Mulga Lands – Factsheet 3: Optimising the age of steer turnoff and key strategies to improve drought resilience

Key finding
Improving herd management (stocking to safe carrying capacity, weaner management, pregnancy testing and vaccinations) and shifting from selling steers off their mothers at 12 months old to weaning and turning off steers at 18 months increased profitability each year by $12,400.

The Queensland Department of Primary Industries (DPI) evaluated the economic implications from optimising the age of steer turnoff. Factsheet 2 evaluated several strategies to improve herd management including the long-term safe carrying capacity, weaner management, pregnancy testing and vaccinations. These same strategies were already in place before the age of steer turnoff was considered.

Optimal age of steer turnoff

The Mulga Lands representative property outlined in Factsheet 1 was used to compare alternative steer sale ages based on grazing 500 adult equivalents for each strategy. Sale weights and prices are shown in the table on the right. Average cattle prices from the Roma saleyards and Queensland over-the-hooks markets, adjusted for body condition, were used for the evaluation net of selling costs (freight, fees, levies, commission, etc.).

Age of steer turnoff	Paddock weight	Sale price ($/kg)
6 months	171 kg	$2.00
12 months	205 kg	$2.45
18 months	292 kg	$2.45
30 months	389 kg	$2.35
42 months	484 kg	$2.25

The table below compares production, sales and gross margins for each turnoff age. Turning off older steers requires less breeders, which decreases drought risk due to less nutritional demands and expenses. Weaner steer producers have more calving and lactating females during a drought than similar slaughter weight steer producers. While turning off older steers decreased cattle sale numbers, prices received per steer increased by even more, so sales revenue increased. Also, variable costs were lower (less bull replacements, etc). Turning off steers at 18 months produced the highest gross margin, closely followed by 30 month old steers.

Production & sales	6 months	12 months (base)	18 months	30 months	42 months
Cattle carried	542	625	596	615	610
Breeders mated	387	370	353	313	274
Calves weaned	222	212	202	179	157
% of females sold	42.6%	43.2%	43.2%	44.7%	46.3%
Cows & heifers sold	82	79	75	66	58
Steers sold	111	103	99	82	67
Steer price ($/head)	$270	$418	$611	$787	$942
Net cattle sales	$83,036	$94,059	$108,753	$107,456	$101,091
Variable costs	$10,847	$10,492	$10,005	$8,941	$7,896
Herd gross margin	**$72,189**	**$83,567**	**$98,749**	**$98,515**	**$93,195**

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The table below shows that the amount of capital producers have tied up in the herd (e.g. unsold cattle) is generally greater when turning off older steers. Therefore, to compare the options fairly, the amount of money the additional ‘tied up’ capital could have earnt if invested elsewhere needs to be subtracted from the gross margin. These foregone earnings (or interest) were calculated as 5% of the tied up capital. Subtracting the foregone earnings identified that turning off 18 month old steers provided the highest ‘gross margin less interest’, followed by 30 month old steers.

	6 months	**12 m (base)**	**18 m**	**30 m**	**42 m**
Amount of tied up capital in herd (unsold cattle)	$307,740	$323,286	$308,266	$326,148	$341,853
Foregone earnings (or interest) on tied up capital	$15,387	$16,164	$15,413	$16,307	$17,093
Gross margin minus interest	**$56,802**	**$67,403**	**$83,336**	**$82,207**	**$76,103**

Was turning off older steers more profitable?

An investment analysis was undertaken evaluating the changes in cash flow that occurred over 30 years when turning off 18 month old steers along with the key strategies to improve herd management (safe carrying capacity, weaner management, pregnancy testing and vaccinations). It was assumed that no upfront investment was needed to turn off older steers.

The results identified that turning off steers at 18 months and implementing the above basic herd management strategies increased profitability each year by $12,405 (annualised net present value) relative to selling steers off their mothers at 12 months old (no weaning activities) and low level management (base property).

Please note, these results are dependent on the assumptions used in the analysis. Producers must consider their own circumstances before implementing changes.

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