

Designing breeding programs to improve profit

Business profit is determined by Gross Margins, Overheads and Turnover.

Genetics can impact significantly gross margins and turnover in the following areas:

Gross Margin is determined by: price; volume; & variable costs

Price: timing of marketing, cattle in market ready condition year round – doing ability, premiums, quality, market versatility.

Volume: reproduction, growth rate, kilogram of beef produced per cow, weight for age, minimize deaths and losses with constitution.

Variable Costs: reduced need for supplements, vet costs, nutrition, bull to cow ratios, bull survivability and longevity, feed conversion.

Turnover:

Turn-off progeny earlier, heavier cattle; more calves over cow lifetime;

Forage utilization – ability to cover distance and graze further from water;

Female progeny suitable as replacement breeders or sought after by feeder markets with commensurate capacity for growth, ability to lay down fat and weight gain.

Quantifying the value in genetics

There are two aspects that will influence the cost of a bull per calf and the subsequent productive value of that bulls progeny:

1. The bull's performance: Fertility: no of progeny born per year;
Longevity: number of productive years;
2. The progeny's performance: Genetic legacy.

Fertility and Longevity

The bottom line on how much a bull is worth is affected by his structure, fertility, constitution, whole of life nutrition, sale preparation, weight for age and doing ability.

The value of fertility, structure and longevity to the bottom line

	Bull 1	Bull 2	Bull 3	Bull 4
	No vet or semen test. No objective data on growth traits.	Good structure, semen OK. No objective data on carcass traits	Good structure, semen OK. Objective data available - above breed average for carcass and fertility traits.	Over-fed bull. Swollen hocks. No vet or semen test. No objective data on carcass or fertility traits.
Purchase price of bull	\$3,000	\$3,000	\$5,000	\$8,000
No. of years bull is used	3	5	5	2
No of cows mated to per year	25	33	33	25
(As a percentage)	(4%)	(3%)	(3%)	(4%)
Branding %	75	85	85	75
No of calves per year	19	28	28	19
No of calves over lifetime	56	140	140	38
Minus salvage value of bull	800	1000	1200	1200
Actual cost of bull	\$2,200	\$2,000	\$3,800	\$6,800
Bull cost per calf	\$39.11	\$14.26	\$27.09	\$181.33

The value of weight for age to the bottom line at weaning

Average weight of progeny at weaning (kg)	150	170	200	170
Average value of weaners per head @ \$2/kg LW	\$300.00	\$340.00	\$400.00	\$340.00
Value of bull's male progeny over lifetime				
	\$16,875.00	\$47,685.00	\$56,100.00	\$12,750.00

NB: These calculations do not account for the extra value for superior daughters and permanently acquired genetics in herd.

The table above illustrates the value of a good sound bull to the breeder, however the impact of quality genetics flows right through the supply chain affecting the bottom line of each sector; the backgrounder the feedlotter, the processor and the retailer.

Genetic Legacy

Fertility: Daughters must be fertile and capable of raising a calf every twelve months.

Hardiness: Ability of daughters to survive and thrive under extreme conditions.

Reducing age of turn-off: See notes below quantifying impact to bottom line

Feedlot Performance: See notes below quantifying impact to bottom line

Reducing age of turn-off:

Cattle that can achieve an entry weight one year ahead of their peers free up limited pasture and management resources equating to around \$300.00 per head.
 Reducing age of turn-off by one year for 1,000 steers is \$300,000.00 per annum

Feedlot Performance:

Once those superior animals have achieved feedlot entry weight their genetic predisposition to feed efficiency and weight gain will further affect the bottom line.

The performance of 1554 cattle from 67 vendors was investigated by Nolan Meats and the DPI to determine the variation in performance and profitability of stock in a feedlot.

There was a \$211.00 per head difference from the bottom 10% of cattle and the top 10%.
 In an operation producing 1,000 steers per annum, this difference is over \$200,000.00.

Trial results showing the variation of profitability in feedlot cattle

	Bottom 10%	Middle 10%	Top 10%	Difference
Entry weight	289kg	284kg	292kg	6kg
Entry cost	\$590	\$580	\$593	\$3.13
Daily weight gain	1.2kg	1.6kg	2.1kg	0.9
Weight gain	103kg	141kg	185kg	80
Exit weight	389kg	426kg	473kg	84kg
HSCW	204kg	230kg	267kg	63kg
\$/kg HSCW	\$3.11	\$3.25	\$3.24	\$0.13
Final \$ value	\$642	\$747	\$863	\$221
Profit	-\$143	-\$31	\$68	\$211

Breeding cattle that can handle the tough seasons yet suit all major markets will ensure you can enter a market at any age or weight range, enable you to secure premiums and avoid discounts.

Seedstock Partner Information

Major target markets:

Market specifications:

Land type and environment:

Property 1.

Property 2.

Property 3.

Property 4.

Traits of economic importance:

Breeding objectives / goals:

Tick resistance:

Weight for age:

Fertility:

Longevity:

Structural traits:

Colour:

Bos indicus content:

Bos taurus content:

List selection criteria:

Prioritise selection criteria:

Numbers of cows mated annually:

Bull to cow mating ratio:

Bull culling policy:

Annual bull assessment policy:

Annual replacement bulls required: