Angaston

Barossa Improved Grazing Group - Pasture Walk

Friday September 19, 12.30pm-5.00pm

Beginning at Jamie Nietschke's pasture paddock, opposite 741 Belvidere Rd EBENEZER (near corner of Belvidere and Kapunda-Truro Rd)

Visiting the pasture paddocks participating in BIGG's 'Barossa Pasture Challenge' (located at Ebenezer, Moculta, Keyneton, Craneford and Flaxman Valley)

- See first hand how each paddock has been improved to increase pasture production and quality
- Learn about the effect of root diseases on sub-clover pasture
- Agronomists and industry reps will be on-hand to discuss each paddock and answer your questions on all things pasture!

Concluding with drinks and nibbles at Jen Light's shearing shed, Flaxman Valley!

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COOPERS OF MT. PLEASANT FARM SUPPLIES

Farmer Johns

Brett Nietschke, BIGG Technical Facilitator
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Productive and persistent pasture varieties bred for Australian conditions.

Holdfast GT
Winter Active Phalaris

Holdfast GT is a winter active phalaris that has been released as a grazing tolerant replacement for Holdfast. Once established, it can be set stocked and will provide a productive long-term stand. Low alkaloid profile, very good autumn vigour and winter growth.

Kasbah
Cocksfoot

Hardy, deep-rooted perennial grass that is well suited to dry conditions and acid soils. Good seedling vigour and early growth producing tillers. Maximum herbage production is during the autumn and winter periods.

Barberia
Long rotation ryegrass

Renown for growing like an Italian ryegrass in winter, big spring flush, low aftermath heading and drought tolerance. Will last 3-4 years or much longer with care. Ideal for oversowing or a base for a pasture phase in dryland/semi-dryland cropping systems. Very early heading. 12-20 kg/ha.

Bealey
Perennial ryegrass

Perennial with proven animal performance over the longer term. Suits medium-high rainfall situations with good growing conditions, offering consistent highest quality feed. Very late heading. 20-30 kg/ha.

Shogun
Long rotation ryegrass

New late-flowering tetraploid long rotation ryegrass. 2-5 years, highest performance dairy and finishing operations requiring feed in autumn, winter and summer. Ideal oversowing option to lift partially rundown pastures. Very late heading. 20-30 kg/ha.

Antas
Sub clover

Antas has amazing seedling vigour and winter growth. Excellent production throughout the year and this, combined with its large leaves, makes it ideal for both grazing and hay production. Also offers the benefits of fixing soil nitrogen plus providing an effective disease break.

Vortex
Tetraploid annual ryegrass

High performing annual ryegrass ideal for producers requiring strong autumn, winter and early spring performance. Benefits from very good seedling vigour and is well suited to autumn-winter dairying, fat lamb and beef production plus early-to-mid season silage/hay.

Monti
Sub clover

Early maturing yanninicum sub clover with exceptional early season growth and regenerates reliably. Adapted to temperate areas receiving 450-550 mm annual rainfall and will perform to its best where intermittent winter waterlogging occurs.

Sardi-Grazer
Winter active lucerne

SARDI-Grazer was developed through a GRDC funded project aimed at increasing the persistence of lucerne in mixed grazing/cropping systems, where large paddocks limit the use of rotational grazing. Proven to be the variety of choice where less than ideal grazing management is practiced.

Campeda
Sub clover

Offering some of the highest seed yields in the market, Campeda is a black, hard seeded sub-clover with mid-season maturity which makes it adaptable to medium and high rainfall regions. Produces DM quickly in autumn and provides excellent winter vigour and late season growth.

Series 2 Sardi 7
Winter active lucerne

Even more versatile, broadly adapted and persistent than the original SARDI 7. It has been bred for the Australian climate and offers greater performance in cold, wet environments where lucerne can struggle. This new variety is an excellent high yielding and multi-purpose lucerne that is ideal for both grazing and hay production.

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Barossa Pasture Challenge Project

In 2013 BIGG received a State NRM Program Community Grant from the Department of Environment, Water and Natural Resources for the **Barossa Pasture Challenge**. This project aims to design and implement a sustainable and productive pasture renovation program for paddocks in the region.

