Setting Cattle up for Optimum Performance and Health

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Why Are We Here?

To improve our knowledge and understand our responsibilities

To set our cattle up for a better life and improve performance for every part of the chain

To understand the effects of handling cattle

To align all parts of the supply chain – avoid working in isolation

Ask ourselves “why are we here?”

Why Worry About Cattle Handling?

Industry expectations

Employer expectations – You are the face of your company

Genuine animal welfare responsibility – take pride in looking after animals

Protect our industry from minority groups - activists

Major Reason
Guys like me – (customers)

Three Components

- Prior to processing
- Processing – yards, processing, handling, loading, trucking
- Post Processing

What we do at all stages of the supply chain has a significant effect on the animals long after the event.

It doesn't end when you shut the gate.

Supply Chain

Enterprise	Activity	Possible Lost Production	
Breeding	Muster Draft Process	10	30
	Paddock		
	2nd round	10	30
Transport		10	30
Grower	Process	10	30
	Paddock		
	Muster Draft Process	10	30
Transport		10	30
Backgrounder	Process	10	30
	Paddock		
	Muster Draft Process	10	30
Transport		10	30
Feedlot	Process	10	30
	Pen		
	Draft	10	30
Transport			
	Total Disrupted Days	**110**	**330**

Importance of Setting Cattle up

- Recipe for success
  - More units
  - More weight
  - Less “Days to Cash”

- After 90 days in the feedlot, educated animals may have an estimated net value of $25/head more than cattle that have been weaned into the paddock with minimal handling.

Big Question –

What is the requirements of the next destination for these cattle

(Determines everything we do)

Three Significant Effects of Handling

- Influences their behaviour for the rest of their life
- Health, Performance and Welfare
- Yield and Quality

Critical Points of Performance

- Be set up mentally and physically
- Be healthy – free from parasites, disease, injuries
- Eat more
- Digest it efficiently – healthy gut, access to good quality, clean water

SECRET RECIPE

CONSISTANCY, CONSISTANCY, CONSISTANCY

Cattle Eating Behaviour

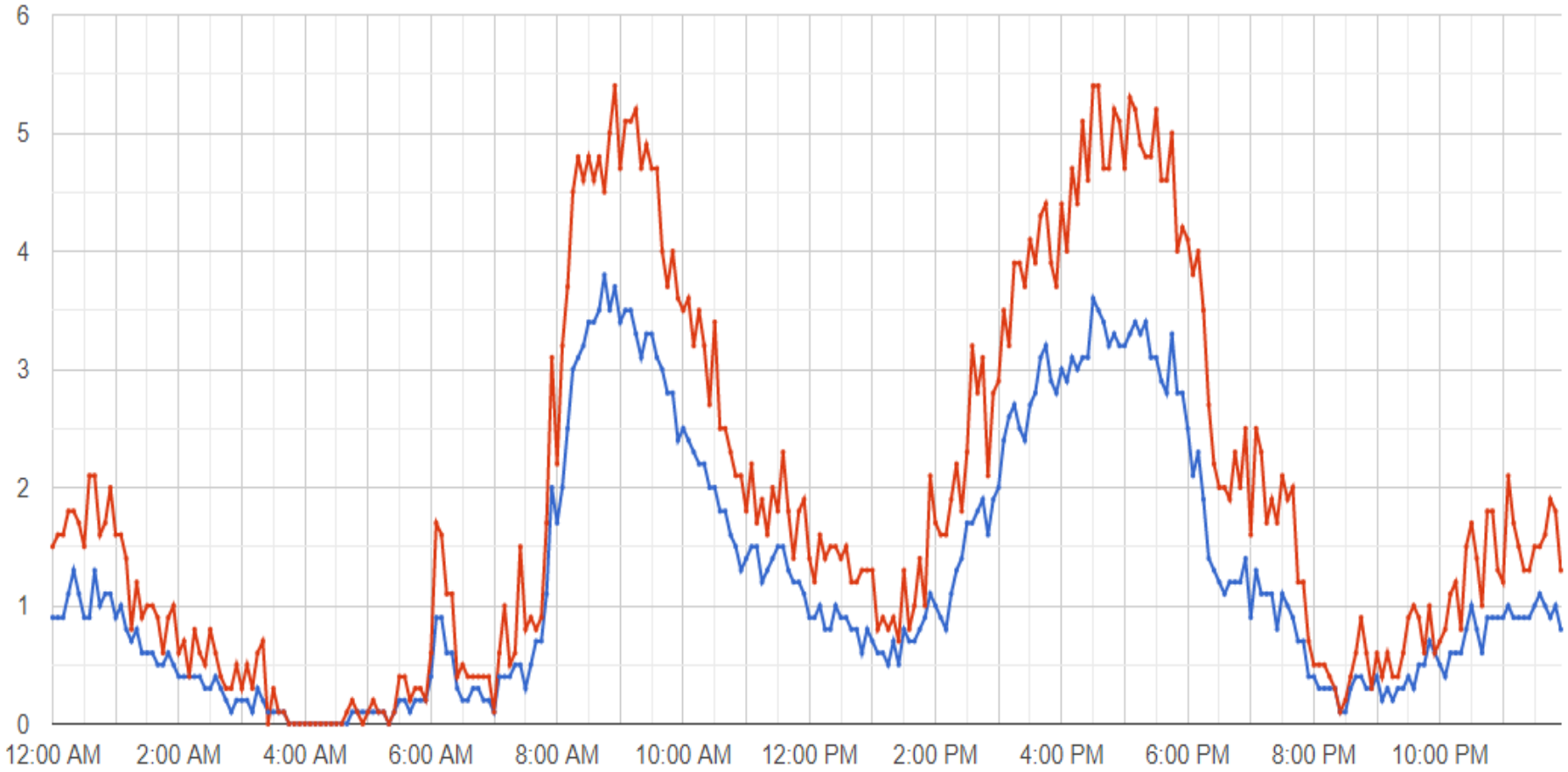
- Creature of Habit - routine
- Eat most at 8am & 4pm
- Eat in the same place - (example – Like us with our smoko room seats)
- Eat between 7 and 25 KG / head / day
  - Reduce bouncing
  - **(Explain Bouncing – next slide)**
- **Please note that these simple principles apply to feedlot cattle and paddock cattle – its animal biology.**

