Grain on Grass 2022/23

Producer Demonstration Site

Demo Results Year 1 (Summer)

Introduction

- This project will demonstrate that the use of forage and grain feed tests to develop a grain ration to supplement feed livestock grazing forage crops/tropical pastures will lead to an increase in live weight gain enabling improved production efficiency and increased profitability for producers in Central West and Northern NSW.

- Producers are grazing dual purpose and grazing winter crops. Due to the drought, many producers have invested in grain feeders and feed mixers, which are now not being used. Most grazier are also grain producers and therefore have grain on hand. There is an opportunity for these producers to utilize feeding equipment and on farm grain stores to increase weight gain of both feeder cattle and lambs on forage/dual purpose crops. By utilizing a small amount of low value grain, producers will be able to turn off stock quicker and therefore increase carrying capacity without increasing the cost of forage production.

Producer Demonstration Site

Objective

By November 2024, in the Warrumbungle shire in Central West NSW:

- Demonstrate the use of supplementing grain while grazing forage crops to increase:
    a. Live weight gain/head/day by 20%
    b. Carrying capacity due to faster stock turnoff by 3.5%
- Demonstrate the use of supplementing grain while grazing forage crops to maintain carcass quality and market specification while decreasing grazing days by 13%
- Increased awareness of the use of feed tests to determine feed quality by 100 percent of core producers and 25% of observers
- Increased awareness of the use of carcass feedback to ensure adherence to target market specifications, by 100 percent of core producers
- Increased skill of 75% of core producers to formulate a supplementary feeding ration by using a feed test.

Producer Demonstration Site

Tiona - Shannon

- Demo commenced 3rd Feb 2023 (48 Days)
  - 106 Angus Steers (380kgs avg)
- Side-by-side paddocks of Premier Digit
  - Bottom Windmill
  - Andrews
- Steers split into 2 even mobs
  - Control – 1kg/hd/day Oats – Trail Fed
  - Treatment – 3kg/hd/day Oats – Self Feeder

ANALYSIS RESULTS				
Test Description	LOR	UNITS	1 Bottom Windmill	2 Andrews
Dry Matter	0.5	%	33.8	34.1
Moisture		%	66.2	65.9
Neutral Detergent Fibre - NIR	10	%	68	69
Acid Detergent Fibre - NIR	4	%	33	35
Crude Protein - NIR	2	%	7.1	4.4
Inorganic Ash - NIR	3	%	8	7
Organic Matter - NIR		%	92	93
DMD	39	%	50	49
DOMD	38	%	50	48
Calculation of ME	4.3	MJ/kg DM	7.1	6.8
WSC - NIR	4	%	<4.0	4.0
AFIA Hay and Silage Grade			NO GRADE	NO GRADE

Tiona - Shannon

Steers Trail-fed. Bottom Windmill	
Total Cost of Grain	$810
Total Cost of Labour	$240
Cost Grain + Labour	$1,050
Cost Grain + Labour (per tonne)	$389
Cost Grain + Labour (per kg)	$0.39
Grain Consumed per day (kgs)	56
Grain Consumed per head (kgs)	1.3
Cost/hd/day	$0.49
Cost/hd/Demo Period	$23.33

Tiona - Shannon

Steers Self-feeder. Andrews Paddock	
Total Cost of Grain	$2,310
Total Cost of Labour	$300
Cost Grain + Labour	$2,610
Cost Grain + Labour (per tonne)	$339
Cost Grain + Labour (per kg)	$0.34
Grain Consumed per day (kgs)	160
Grain Consumed per head (kgs)	3.2
Cost/hd/day	$1.09
Cost/hd/Demo Period	$52.20

Producer Demonstration Site

Tiona - Shannon

	Cost Benefit / Day		
	Cost/hd/day	Avg $ Liveweight/hd/day	Cost Benefit
Beef - Trail	$0.49	$3.45	$2.96
Beef - Self-feeder	$1.09	$3.55	$2.46

	Cost Benefit / Day		
	Cost/hd/day	$ gain/hd/day	Cost Benefit
Beef - Trail	$0.49	$5.11	$4.62
Beef - Self-feeder	$1.09	$5.21	$4.12

