

PASTURE UTILISATION:

PROFITABLE PASTURE UTILISATION WITH BEEF CATTLE

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Abstract: The cost/price squeeze that has led to the declining financial fortunes of the beef industry will continue. Some enterprises are making a good profit under these circumstances and it is from these operators that we must learn the elements of successful production. They have embarked on a program of raising stocking rates through an extensive pasture upgrading program, they keep their vehicle and plant costs to a minimum and run at least 10,000 DSE per man. Their herd management revolves around running only productive stock that are either rearing a calf or putting on weight, they calve at the right time to get maximum value from pasture and to reduce hand-feeding, and they impose a rigorous selection program on their replacement heifers and bulls emphasising fertility. They are also good listeners and easy adaptors.

INTRODUCTION

How good are we? We are often told that Australia's farming sector is the most efficient in the world. Farmers in the USA are also told that they are the best. The cost of land in Australia is the main factor in keeping our primary industries competitive, as our cows aren't any better at converting grass to beef and our transport and processing costs certainly aren't the lowest in the world.

Our "terms of trade" are about half what they were 30 years ago and will most probably go on declining (Figure 1), and ABARE reports that the productivity of Australia's grazing industries has not improved in the last 20 years (Figure 2).

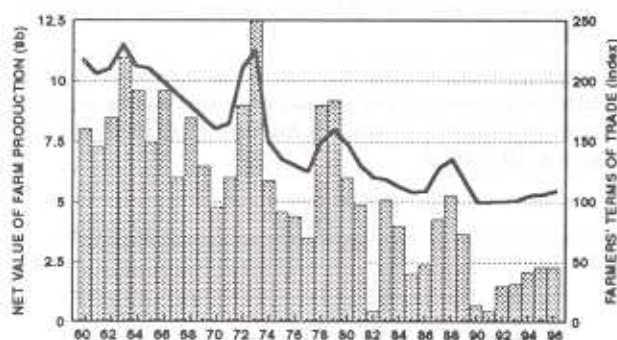


Figure 1: Net value of farm production in Australia and farmers terms of trade (in 1991-1992 dollars) (ABARE)

Nine years out of ten in a mixed grazing enterprise, the profitability of beef production is lower than that of growing wool (Figure 3). But amidst all this gloom and doom some beef cattle producers are doing nicely. A gross margin analysis undertaken in 1991 highlighted the range in performance amongst beef producers in the Goulburn area (Table 1). A more recent survey of 34 farms on the Monaro using full cost absorption (allocation of overheads) reinforced this message (Table 1).

We are all operating on the same playing field, so how come some producers can make a profit and others end up out of pocket?

WHAT FACTORS ARE IMPORTANT?

Delving a bit deeper into the Monaro figures we can pick up some useful information. It is significant that the top 20% of the group surveyed had a higher proportion of their farms sown with improved pastures, and while they also spent more on seed and fertiliser, the additional forage produced meant that their forage costs were half those of the bottom 20% of farmers (Table 1). The extra forage also allowed them to carry twice as many animals (Table 1).

The take home message is that we have to produce as much quality grass as possible, run plenty of stock to utilise it and have just enough labour if our cattle enterprises are to be profitable. Overhead costs are

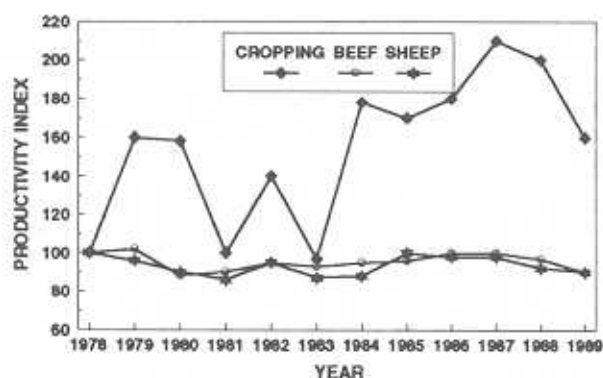


Figure 2: Productivity indices for agricultural activities in Australia (Source: ABARE).