Bouncing

25kg

7 kg

Cattle Eating Patterns



Feeding Hay

Feed hygiene and wastage

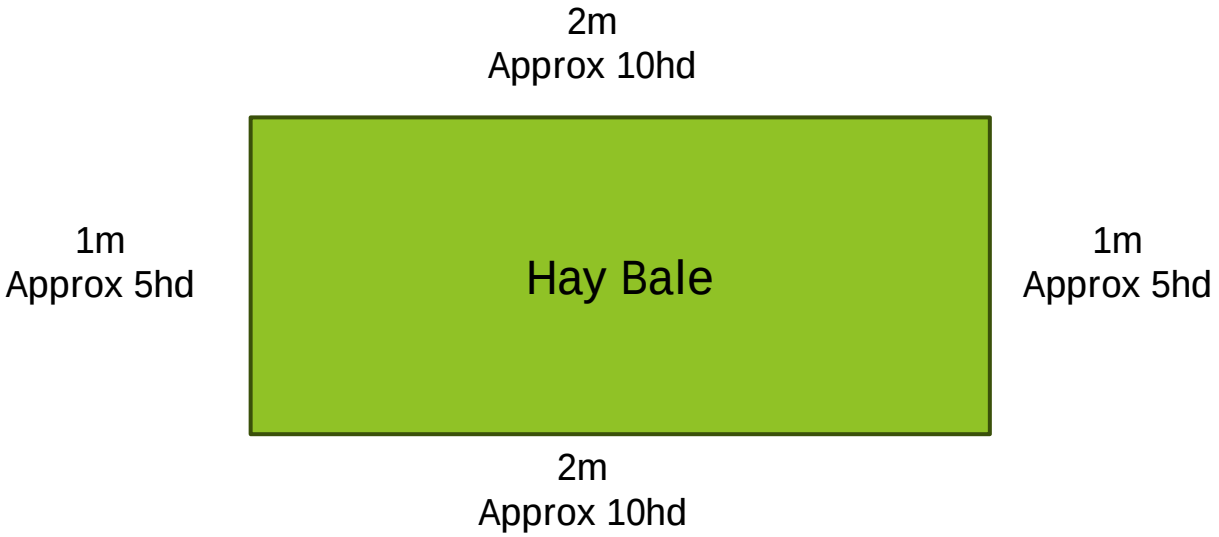
1- Good quality – Minimum 8-10MJ ME/kg DM, >8% Crude Protein, >58% Digestibility

2 - Sufficient access (space of 15-20 cm/hd)

3 - Correct and consistent time

4 - Correct amount – 2 – 2.5% body weight (250kg needs 5-6kg/hd or 100hd needs 500-600kg)

Feeding Hay Bales - Space



Amount of Hay for a 100kg weaner to gain 0.5kg /day

Accuracy and Consistency

	First Pen in Feeding Order			
Feed Date	First Pen Fed	Target Start Feeding Time	Time 1st Pen Fed	Variance Tdy to Tr
Sat, 1 August, 2020	A1	07:00 AM	06:58 AM	00:02
Sun, 2 August, 2020	A1	07:00 AM	07:00 AM	00:00
Mon, 3 August, 2020	A1	07:00 AM	07:00 AM	00:00
Tue, 4 August, 2020	A1	07:00 AM	07:00 AM	00:00
Wed, 5 August, 2020	A1	07:00 AM	07:00 AM	00:00
Thu, 6 August, 2020	A1	07:00 AM	07:00 AM	00:00
No. of Days in Range	6	Average	06:59 AM	00:00
		Std. Deviation	0.75	
		Earliest	06:58 AM	
		Latest	07:00 AM	
		Range	00:02	

Water Availability and Quality

- It is also critical that all cattle get fresh, clean water at all times. Short term water deprivation has significant long-term effects.
- Periods of water restriction pose a risk to animal welfare and results in both short and long-term production losses.
- Water intake is directly related to feed intake and growth rates. Interruptions in water supply can take from **10 days to several months for recovery** to normal growth patterns.
- **A regular trough cleaning program is essential.**

It’s the small things that matter

- **What can we do better today**
- **Work on the little things**
- **Plan everything – Its amazing how many times people aren’t ready**
- **Following are some examples of how little things matter**

Performance Effects

- In 20 000 head operation - $1 / head / day = + or - $ 7.3mil
- Every 100 grams per day consumption increase = $100,000.00
- Feed Conversion at 6:1 rather than 7:1 = $5.2mil
- Reducing COG from $3.02 to $2.35 / kg = $9.15mil
- Improve ADG by 0.2kg/day = $6.16mil

BEEF CRC TRIAL

- To compare stock handling methods impact on weight loss
- 2 mobs – 90 head each

- 1st mob handled in a low stress environment as mentioned from muster to loading
- 2nd mob handled in a higher stress manner e.g. no control when mustering and taking to the yard, noise, sticks and electric prodders used to move stock through yards & loading

- All stock weighed at departure from Lanreef and then weighed again after 350 km truck trip to Wainui feedlot to get arrival weight

BEEF CRC TRIAL RESULTS

1st mob (Quiet Controlled environment)

- Dispatch wght – 362 kg
- Arrival wght – 343 kg

Curfew loss – 19 kg or 5.24% of animals wght

2nd mob (Uncontrolled environment)

- Dispatch wght – 366 kg
- Arrival wght – 337 kg

Curfew loss – 29 kg or 8% of animals wght

RESULTS IN DOLLAR VALUE

- Difference of 2.76% - 10 kg per animal
- $ value at $ 3.50/kg = $35 per animal

Every 1000 head moved is a potential loss or gain of $35,000.00

Moved approx. 300 000 head. This equates to a potential loss or gain of $10,500,000.00