Local producer groups (Angaston Ag. Bureau, Koonunga Ag. Bureau, North Rhine Sheep Group, Mount Pleasant Beef Group and Barossa Mid North Dairy Discussion Group) then 'challenged' each other to increase productivity and achieve good NRM outcomes for six nominated pasture paddocks as follows:

1. Barossa Mid North Dairy Discussion: Andrew Koch - annual grass/sub-clover/phalaris pasture
2. North Rhine Sheep: Graham Keynes - annual grass/sub-clover/phalaris pasture
3. Angaston Ag Bureau: Anthony Steinert - phalaris/cocksfoot/chicory/plantain/sub-clover pasture
4. Angaston Ag Bureau: Jen Light - phalaris/cocksfoot/sub-clover pasture
5. Mount Pleasant Beef: Vic Patrick - phalaris/cocksfoot/sub-clover pasture
6. Koonunga Ag Bureau: Jamie Nietschke - lucerne pasture

The key critera for each paddock was it must be an established (preferably with some perennial base) pasture, which is manipulated to improve its productivity rather than being sown to a new pasture in 2014.

A Pasture Management Plan (PMP) was initially developed for each paddock in association with local agronomists Peter Wendt and Craig John. Throughout the 2014 growing season each paddock was monitored for productivity and quality changes, with the results being summarised in this booklet.

Today's Pasture Walk is the culmination of the project with each paddock being judged by consultant Tim Prance. At the end of the Pasture Walk prizes will be awarded for various categories, which have been kindly donated by Heritage Seeds, Farmer Johns and Coopers Farm Supplies.

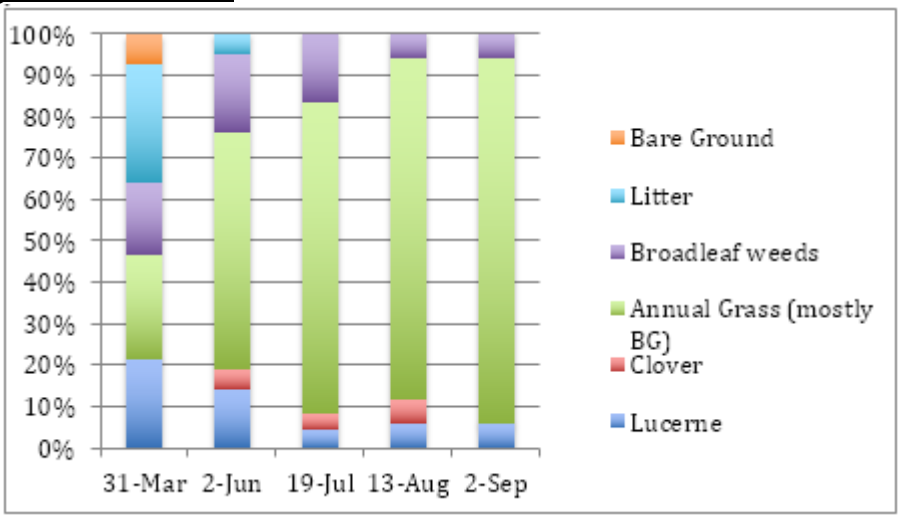
Brett Nietschke
BIGG Technical Facilitator