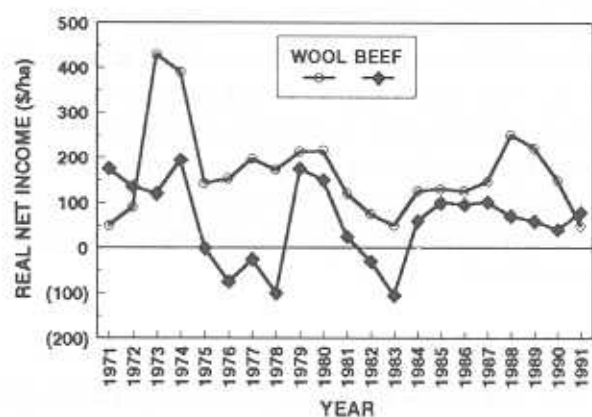


Figure 3: Profitability comparison between wool and beef in Victoria, 1971-1991.

spread over a greater number of livestock plus personnel and plant costs must be kept to a minimum.

If we look at the herd management factors that might influence profitability we can see the importance of overall herd fertility in the equation (Table 1). If a beast is not putting on saleable kilograms or producing a calf there is zero income.

WHAT CAN WE DO?

Stocking Rate

As stressed before, pastures are the engine for a grazing business and must be running at peak performance. Optimal stocking rates cannot be sustained unless high quality pastures are established and maintained. Increasing the stocking rate increases gross income because there are more beasts to sell, and lowers operating costs as they are spread over more animals.

Table 1: Assessment of profitability of beef cattle production in southern NSW using gross margins and full cost absorption methods (Source: Michael Boyce & CO).

Assessment parameter	Producers surveyed	
	Top 25%	Bottom 25%
Goulburn area (1991)		
Gross margin/ha	\$152.72	\$44.12
Gross margin/DSE	\$19.81	\$8.02
Monaro area (1992)		
Net profit/ha	\$72.28	-\$8.99
Net profit/DSE	\$12.74	-\$1.91
Improved pasture	93%	61%
Seed & fertiliser/ha	\$7.46	\$4.62
Fodder cost/ha	\$2.02	\$4.76
Income/ha	\$127	\$44
DSE/ha	6.35	3.82
DSE/person (at 10 DSE/cow)	7453	6404
Weaning percentage	85%	76%
Pregnancy test	88%	17%
Dry cows culled	96%	83%
Calving span (weeks)	9	12

The optimal stocking rate for a property is determined by its physical features and the skill levels and 'comfort zone' of the manager (Figure 4). This rate is usually found in a range between 25% and 50% above the district average.

Condition Score

It is not essential to have our cows mud fat all year. If the calving span is restricted to nine weeks fertility is not affected if cows are calved down at Condition Score 2 (Table 2). Also by having a tighter calving there are more growing days to weaning (Table 1). A comparison between standard and progressive calving systems for beef herds is given in Figure 5. The adoption of the progressive system should lead to a net gain of about 12% (Figure 5).

Calving Time

Pasture growth in south east Australia is unreliable, and we have to base management decisions on the assumption that average rainfall will be received each year and produce average pasture production (Figure 6). Generally, we need to have as many mouths to feed as possible through spring and summer and lighten off during winter.

If the peak lactation demand of the cow is to coincide with the period of most likely pasture surplus, then calving in August seems logical (Table 3).