Health and Performance at Destination

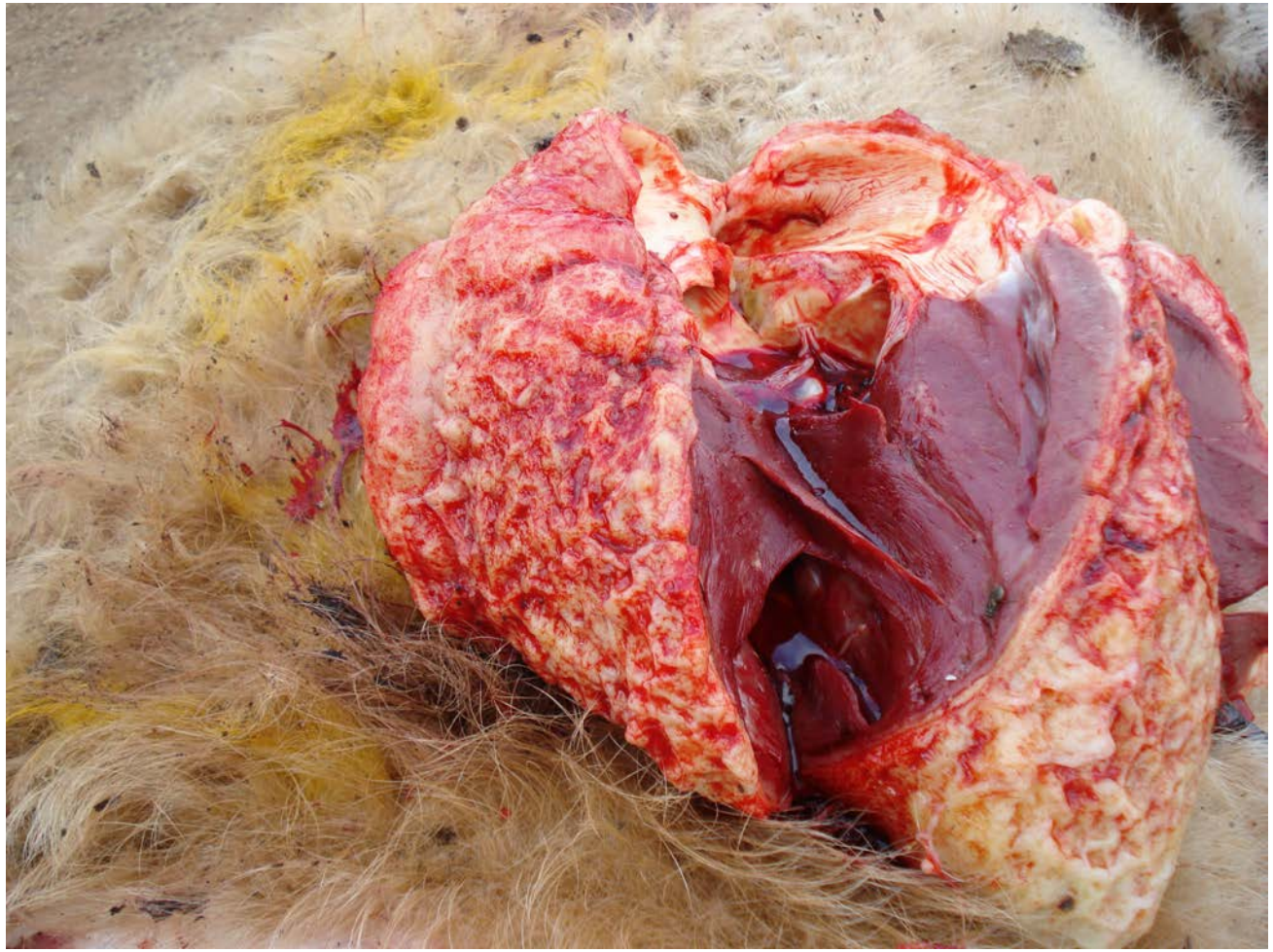
- **Non eaters (dead belly's)** - Loss of rumen microbes - Extended / stressful events / journeys = rapid changes in PH and Microbe loss – unable to digest at destination.
- **Injuries** – Significant losses in feet / limb injuries after transit. Many not visible for several weeks after transit.
- **Respiratory disease** – BRD morbidity can range from 1% - 40% in stressed animals (treatment costs range from $5 - $35 / hd). BRD Mortality can range from 1% - 5%.
- **Feet abscesses** (see later slide)
- **Dark Cutting**

BRD

BRD

BRD

BRD



Feet Abscesses

Feet Abscesses

Feet Abscesses

Feet Health

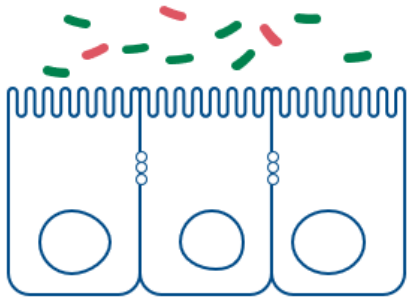
- Race design
- Yard design
- Length of time under pressure
- Rubber in key areas
- Cattle handling
- Avoid wet muddy areas
- Feet baths
- Tipping crushes
- Avoid periods on rough ground

Leaky Gut

Invading pathogens may cause increased intestinal permeability

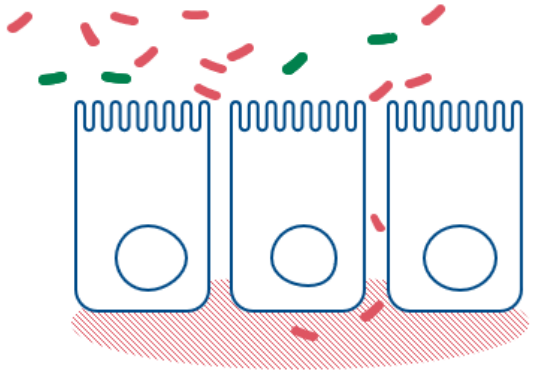
HEALTHY GUT

EUBIOSIS – NORMAL BALANCE



"LEAKY GUT"

DYSBIOSIS – DISRUPTED BALANCE



"LEAKY GUT":

Increased intestinal permeability allows entry of pathogens, undigested food proteins and foreign antigens to the underlying tissue and bloodstream of the host.