Pasture paddock details

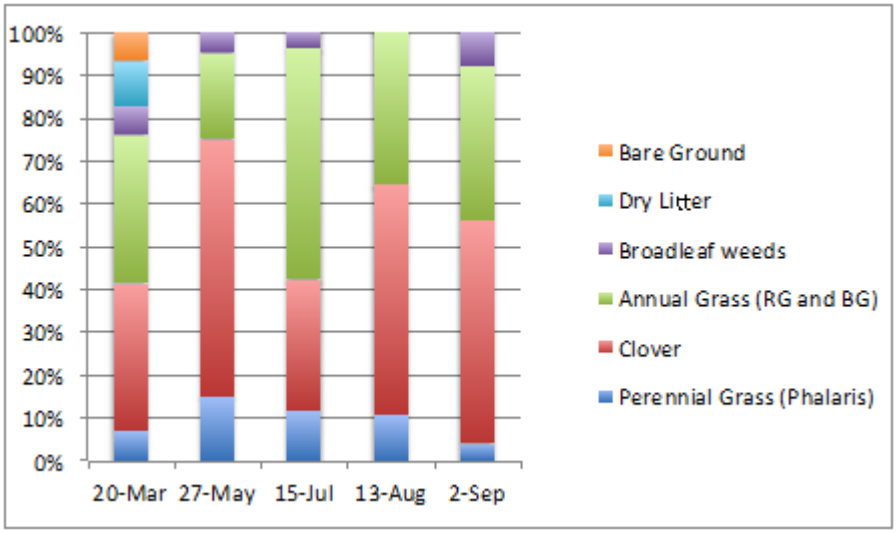
	Jamie Nietschke	**Andrew Koch**	**Graham Keynes**	**Anthony Steinert**	**Vic Patrick**	**Jen Light**
Location	Ebenezer	Moculta	Keyneton	Craneford	Flaxman Valley	Flaxman Valley
Key paddock aims	- Maximise feed - Quality grazing for heifers	- Graze to August - Manage grasses and cut quality hay	- Quality grazing for weaner lambs - Improve phalaris and clover	- Maximise feed	- Improve perennial and clover - Cut quality hay	- Improve pasture quality - Evaluate superphos-phate
Soil pH $CaCl_2$)	5.6	5	4.7	5.2	5.8	4.7
Soil P (Colwell-mg/Kg)	20	20	39	64	61	21
Soil OC (%)	1.5	3.5	3.8	2.6	1.7	1.7
March-August rainfall (mm)	326	289	324	450	493	493
June-July rainfall (mm)	171	161	169	315	332	332