Producer
Demonstration Site

Blenheim - Baker

Demo commenced 6th Feb 2023 (60 days)

- 20 Angus steers & 20 Friesian steers (290kgs & 300kgs)
- Steers split into 2 mobs – Control & Treatment

Paddock split in half with electric fence and trough

Control

- Received no supplement

Treatment

- 5kgs/hd/day Oats/Barley – Self Feeder

ANALYSIS RESULTS			
Test Description	LOR	UNITS	1 Road Paddock
Dry Matter	0.5	%	41.4
Moisture		%	58.6
Neutral Detergent Fibre - NIR	10	%	65
Acid Detergent Fibre - NIR	4	%	35
Crude Protein - NIR	2	%	7.7
Inorganic Ash - NIR	3	%	8
Organic Matter - NIR		%	92
DMD	39	%	46
DOMD	38	%	47
Calculation of ME	4.3	MJ/kg DM	6.5
WSC - NIR	4	%	<4.0
AFIA Hay and Silage Grade			NO GRADE

19th Jan 23

Producer Demonstration Site

17h Feb 23

Producer
Demonstration Site

Blenheim - Baker

Blenheim – Treatment (Supplement Fed)	
Total Cost of Grain	$1,500
Total Cost of Labour	$210
Cost Grain + Labour	$1,710
Cost Grain + Labour (per tonne)	$285
Cost Grain + Labour (per kg)	$0.29
Grain Consumed per day (kgs)	100
Grain Consumed per head (kgs)	5.0
Cost/hd/day	$1.43
Cost/hd/Demo Period	$85.50

Producer Demonstration Site

Blenheim - Baker

	Total ADG	$/Kg	Avg $ Liveweight/hd/day	$ gain/hd/day
Beef - Grass	0.49	$4.50	$2.21	
Beef - Grain	0.67	$4.50	$3.02	$0.80
Dairy - Grass	0.56	$3.00	$1.67	
Dairy - Grain	1.02	$3.00	$3.06	$1.39
Combined - Grass	0.54	$3.59	$1.94	
Combined - Grain	0.88	$3.45	$3.04	$1.10