PROBIOTIC EFFECTS

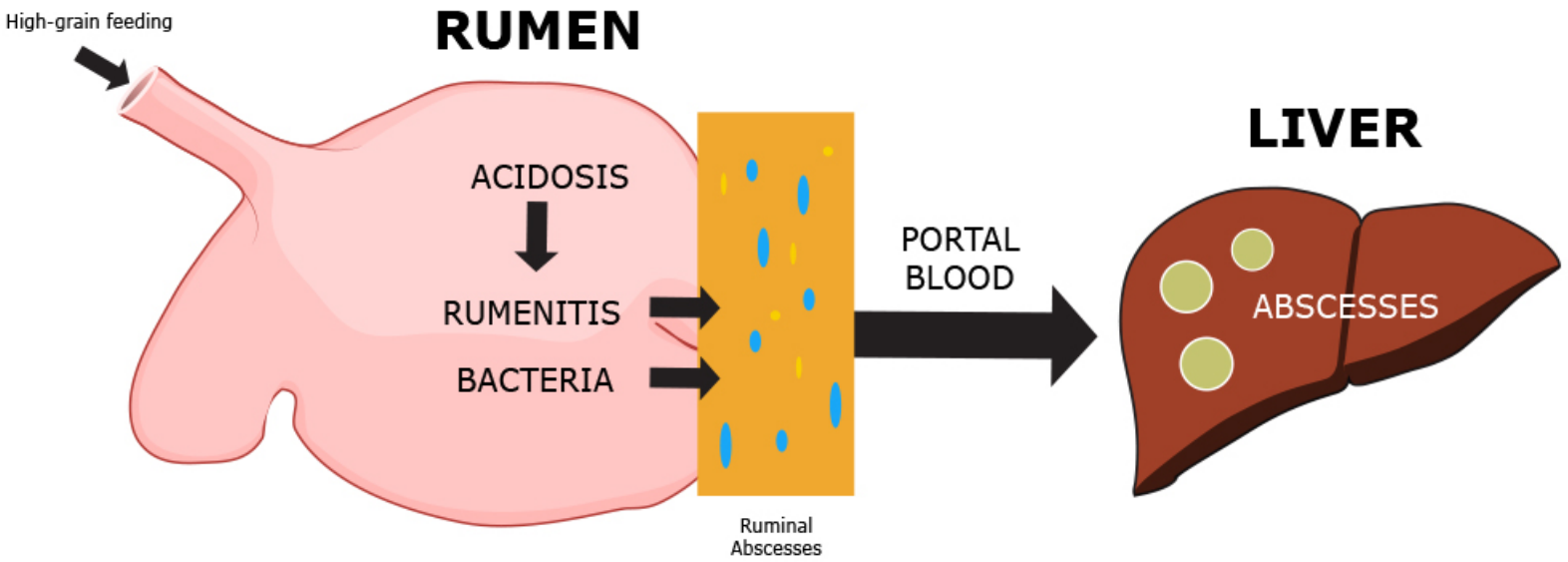
Probiotics have been shown to prevent or reverse increased permeability of the epithelial barrier.

NUTRIMENT HEALTH

CHR. HANSEN

Improving food & health

Leaky Gut



Pathogenesis of liver abscesses in cattle fed a high grain diet.

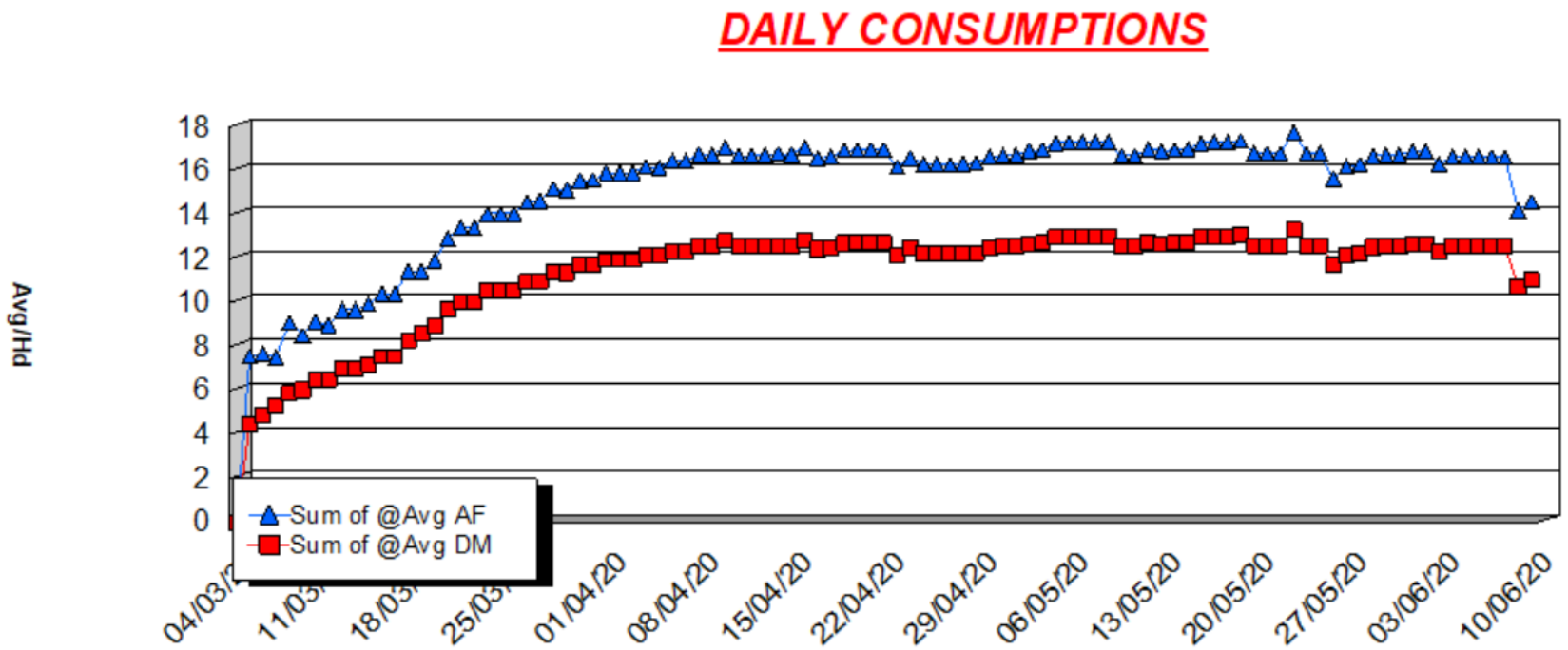
Adapted from Nagaraja, T.G. and M. M. Chengappa, 1998