Pasture Composition

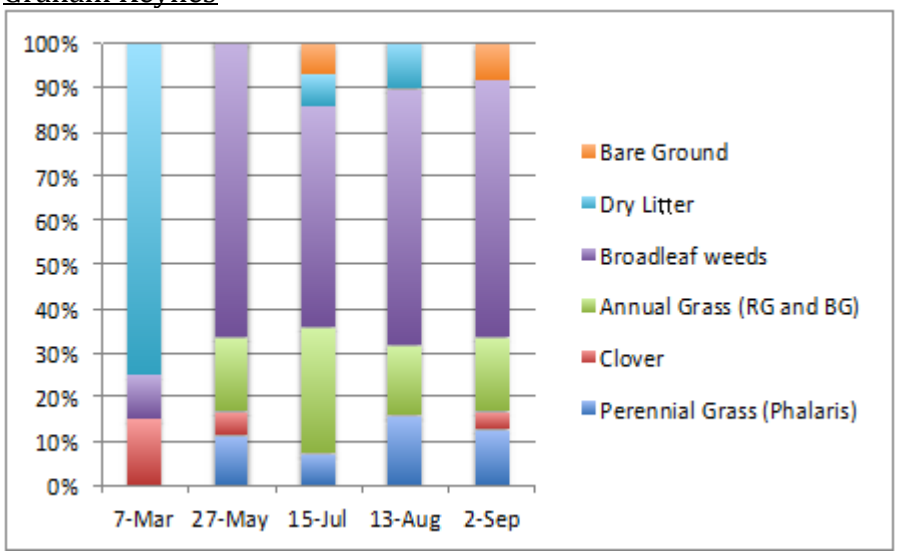
Jamie Nietschke



Andrew Koch

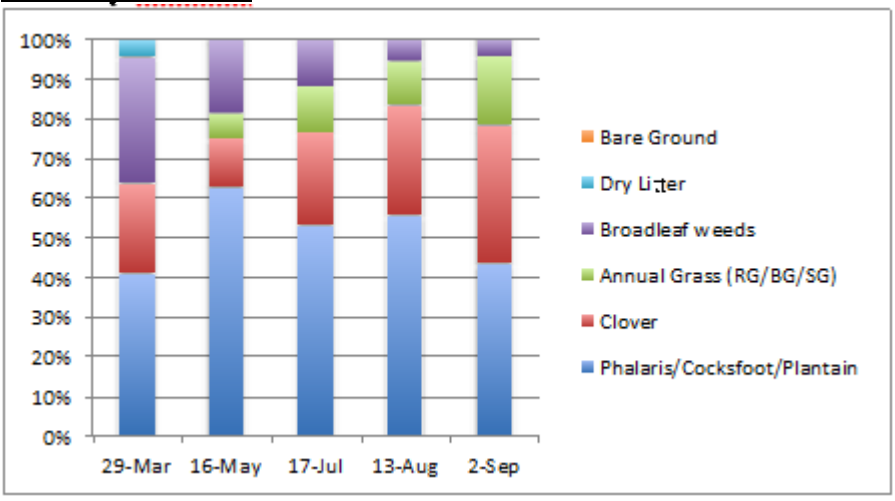


Graham Keynes

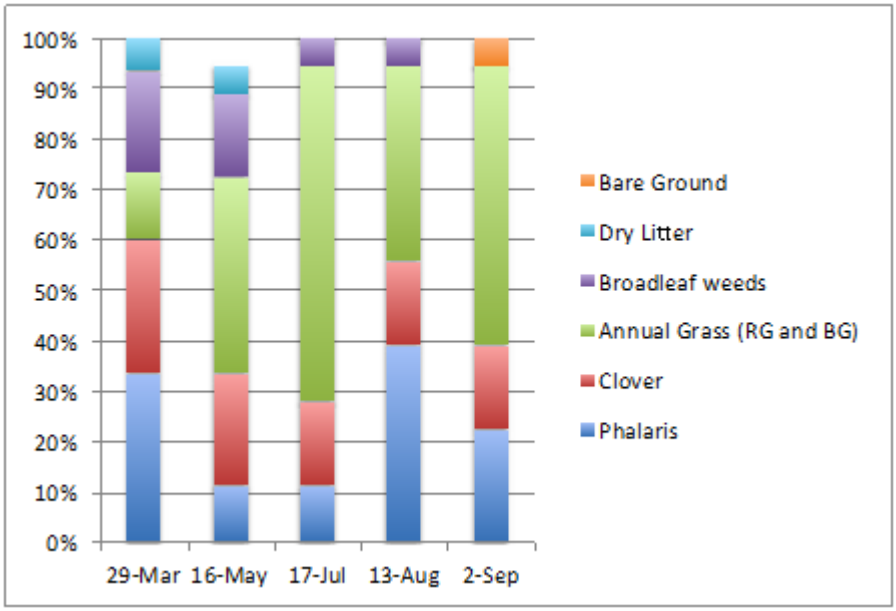


Pasture Composition (cont)

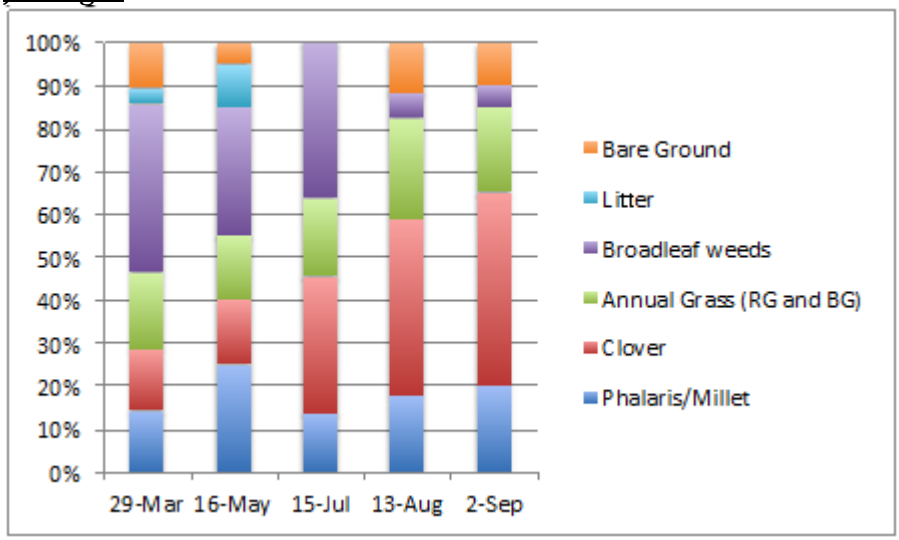
Anthony Steinert



Vic Patrick



Jen Light



Pasture Quality (at 13/8/14)