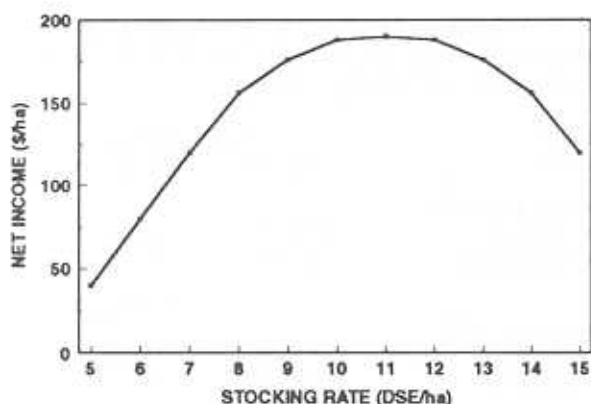


Figure 4: Relationship between stocking rate and profitability

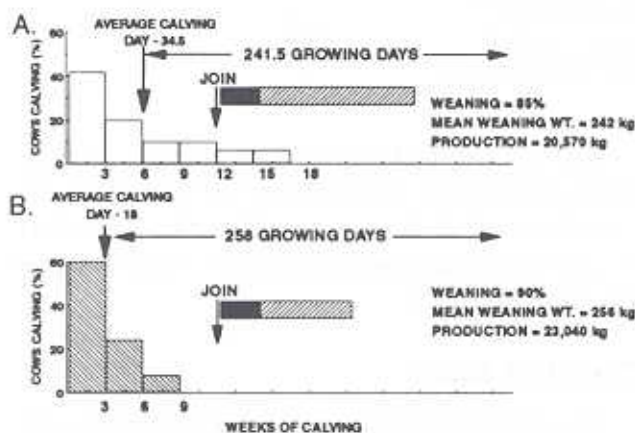


Figure 5: Comparison of standard and progressive calving systems for beef herds.

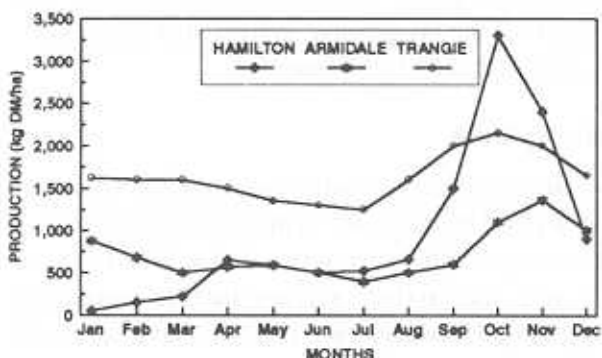


Figure 6: Annual pasture production by month for Armidale (NSW), Trangie (NSW) and Hamilton (Vic).

Table 2: Pregnancy rate and subsequent data of calving for cows calving at a range of condition scores and a range of calving dates.

Condition score at calving	Weeks of calving					
	1-3	4,6	7-9	10-12	13-15	16-18
4.0	97 ¹ 22 ²	97 22	97 22	94 37	85 54	62 68
3.5	97 22	97 22	97 22	93 38	84 55	61 69
3.0	97 22	97 22	97 22	93 39	84 56	60 70
2.5	97 22	97 22	96 26	91 43	77 59	43 70
2.0	97 22	97 22	93 33	87 50	68 64	20 70
1.5	97 22	97 23	93 41	82 57	54 70	0

Notes: ¹Expected calving percentage; ²Expected calving day.

The major economic benefit as shown in Table 3 is derived from best utilising the peak of Spring feed with 15% more cows.

If we like to have a bet each way, then an autumn calving is feasible (Table 4). Peak lactation is at week 12, so a February-March calving is preferred to minimise pregnancy toxæmia and stress during the winter months. Early weaning may be an option in a tough year as it reduces the combined stocking rate per cow unit by 2 DSE.

Genetic Factors

The Monaro data pointed out the importance of fertility on herd profitability. Structural soundness is a factor that affects the longevity or working life of herd members. High fertility and longevity are "free" - they do not add to the running costs! They also allow the luxury of culling for other traits such as milk, muscle, growth rate and frame. These four characters "cost" money to improve and we need to find the right balance. Rather than imposing our own likes and dislikes on the herd, see what performs best in your environment and learn to like the look of it!

Replacement Heifer Program

A profitable herd is one that is young and has a high culling rate. To set this up we have to start with the heifer weaner - grow her out for joining, get her in calf early, have a live calf unassisted, rear it well, get in calf again and not have any defects - that's all! A mob of 100 heifer weaners halves fairly rapidly as shown in Table 5.

This program allows mother nature to do the sorting rather than having us make wild guesses at weaning time. The heifer weaners grow into money through their second summer after joining, and the

Table 3: Effect of calving date on profitability (Weaning on March 30 for an April sale).