Liver Abscesses

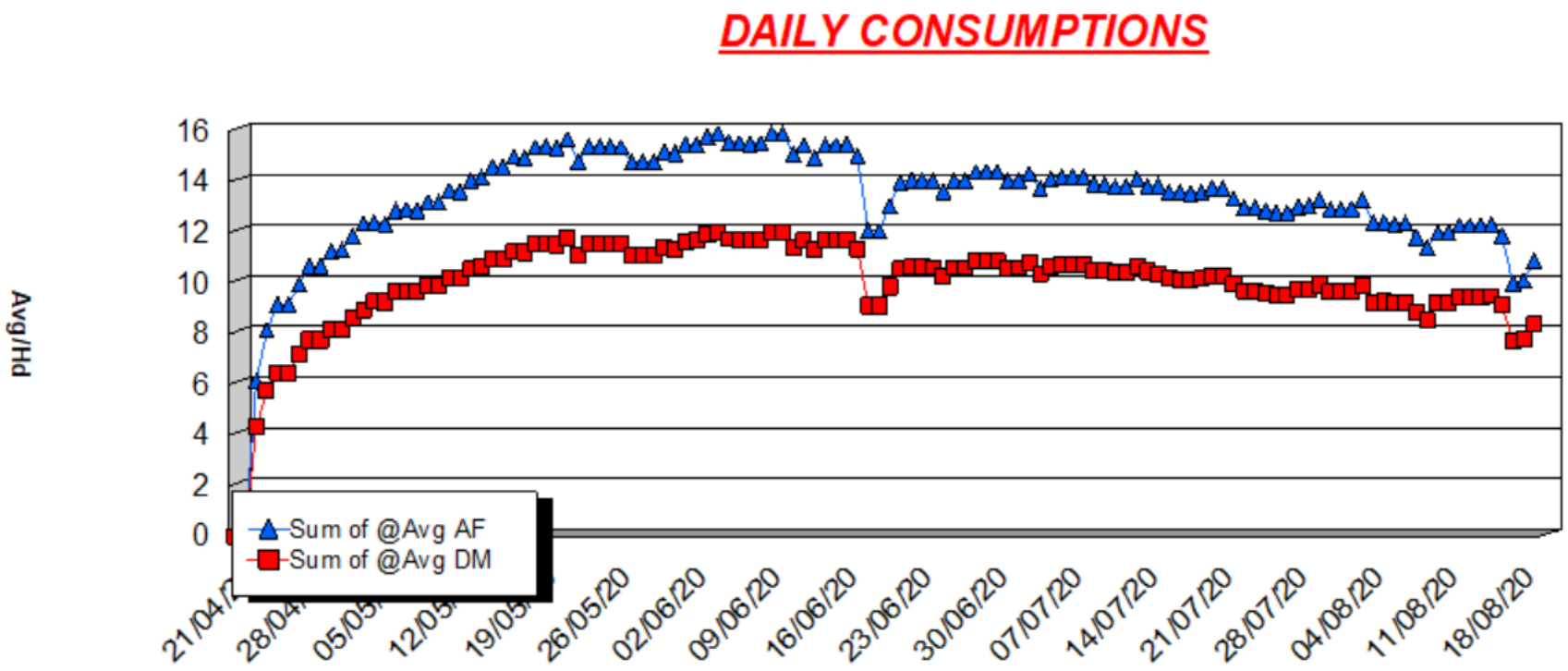
Performance after Handling

How we handle animals has a significant impact on feeding behaviours and performance long after.