	Pasture Composition (at 13/8/14)	Metabolisable Energy (MJ/kg)	Crude Protein (% of DM)
Jamie Nietschke	barley grass- 59%, ryegrass/silver grass- 23%, lucerne, 6%, clover 6%, capeweed 6%	11.3	13.7
Andrew Koch	clover- 54%, barley grass- 36%, phalaris- 11%	9.9	22.0
Graham Keynes	salvation jane/geranium- 57%, phalaris- 16%, barley grass- 16%, (dry litter- 11%)	8.1	17.5
Anthony Steinert	phalaris- 45%, clover- 28%, silver grass- 11% cocksfoot/plantain- 11%, capeweed- 5%	10.0	17.9
Vic Patrick	phalaris- 39%, ryegrass/barley grass- 39%, clover- 17%, salvation jane- 5%	9.7	14.2
Jen Light	clover- 41%, ryegrass/silver grass-23%, phalaris- 18%, capeweed 6%, (bare ground- 12%)	10.8	15.6

Grazing summary (1/3-31/8/14)

	Jamie Nietschke	Andrew Koch	Graham Keynes	Anthony Steinert	Vic Patrick	Jen Light
Days grazed	119	129	72	77	9	10
Days closed	64	54	111	106	174	173
DSE days	8,656	50,684	38,455	26,180	4,193	3,273
DSE days/ha	3935	3270	385	3740	1536	1129
Stocking pressure (DSEs/ha)	33	25	5	49	171	113
Stocking rate for period (DSEs/ha)	21.5	17.9	2.1	20.4	8.4	6.2

Grazing summary (1/6-31/7/14)

	Jamie Nietschke	Andrew Koch	Graham Keynes	Anthony Steinert	Vic Patrick	Jen Light
Days grazed	30	59	43	16	7	2
Days closed	30	1	17	44	53	58
DSE days	1,800	15,696	34,830	5,440	1,663	672
DSE days/ha	818	1013	348	777	609	232
Stocking pressure (DSEs/ha)	27	17	8	49	87	116
Stocking rate for period (DSEs/ha)	13.6	16.9	5.8	13.0	10.1	3.9

Pasture Productivity (/100ml rainfall)

	Jamie Nietschke	Andrew Koch	Graham Keynes	Anthony Steinert	Vic Patrick	Jen Light
Grazing (DSE days/ha)	3935	3270	385	3740	1536	1129
March-August rainfall (mm)	326	289	324	450	493	493
Kg DM/ha/100 mm of rainfall	1207	1131	119	831	312	229

Pasture Profitability

	Jamie Nietschke	Andrew Koch	Graham Keynes	Anthony Steinert	Vic Patrick	Jen Light
Kg DM/ha/100 mm of rainfall	1207	1131	119	831	312	229
Input costs ($/ha)	61.92	45	24	82.66	77	27.93
Cents/Kg DM/ ha/100 mm of rainfall	**5.1**	**4.0**	**20.2**	**9.9**	**24.7**	**12.2**

Input costs

Jamie Nietschke- inputs/ha		Date	Cost ($/ha)
Broadstrike (25g)+Diuron (50g)		22-May	16.92
Superphosphate (150kg)- $300/t		28-May	45
	Total		**61.92**

Andrew Koch- inputs/ha		Date	Cost ($/ha)
Raptor(50g)+Liase(2%)+Quicken(0.5%)+Dimethoate(85g)		13-Aug	45
	Total		45
MES10 fertiliser:12N:17.4P:10S (83kg) - $680/t		4-Sep	56.44

Graham Keynes- inputs/ha		Date	Cost ($/ha)
Superphosphate (80kg)- $300/t		5-Jun	24
	Total		**24**