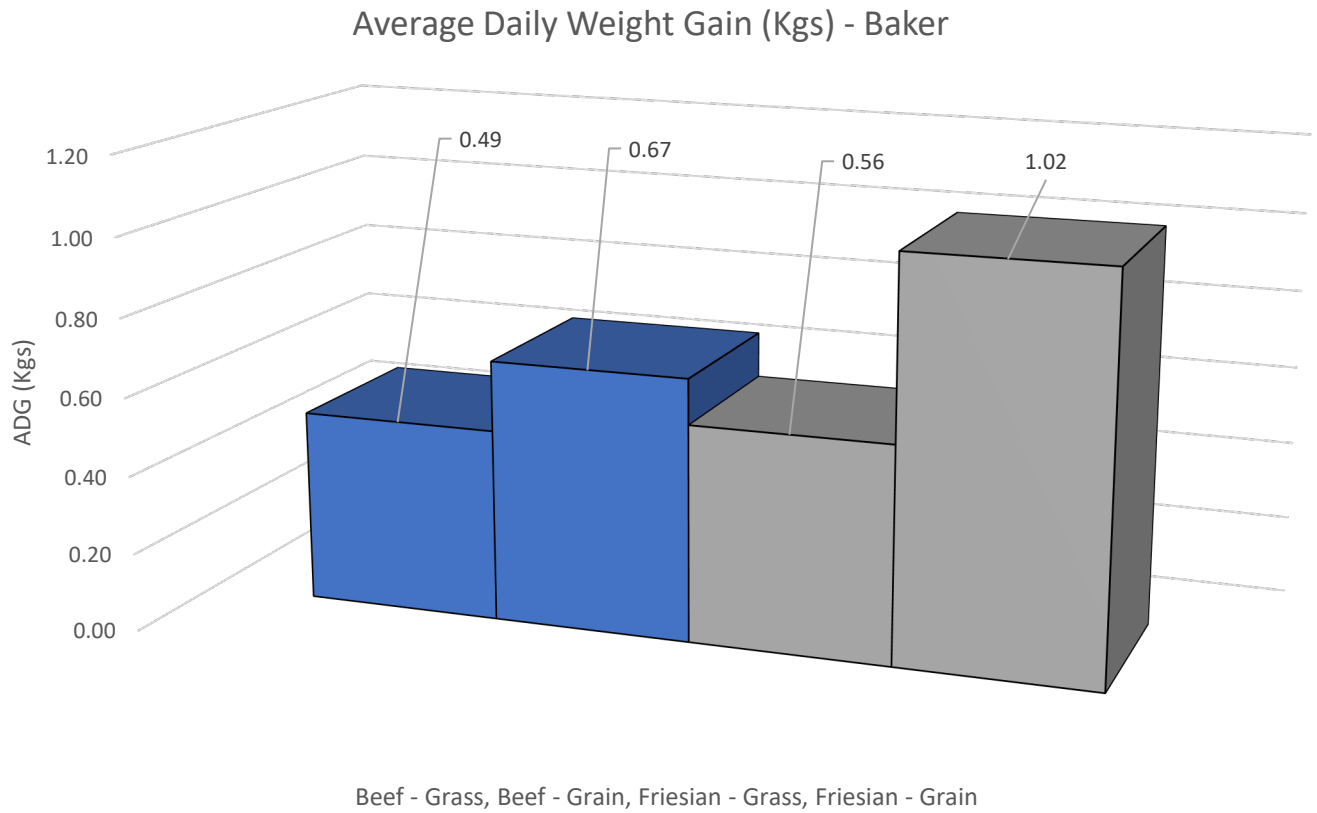
Producer Demonstration Site

Blenheim - Baker

	Cost Benefit / Day – Treatment only		
	Cost/hd/day	Avg $ Liveweight/hd/day	Cost Benefit
Beef	$1.43	$3.02	$1.59
Dairy	$1.43	$3.06	$1.63
Combined	$1.43	$3.04	$1.61

	Cost Benefit / Day		
	Cost/hd/day	$ gain/hd/day	Cost Benefit
Beef	$1.43	$0.80	-$0.62
Dairy	$1.43	$1.39	-$0.03
Combined	$1.43	$1.10	-$0.33

Producer Demonstration Site


Average Daily Weight Gain (Kgs) - Baker
ADG (Kgs)
1.20
1.00
0.80
0.60
0.40
0.20
0.00
0.49
0.67
0.56
1.02
Beef - Grass, Beef - Grain, Friesian - Grass, Friesian - Grain

Conclusion

- Possible to increase production (weight gain) of weaner/yearling cattle with the addition of a grain supplementation on tropical pastures.
- The determining factor that will influence the adoption of supplementation is the return on investment (cost of grain & labour v's weight gained).
- May be best for producers to undertake some basic calculations to ensure that there is a financial benefit to supplement livestock on tropical pastures.
- Certain scenarios where the importance of increase in liveweight gain may be placed above the immediate direct financial cost.

Grain on Grass 2022/23

Producer Demonstration Site

Demo Results Year 2 (Winter)

Thompson

- Demo commenced 12th July 2023 (60 Days)
  - Angus & Angus cross Steers (220kgs avg)
- Side-by-side paddocks of Grazing Oats
  - Old Cart
  - Cottage
- Steers split into 2 mobs
  - Control – Forage Oats
  - Treatment – 1kg/hd/day Total Ration – Self Feeder