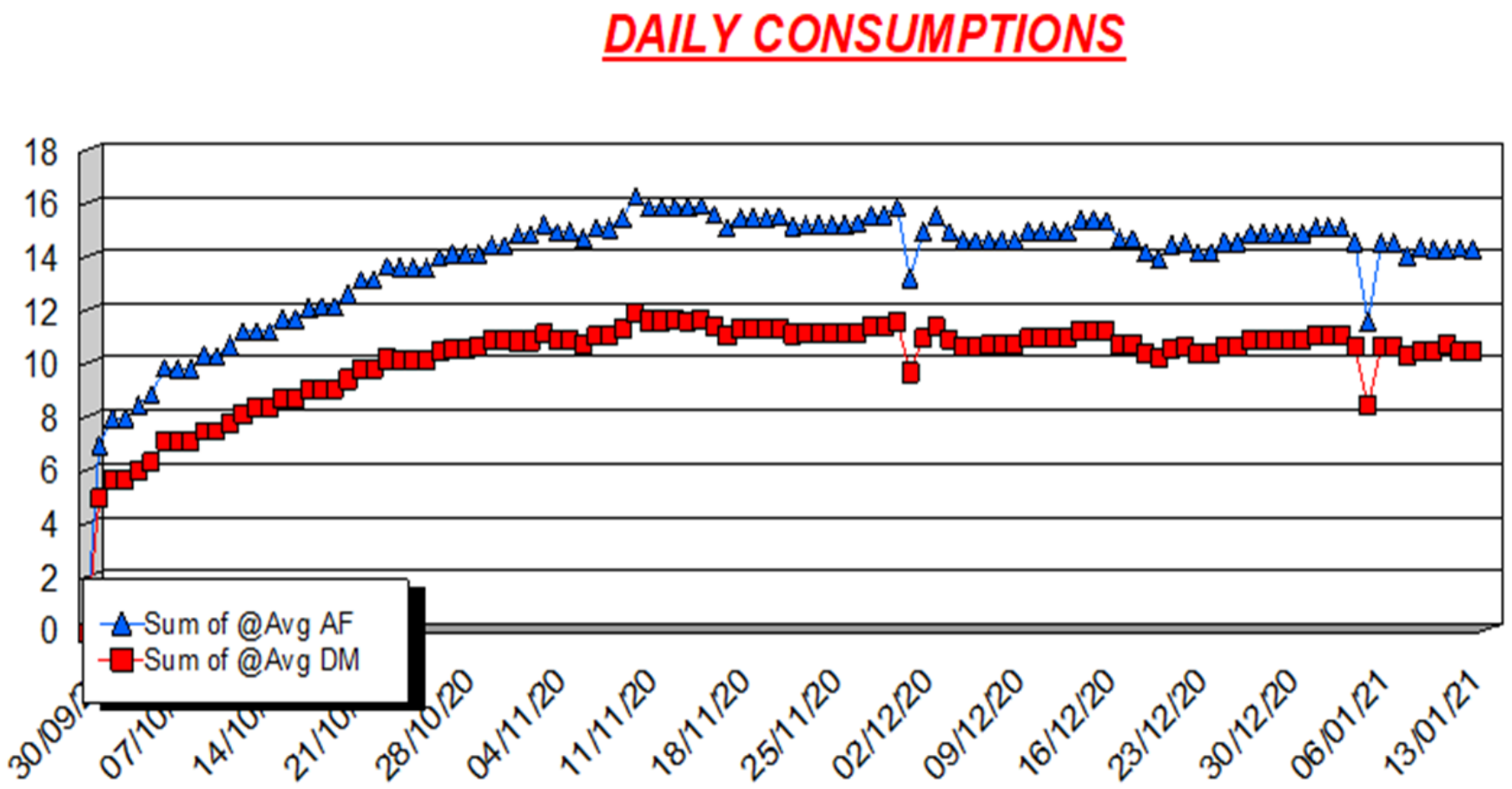
Effects of handling on feed – Good Feed Chart



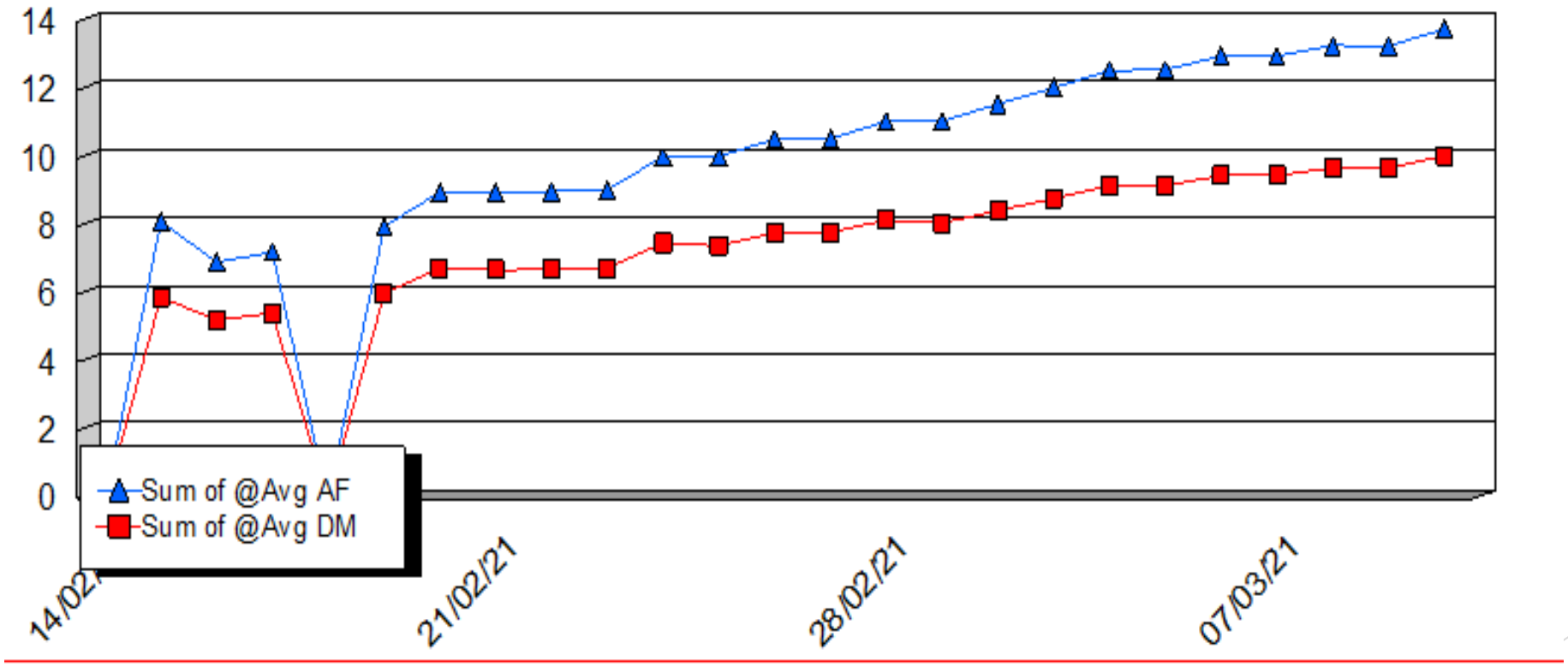
Effects of Handling
$19 334.00 loss for pen of 312hd