Anthony Steinert		Date	Cost ($/ha)
eNtrench (2.5l/ha)- $26/ha-applied to 1/3 of paddock only		14-Jun	8.66
Urea (100kg) -$500/t		16-Jun	50
Ecopar (400ml)+Salvation(550ml)		22-Jul	24
	Total		**82.66**

Vic Patrick		Date	Cost ($/ha)
Superphosphate (150kg)- $300/t		March	45
Agtryne(1.5l)+ThistleKillem (200ml)		22-Jul	24
Gramoxone(1.3l)		13-Aug	8
	Total		**77**

Jen Light		Date	Cost ($/ha)
Superphosphate- $300/t (paddock size 2.9ha)- 100 and 400kg/ha strips		24-May	27.93
	Total		**27.93**

Jamie Nietschke: Paddock Grazing Record

Paddock: Hayshead
Area: 2.2 ha

A	B			C		D		E					
Stock grazing paddock				**Grazing period**				**DSEs**			**Pasture and feeding**		
Type of stock	**No.**	**CS or live-weight IN**	**CS or live-weight OUT**	**Date In**	**Date Out**	**Days grazed**	**Days in period**	**DSEs per head**	**DSEs for mob**	**DSE days**	**Available pasture (kg/ha)**		**Hand feeding**
											before grazing	after grazing	MJ per day
Heifers 3 - 5 months	16			1-Mar	10-May	70	70	5	80	5600	4000	2000	1.6kg/hd/day
Closed	0			10-May	10-Jun	0	31		0	0			
Hefiers 3 -5 months old	12			10-Jun	10-Jul	30	30	5	60	1800	2700	1600	
Closed	0			10-Jul	12-Aug	0	33		0	0			
Hefiers 4-6 months old	12			12-Aug	31-Aug	19	19	6	72	1368	1800	1000	

Grazing Summary

Days in period	183
Days grazed	1119
Days closed	64
DSE days	8,956
DSE days per ha	3935
Stocking pressure (DSEs per ha)	33
Stocking rate for period (DSEs per ha)	21.5

Includes reduction of 112DSE days for hand feeding from 1/3-10/5/14

Andrew Koch: Paddock Grazing Record

Paddock: Vic's Block
Area: 21 ha

A	B			C		D		E				
Stock grazing paddock				**Grazing period**				**DSEs**			**Pasture and feeding**	
Type of stock	**No.**	**CS or live-weight IN**	**CS or live-weight OUT**	**Date In**	**Date Out**	**Days grazed**	**Days in period**	**DSEs per head**	**DSEs for mob**	**DSE days**	**Available pasture (kg/ha)**	**Hand feeding**
											before grazing / after grazing	MJ per day
Closed	0			1-Mar	22-Mar	0	21		0	0	600	
Heifers (450kg)	50			22-Mar	4-May	43	43	12	600	25800	1200 / 1300	
Closed	0			4-May	18-May	0	14		0	0		
Ewes(160)+Lambs(155)	160			18-May	1-Jun	14	14	2.5	400	5600	1500 / 700	
Ewe+Lbs+Heifers(450kg)	169			1-Jun	21-Jun	20	20	3	507	10140	700 / 1200	
Heifers (450kg)	9			21-Jun	22-Jul	31	31	12	108	3348	1200 / 800	
Closed	0			22-Jul	23-Jul	0	1		0	0		
Heifers (450kg)	23			23-Jul	13-Aug	21	21	12	276	5796	/ 700	
Closed	0			13-Aug	31-Aug	0	18		0	0	/ 1500	

Grazing summary

Days in period	183
Days grazed	129
Days closed	54
DSE days	50,684
DSE days per ha	3270
Stocking pressure (DSEs per ha)	25
Stocking rate for period (DSEs per ha)	17.9