Variable	Calving time	
	Early winter	Late winter
Start of calving	May 20	August 10
Calving span (weeks)	18	6
Median calving day	June 25	August 25
Growing days	278	217
Birth weight (kg)	32	33
Growth rate (kg/day)	0.92	0.95
Weaning weight (kg)	288	239
Weaning %	85	92
Cows	100	115
Total weight sold (kg)	24,480	25286
Price (\$/kg)	1.10	1.25
GROSS INCOME	\$26928	\$31608

Table 4: Gross margin analysis of autumn versus winter calving systems at two stocking rates at Canberra, 1969 and 1970.

Year	Gross margin (\$/ha)			
	Autumn calving		Winter calving	
	1.85	1.24	1.85	1.24
	cows/ha			
1969	99	89	73	72
1970	92	79	80	84
Average	91	84	77	78

Table 5: Culling program for heifer weaners.

Reason for culling	Balance of 100
Cull runts, over-fat vealers	95
Attain critical mating weight (Figure 7) and join to small bull for 6 weeks	90
Cull barren and cows with small pelvises	72
Eartag and calve down at CS 3 to 3.5, inspect twice daily, tag calves, recorder number, sex and date, cull all heifers with dead calves or requiring assistance	62
Rejoin for 9 weeks, weigh calves at weaning, cull cows with calves below 90% weaning ratio	55
Cull empty and unsound heifers	50

retained two year olds that needed assistance or did not rear a calf attract an age premium at the abattoir.

The young cow is now rising three years of age and has earned her place in the main herd. Each year 20% of each age group can be culled on fertility, soundness and performance standards.

Calving Difficulty

If you have an unacceptably high level of dystocia in your heifers try retaining your own "heifer bulls".

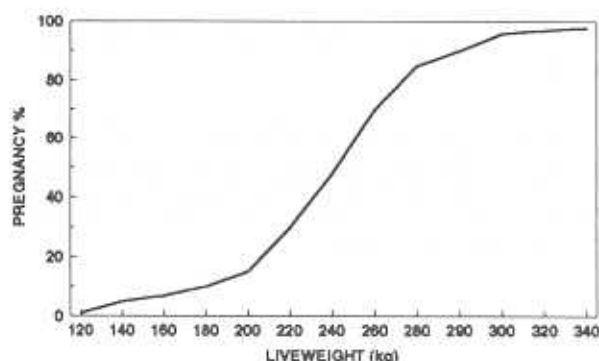


Figure 7: Liveweight and fertility in yearling Hereford heifers

From the above mob of two year old cows and calves retain some bull calves that were not assisted deliveries, and with high serving capacity, good testicle size and no structural problems for use over their litter mates as yearlings. The better bulls could be used again over yearling heifers the next year.

Grazing Management

Opinions vary as to the best method of grazing pasture, from set stocking through to ration grazing as used by dairy farmers. My view is that high overall stocking rates and pasture spelling go hand in hand. By keeping stock off about one third of your area at any given time, pastures have time to recover and be saved for those high priority mobs. You can see how much feed is available ahead and budget accordingly.

The use of other species (eg. sheep) and/or cropping to reduce the population of worm larvae can be beneficial in reducing the impact of internal parasites.

ATTITUDE

Fundamental to meeting the challenge that lays ahead is the need to question all existing activities and arrangements. We become comfortable with things familiar and tend to resist change. If you have the luxury of not being in that thirty year span of high family expenses, then goals other than financial can be a priority.

Goals need to be formulated (financial, lifestyle, environmental, etc.); first things should be put first (grass before genetics); be proactive rather than reactive (make things happen, don't get caught unawares);

think win/win and synergise (get a spin-off benefit from each activity).

You have probably hear it all before and considered the options a bit of a drag, but the alternative of "*average production at average prices equals poverty*" does not sound appealing.

CONCLUSION

To remain competitive in beef we have to grow lots of high quality grass, graze it effectively with cattle that perform best in that environment, under an efficient management plan. There is no easy quick-fix alternative to doing the right things exceptionally well.