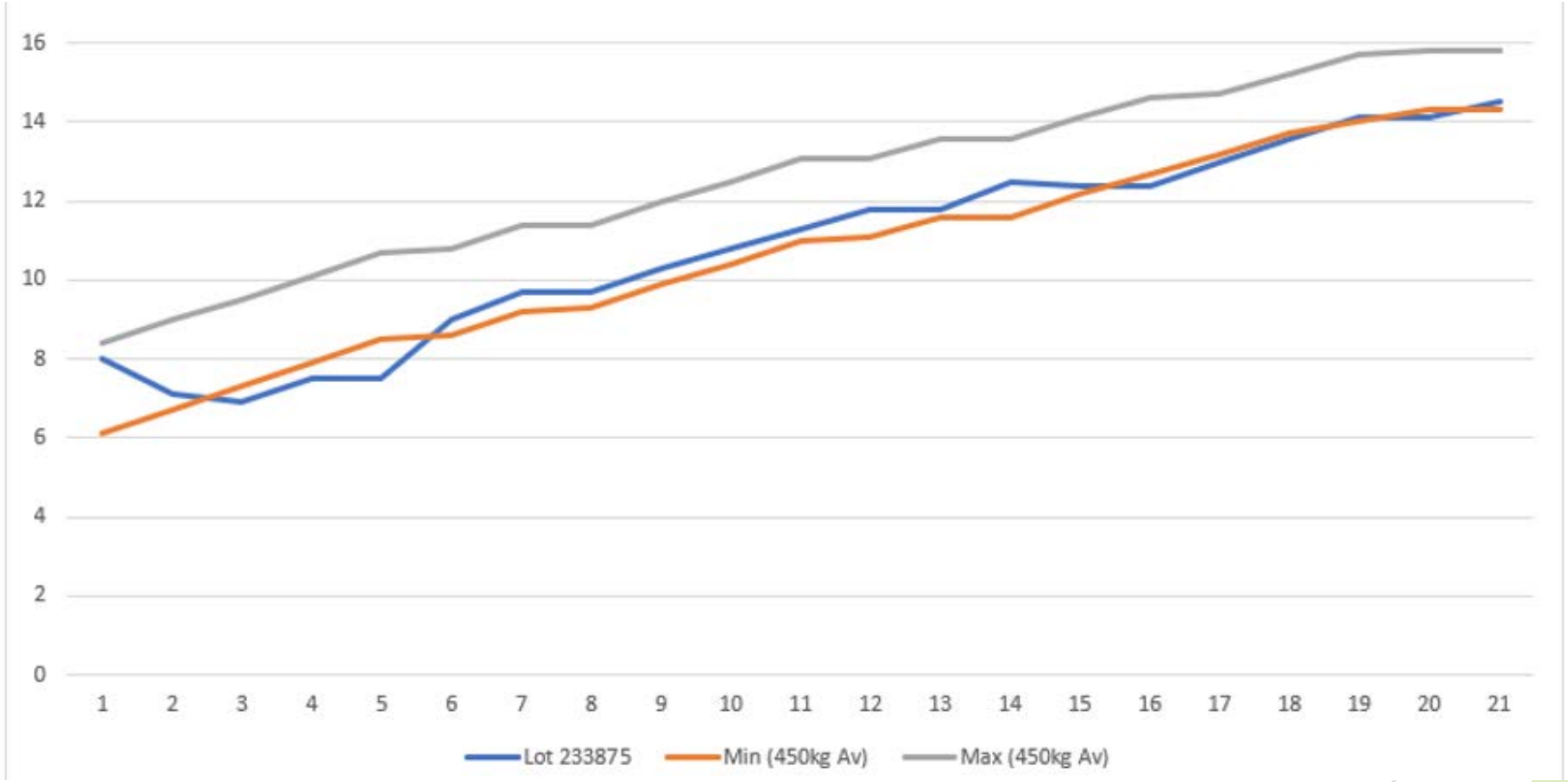
Cattle handling - recovered cattle



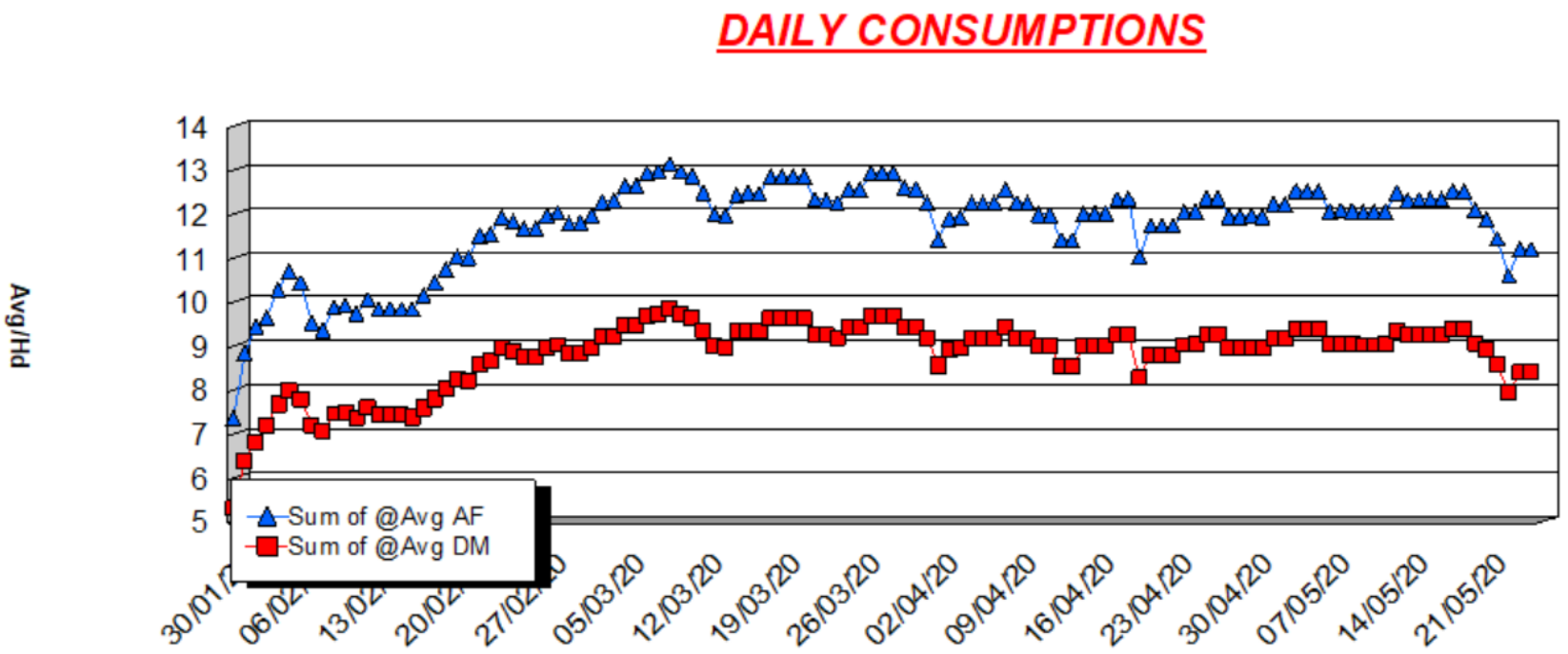
Long Trip Cattle – No Spell



Long Trip Cattle – No Spell



Stressed Cattle Feed Chart



Effect of growth rate in first dry season on feedlot gain, carcase weight and meat toughness - Swans Lagoon

Treatment	Age to reach 420 kg	Feedlot gain (kg/d)	Proportion in carcase weight			LD Instrom Compression (kg)
			<279 kg	280-299	>300 kg	
Low (0.4 kg/d)	26	1.32	0.31	0.19	0.50	2.48
Medium (0.6 kg/d)	24	1.56	0.12	0.44	0.44	
High (0.8 kg/d)	22	1.59	0.05	0.56	0.39	1.95

Older at entry

Higher % out of spec

Tougher

Feedlot growth suffers – don't recover

95% in spec

5/8 Brahman weaned at 2-3 months and given supplements to achieve growth above. Finished in feedlot from 420 kg for 100d.

(JA Lindsay, Swans Lagoon Research Station, North Queensland)

Dark Cutting

Dark Cutting

Glycogen

5.7

5.3

Kill Feedback Prior to Handling Review and Training

Plant	KillDate	property	killLot	Dentition	Values Hd.	Hd. Graded	Live weight	Dress.	HDW.	MS0.	MS1.	MS2.	MS3.	MS4.	MS5.	MS6.	MS7.	MS8.	MS9+.	Avg MS.	MS1+%	MS2+%	MS3+%	MS4+%	MCol 4+	MC4+%	P8 fat	EMA.	5/6th Rib %.
bee	6/04/2020	Wainui	SC16651		88	88	614	56.50%	347	21	61	6								0.90	76%	7%			4	4.5%	15	87	
				2	104	104	612	56.62%	347	24	70	9		1						0.98	77%	10%	1%	1%	2	1.9%	15	88	
				4	24	24	622	56.77%	353	6	15	2	1							1.08	75%	13%	4%		1	4.2%	18	87	
				6	6	6	610	57.74%	352		4		2							2.03	100%	33%	33%				15	87	
			SC16819		4	3	581	58.38%	339	2	1									0.30	33%						14	64	