Graham Keynes: Paddock Grazing Record

Paddock: Miles
Area: 100 ha

A	B			C		D		E					
Stock grazing paddock				**Grazing period**				**DSEs**			**Pasture and feeding**		
Type of stock	**No.**	**CS or live-weight IN**	**CS or live-weight OUT**	**Date In**	**Date Out**	**Days grazed**	**Days in period**	**DSEs per head**	**DSEs for mob**	**DSE days**	**Available pasture (kg/ha)** before grazing	**Available pasture (kg/ha)** after grazing	**Hand feeding** MJ per day
Weaner Calves	25			1-Mar	30-Mar	29	29	5	125	3625	1700		
Closed	0			30-Mar	11-Jun	0	73		0	0			
Ewe Hoggets	810	2.8		11-Jun	24-Jul	43	43	1	810	34830	2200	500	
Closed	0			24-Jul	31-Aug	0	38		0	0		1100	

Grazing Summary

Days in period	183
Days grazed	72
Days closed	111
DSE days	38,455
DSE days per ha	385
Stocking pressure (DSEs per ha)	5
Stocking rate for period (DSEs per ha)	2.1

Anthony Steinert: Paddock Grazing Record

Paddock: Yards
Area: 7 ha

A	B			C		D		E					
Stock grazing paddock				**Grazing period**				**DSEs**			**Pasture and feeding**		
Type of stock	**No.**	**CS or live-weight IN**	**CS or live-weight OUT**	**Date In**	**Date Out**	**Days grazed**	**Days in period**	**DSEs per head**	**DSEs for mob**	**DSE days**	**Available pasture (kg/ha)**		**Hand feeding**
											before grazing	after grazing	MJ per day
Closed	0			1-Mar	26-Mar	0	25		0	0	2000		
Cows (20) and Calves	20			26-Mar	5-May	40	40	17	340	13600	2800	1400	
Closed	0			5-May	1-Jun	0	27		0	0			
Cows (20) and Calves	20			1-Jun	14-Jun	13	13	17	340	4420	2200	1300	
Closed	0			14-Jun	28-Jul	0	44		0	0			
Cows (20) and Calves	20			28-Jul	21-Aug	24	24	17	340	8160	2500	1300	
Closed	0			21-Aug	31-Aug	0	10		0	0		1800	

Grazing Summary

Days in period	183
Days grazed	77
Days closed	106
DSE days	26,180
DSE days per ha	3740
Stocking pressure (DSEs per ha)	49
Stocking rate for period (DSEs per ha)	20.4

Vic Patrick: Paddock Grazing Record

Paddock: Horse
Area: 2.73 ha

A	B			C		D		E				
Stock grazing paddock				**Grazing period**				**DSEs**			**Pasture and feeding**	
Type of stock	**No.**	**CS or live-weight IN**	**CS or live-weight OUT**	**Date In**	**Date Out**	**Days grazed**	**Days in period**	**DSEs per head**	**DSEs for mob**	**DSE days**	**Available pasture (kg/ha)**	**Hand feeding**
											before grazing / after grazing	MJ per day
Closed	0			1-Mar	5-Jul	0	126		0	0	800	
Steers (320kg)	25	320kg		5-Jul	12-Jul	7	7	9.5	238	1663	4000	2700
Closed	0			12-Jul	11-Aug	0	30		0	0		
Steers (520kg)	110	520kg		11-Aug	13-Aug	2	2	11.5	1265	2530	3200	1800
Closed	0			13-Aug	31-Aug	0	18		0	0		1800

Days in period	183
Days grazed	9
Days closed	174
DSE days	4,193
DSE days per ha	1536
Stocking pressure (DSEs per ha)	171
Stocking rate for period (DSEs per ha)	8.4

Jen Light: Paddock Grazing Record

Paddock: China
Area: 2.9ha

A	B			C		D		E					
Stock grazing paddock				**Grazing period**				**DSEs**			**Pasture and feeding**		
Type of stock	**No.**	**CS or live-weight IN**	**CS or live-weight OUT**	**Date In**	**Date Out**	**Days grazed**	**Days in period**	**DSEs per head**	**DSEs for mob**	**DSE days**	**Available pasture (kg/ha)** before grazing	**Available pasture (kg/ha)** after grazing	**Hand feeding** MJ per day
Closed	0			1-Mar	30-Mar	0	29		0	0	700		
XB Ewe lambs	225			30-Mar	1-Apr	2	2	1.3	293	585	1300	700	
Closed	0			1-Apr	7-Jun	0	67		0	0			
XB Ewe hoggets	224	3	3	7-Jun	9-Jun	2	2	1.5	336	672	1500	1100	
Closed	0			9-Jun	24-Aug	0	76		0	0			
XB Ewe hoggets	224	3	3	24-Aug	30-Aug	6	6	1.5	336	2016	1700	1100	
Closed	0			30-Aug	31-Aug	0	1		0	0		1100	