ANALYSIS RESULTS

Dry & Grind inc Dry Matter & Moisture	LOR	UNITS	1 Old Cart	2 Cottage
Dry Matter (DM)	0.5	%	22.7	20.6
Moisture	0	%	77.3	79.4
Standard Forage Package - NIR	**LOR**	**UNITS**	**1 Old Cart**	**2 Cottage**
Neutral Detergent Fibre (NDF) - NIR	10	%	35	32
Acid Detergent Fibre (ADF) - NIR	4	%	17	16
Crude Protein (CP) - NIR	2	%	15.7	17.1
Inorganic Ash - NIR	3	%	11	11
Organic Matter (OM) - NIR		%	89	89
Dry Matter Digestibility (DMD) - NIR	39	%	85	86
DOMD - NIR	38	%	79	78
Calculation of Metabolisable Energy (ME) - NIR	4.3	MJ/kg DM	13.0	12.9
Water Soluble Carbohydrates (WSC) - NIR	4	%	18.8	19.6
AFIA Hay and Silage Grade			NO GRADE	NO GRADE

Thompson

Weight of supplement (kg)	Supplement cost ($/head)	Intake of DM		Weight gain (kg)
		Pasture (kg)	Supplement (kg)	
0.00	0.00	9.12	0.00	1.40
1.00	0.70	8.58	0.66	1.48
1.50	1.05	8.58	0.66	1.48
2.00	1.40	8.58	0.66	1.48

Grazfeed

Thompson

Steers were reweighed on the 29th Aug

	Weights	
	Control	Treatment
12th Jul	211	237
29th Jul	230	257

ADG = Control 1.16kg
Treatment 1.17kg

Producer Demonstration Site

Thompson

Steers final weight on the 10th Sept

	Weights	
	Control	Treatment
12th Jul	211	237
29th Jul	230	257
10th Sept	320	335

ADG = Control 1.16kg

Treatment 1.18kg

Thompson

	Average Daily Gain (kg)	
	Control	Treatment
Angus	1.19	1.43
Angus X	1.00	0.92

ADG = Angus - 1.31kg

Angus X - 0.96kg

Demo Results

Producer
Demonstration Site

McGlashan

Demo commenced 17th July 2023 (60 days)

- Angus & Angus Cross Steers
- Steers split into 2 mobs – Control & Treatment

Mobs were split across 2 Lucerne Paddocks

Control

- Received no supplement

Treatment

- 8kgs/hd/day TMR (Wheat, Hay, Pellet)– Self Feeder

ANALYSIS RESULTS

Dry & Grind inc Dry Matter & Moisture	LOR	UNITS	1 Lucerne
Dry Matter (DM)	0.5	%	31.6
Moisture	0	%	68.4

Standard Forage Package - NIR	LOR	UNITS	1 Lucerne
Neutral Detergent Fibre (NDF) - NIR	10	%	52
Acid Detergent Fibre (ADF) - NIR	4	%	34
Crude Protein (CP) - NIR	2	%	22.1
Inorganic Ash - NIR	3	%	10
Organic Matter (OM) - NIR		%	90
Dry Matter Digestibility (DMD) - NIR	39	%	58
DOMD - NIR	38	%	53
Calculation of Metabolisable Energy (ME) - NIR	4.3	MJ/kg DM	7.8
Water Soluble Carbohydrates (WSC) - NIR	4	%	<4.0
AFIA Hay and Silage Grade			NO GRADE

Producer Demonstration Site

Demo Results

Producer
Demonstration Site

McGlashan

Steers Self-feeder	
Total Cost of Ration	$23,328
Total Cost of Labour	$972
Cost Ration + Labour	$24,300
Cost Ration + Labour (per tonne)	$405
Cost Ration + Labour (per kg)	$0.40
Ration Consumed per day (kgs)	960
Ration Consumed per head (kgs)	8
Cost/hd/day	$3.24
Cost/hd/Demo Period	$194.4

Producer Demonstration Site

McGlashan

	Total ADG	$/Kg	Avg $ Liveweight/hd/day	$ gain/hd/day
Grass	0.9	$3.00	$2.70	
Grain	1.6	$3.00	$4.80	$2.10

	ADG	% Change
Grass	0.9	78
Grain	1.6	

Producer Demonstration Site

McGlashan

	Cost Benefit / Day		
	Cost/hd/day	$ gain/hd/day	Cost Benefit
Beef	$3.24	$2.10	-$1.14

Producer Demonstration Site

McGlashan

Producer Demonstration Site

Grain on Grass 2022/23

Questions

Producer Demonstration Site