				2	58	58	575	57.54%	331	17	35	5	1							0.89	71%	10%	2%		8	13.8%	16	87	
				4	15	15	573	56.99%	327	5	8	2								0.95	67%	13%			2	13.3%	15	90	
				6	1	1	554	50.57%	280			1								2.00	100%	100%					8	70	
		Wainui Total			300	299	604	56.81%	343	75	194	25	4	1						0.96	75%	10%	2%	0%	17	5.7%	15	87	
	6/04/2020 Total				300	299	604	56.81%	343	75	194	25	4	1						0.96	75%	10%	2%	0%	17	5.7%	15	87	
	7/04/2020	Wainui	SC16808		20	20	613	56.39%	346	3	14	3								1.00	85%	15%					17	86	
				2	193	192	615	56.41%	347	31	130	27	4							1.02	84%	16%	2%		14	7.3%	16	87	
				4	19	18	624	57.16%	357	2	11	5								1.11	89%	28%					15	83	
				6	1	1	565	58.84%	333		1									1.00	100%						7	97	
			SC16820		5	5	593	56.66%	336	1	3		1							1.20	80%	20%	20%				14	91	
				2	41	39	582	56.55%	329	6	22	9	2							1.12	85%	28%	5%		5	12.8%	17	82	
				4	3	3	594	57.35%	341		2	1								1.33	100%	33%					18	94	
			SC16821		3	3	616	55.76%	344	1	2									0.67	67%						15	86	
				2	13	13	614	58.46%	359	2	11									0.85	85%						16	86	
				6	2	2	585	55.79%	327		2									1.00	100%						11	91	
		Wainui Total			300	296	610	56.58%	345	46	198	45	7							1.03	84%	18%	2%		19	6.4%	16	86	
	7/04/2020 Total				300	296	610	56.58%	345	46	198	45	7							1.03	84%	18%	2%		19	6.4%	16	86	
bee Total					600	595	607	56.69%	344	121	392	70	11	1						1.00	80%	14%	2%	0%	36	6.1%	16	87	
Grand Total					600	595	607	56.69%	344	121	392	70	11	1						1.00	80%	14%	2%	0%	36	6.1%	16	87	

EFFICIENT HANDLING OF STOCK

- Know your cattle
- Know your customers (watch them work cattle)
- Know what the destination requirements
- Know the consequences