14*	0.88	3.23	1.51	3.24*
Prospect	Lp	2.43	4.27	1.82*	0.86	0.91	2.74	1.99*	3.15*
Storm	HR	2.17	4.30	1.72*	1.15*	0.59	3.58*	1.52	3.00
Matrix	F	2.64*	4.24	1.51	0.84	1.07*	2.60	1.61	3.34*
Bronsyn	Lp	2.35	4.13	1.63	1.00	0.83	3.34	1.63	3.30*
Power	Lp	2.13	4.02	1.51	1.14*	0.53	3.21	1.44	3.07
Indiana	Lp	2.23	4.16	1.33	0.84	0.74	3.14	1.77	3.12*
WintassII	Lp	2.20	3.89	1.06	0.94	0.61	2.66	1.16	3.01
Victoca	Lp	2.15	3.80	1.12	0.90	0.56	2.98	1.23	2.84
Calibra	Lp	2.27	3.32	1.03	0.76	0.43	2.86	1.26	2.70

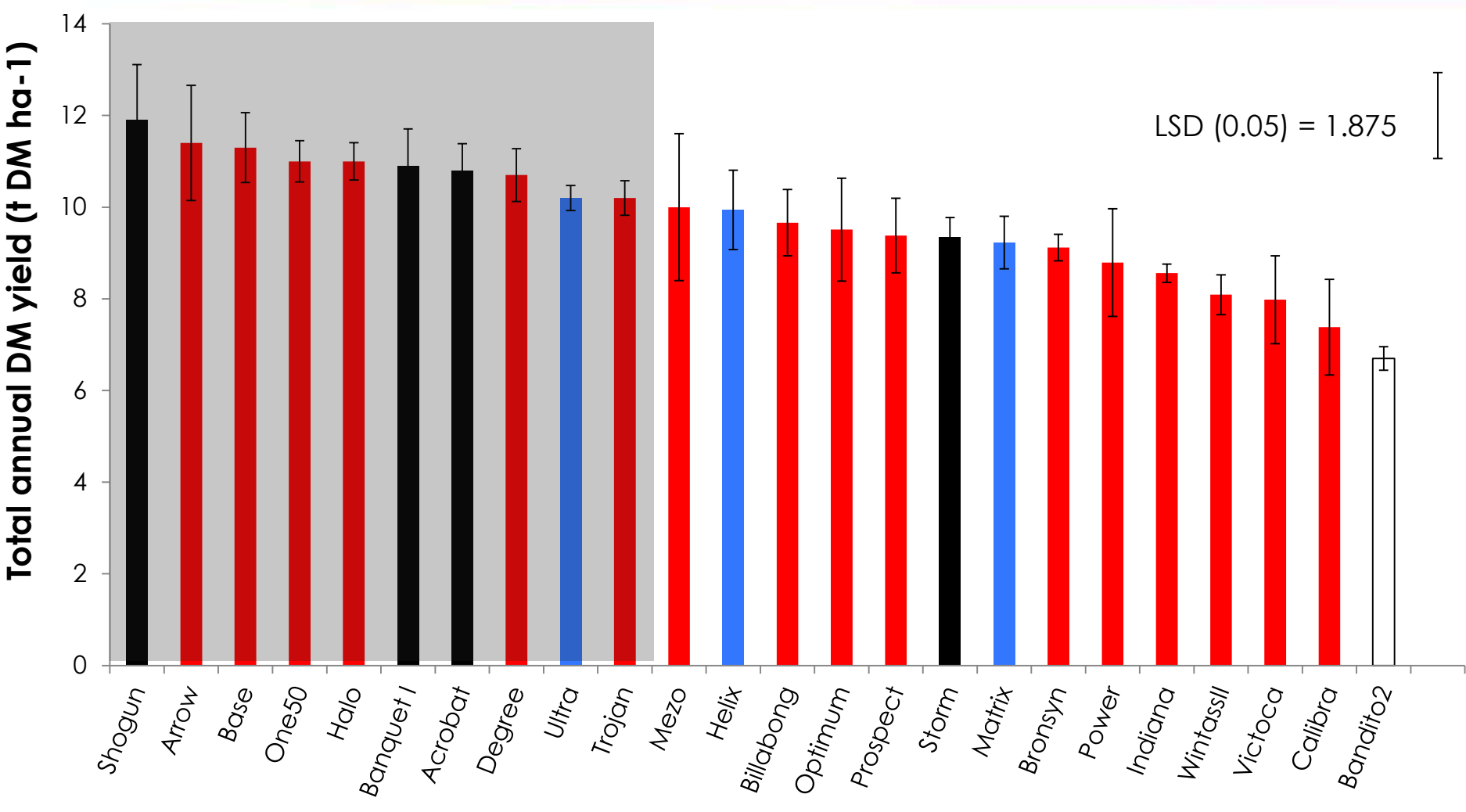
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LSD (0.05)		0.516	0.974	0.546	0.453	0.452.01	0.680	0.249	0.454

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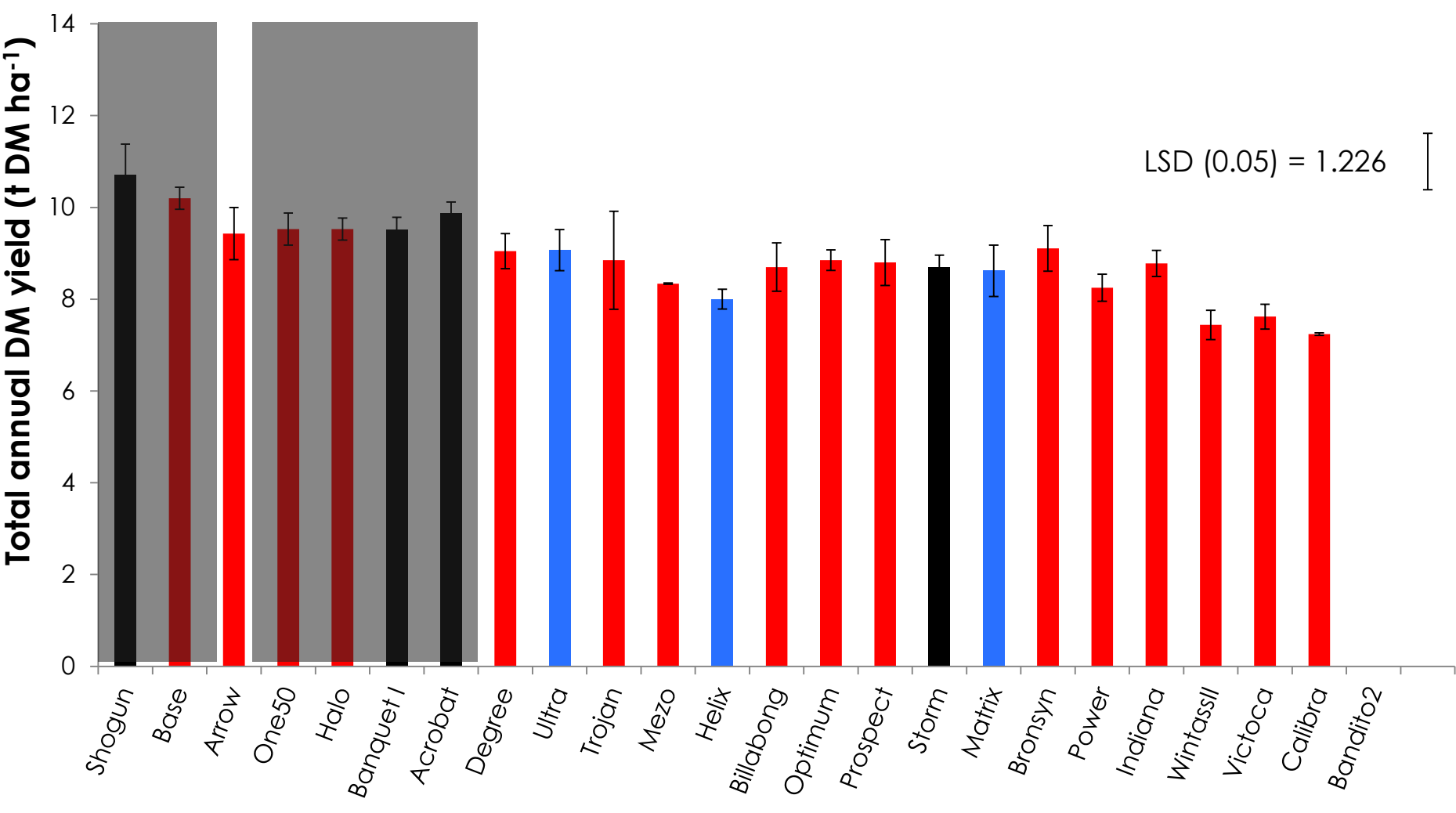
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Figure 1. Total DM production (t DM ha⁻¹) of perennial ryegrass and ryegrass hybrids during year 1



Hybrid
 Perennial ryegrass
 Festulolium

Figure 2. Total DM production (t DM ha⁻¹) of perennial ryegrass and ryegrass hybrids during year 2



Hybrid
 Perennial ryegrass
 Festulolium

Conclusions

- The most important challenge with perennial ryegrass and related species, is the yield reduction in the second year, particularly during winter.
- **Shogun, Base, One50, Halo**



Thank you

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