Grazing Summary

Days in period	183
Days grazed	10
Days closed	173
DSE days	3,273
DSE days per ha	1129
Stocking pressure (DSEs per ha)	113
Stocking rate for period (DSEs per ha)	6.2

DSE ratings for various classes of livestock based on ME requirements.

Compiled by Tim Prance, Consultant, Pastures and Grazing Systems, Victor Harbor

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Mature ewes

Liveweight	Dry	Pregnant (last month)		Lactating (average to weaning)		average for year
kg		Single	Twin	Single	Twin	
50	1.0	1.4	1.6	2.1	2.7	1.5
60	1.2	1.6	1.9	2.5	3.1	1.8
70	1.3	1.8	2.2	2.8	3.6	2

Growing lambs

Liveweight	Growth (g/day)			
kg	50	100	150	350
20	0.5	0.6	0.8	1.0
30	0.7	0.8	1.0	1.5
40	0.8	1.0	1.3	2.0

Wethers

Liveweight	
50 kg	1.0
60 kg	1.2
70 kg	1.4

Breeding cattle

Liveweight	dry	Pregnant	Lactating		average for year
			0-3mnth	3-9 mnth	
kg					
400	4.6	6.2	10	13.8	9
500	5.4	6.9	10.8	15.4	12
600	6.2	7.7	12.3	16.9	14

Growing cattle

Liveweight	growth (kg/day)		
kg	0	0.5	1
200	3.1	5.4	7.7
300	3.8	7.3	9.2
400	4.6	9.2	10.8

DRY SHEEP EQUIVALENTS.

Stocking pressure and stocking rates are commonly expressed as Dry Sheep Equivalents (DSE)

One DSE is the amount of energy (8.5 MJ ME/day) required to maintain a 50kg wether in condition score 2.5

A DSE is only a rough estimate of an animal's feed requirements. The **DSE rating** will vary considerably depending on whether the calculation is based on **actual** ME **intake**, or ME **requirements**

For example, if a 60 kg ewe with one lamb has a **ME requirement** of 23 MJ/day, then DSE rating = 23 ÷ 8.5 mjME = 2.7 DSE
The same ewe grazing a high quality pasture with only 1000 kg/ha feed on offer may only have an **ME intake** of 21 MJ/day, so her DSE rating will be 21 ÷ 8.5 mj ME = 2.5 DSE.

The DSE ratings used in these tables are based on **requirements.**

including 30% pasture wastage

Mature ewes

Liveweight	Dry	Pregnant (last month)		Lactating (average to weaning)		average for year
kg	Dry	Single	Twin	Single	Twin	
50	1.3	1.8	2.1	2.7	3.5	2.0
60	1.5	2.1	2.5	3.3	4.0	2.3
70	1.7	2.3	2.9	3.6	4.7	2.6

Growing lambs

Liveweight	Growth (g/day)			
kg	50	100	150	350
20	0.6	0.8	1.0	1.3
30	0.9	1.1	1.3	1.9
40	0.8	1.3	1.7	2.6

Wethers

Liveweight	
50 kg	1.3
60 kg	1.6
70 kg	1.8

Breeding cattle

Liveweight	dry	Pregnant	Lactating		average for year
			0-3mnth	3-9 mnth	
kg					
400	6	8	13	18	14
500	7	9	14	20	16
600	8	10	16	22	18

Growing cattle

Liveweight	growth (kg/day)		
kg	0	0.5	1
200	4.0	7.0	10.0
300	5.0	9.5	12.0
400	6.0	12.0	14.0