Effect of Changing Prices and Herd Parameters on Age of Male Turnoff from Northern Beef Herds

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Background

Traditional turnoff from north Queensland beef herds has been of bullocks aged at least three to four years of age and sometimes six years or older. Conventional wisdom has been that the profit is in the bullocks, and this wisdom has for the most part been borne out by budgeting exercises (Holmes et al unpublished).

More recently, drought destocking has reduced many north Qld herds to breeder nuclei, and left them with no option but to turn off younger male cattle for cash flow until such time as a complete age structure of male cattle can be restored. This situation has led to the conventional wisdom on optimum turnoff age to be questioned.

Fatteners from central and southern Queensland have recently been expressing the view that north Queensland properties should "logically" be breeding stores for feedlotters and crop fatteners to finish, particularly for the Japanese market. No doubt a supply of cheap stores from the north would be most advantageous for these fatteners, however this glibly assumes that in supplying stores, the northerners would at least be no worse off than they have been with their traditional bullock turnoff.

Branding rates in north Queensland are not high, with individual properties averaging from 40% to 80% on mitchell grass downs country (Holmes 1986) and perhaps 40% to 60% on poorer land types. Breeder mortalities on poorer country may exceed 10%. Improved breeder management technology, particularly phosphorus supplementation and early weaning, have the potential to increase branding rates on poorer country by perhaps 15% points, and to reduce breeder losses.

Determinants of Optimum Turnoff Age

In the north Queensland context, breeders are kept to produce steers which then may be sold or retained for fattening. Few extensive northern properties buy in steers for fattening. The strategic decision to be made is whether to sell the home bred stores at say one or two years of age, or grow them on into bullocks for turnoff at age three to four years. Some company operations send steers from north to channel country properties for fattening.

From a farm management budgeting standpoint the problem can be viewed incrementally. The breeding enterprise is obligatory, and produces store steers which can be sold at say age one year, give or take some months. The next "optional" enterprise is growing one year old steers out to two years, and then to three, and so on.

The profitability of growing out steers, versus not growing them out, comes down to a comparison of the profitability of the breeding "enterprise" versus the successive increments of the growing out "enterprise". The profitability of breeding comes down mainly to branding rates and yearling steer values, whilst the profitability of growing out is a product of steer growth rates and price differentials for age and finish. It should also be noted that as bullocks become bigger and more valuable, the opportunity cost of capital tied up in them (capital per adult equivalent relative to that tied up in the breeding enterprise) may hasten their turnoff.

From these statements of principle, we can say that if breeder performance is poor, e.g. 50% branding rate, gross margin per breeder will probably be much lower than gross margin per growing steer, and overall profitability will be improved by retaining the steers up to the age where their next annual increment per AE (after allowing for capital differences) would no longer exceed gross margin per AE from breeders.

Conversely, if breeder performance is good, for example, 80% or 85% branding rate, it is highly probable that the profitability of breeding will exceed that of growing out steers, and overall profitability will best be served by concentrating on breeding store steers and adjusting breeder numbers accordingly.

Herd Budgeting Exercises

During 1988 and 1989, QDPI husbandry advisers and the author were engaged in computerised herd budgeting exercises on a number of grazing properties across north Queensland. Whilst the primary objectives of these exercises were to address drought destocking and restocking decisions, and to provide advisers with training on their computers and on the BREEDCOW/DYNAMA herd budgeting package (Holmes 1987), these exercises provided some useful observations on optimum age of male turnoff and its sensitivity to branding rate and yearling store prices.

Estimates of the critical parameters of branding rates, mortalities, and male and female prices at various ages, were provided by owners in debate with husbandry advisers. Price estimates were based on expected weights for age at then current prices.

Preparatory to undertaking cash flow projections, steady state analyses of production possibilities were undertaken to provide a basis for turnoff "decisions" to be made for the cash flow budget. It is the general observations from these steady state analyses which are now being reported.

Results

Early analyses in the Charters Towers district supported traditional bullock turnoff. On properties with branding rates of from 55% to 65%, growing out bullocks was clearly the more profitable part of the breeding and growing enterprise. If no allowance was made for differences in herd capital for different turnoff policies, a bullock turnoff age of four years was coming out as "optimum", however when capital differences were allowed for, this came back to three years.

A few properties were analysed having higher branding rates. In particular, one well managed property on the coast below Ayr with an average branding rate of 85% was analysed. This property was turning off three year old bullocks, and it was clear from the budgeting that a yearling steer turnoff would have been more profitable.

Other properties with branding rates of 75% to 80% were analysed during 1988 and shown to be in the fortunate position where they could produce store steers or bullocks and do equally well out of either.

The "problem" properties were those which had lower branding rates (below 65%) and no longer had the option of immediate bullock turnoff because they had destocked all ages of bullocks, and who clearly were going to be sacrificing profitability if obliged by cash flow constraints to sell stores. Breakeven analyses on these properties to determine what it would take to make yearling stores worthwhile were indicating that another $70 to $100 per head for yearling stores would be needed to break even with traditional bullock turnoff.

In 1989 there was some buoyancy in the market for young stores. Budgets done during early 1989 were indicating a slightly lower branding rate - about 70% - as the point where it was about equally profitable to turn off young store steers or older fat bullocks. This level of branding rate should be achievable on a lot of northern country with the adoption of phosphorus supplementation and early weaning.

Will the North Become the Nursery for Feedlots and Crop Fatteners?

A temporary increase in the turnoff of store steers from north Queensland has been due to drought destocking and cash crises following drought, combined with higher prices for young steers.

Future turnoff patterns will be determined by graziers' perceptions of what pays them best, and the cash flow limitations under which they happen to be operating. If financial constraints are eased, northern graziers will again be able to consider the bullock turnoff option. Whether that option is most economic will depend on prices at the time, and the branding rates being achieved.

While there is a market for three year old bullocks, northerners with poor brandings will probably continue to produce such bullocks. If a substantial market premium develops for a younger beast, there will be an economic advantage in getting more animals on to good fattening country sooner. This should be evidenced by higher prices for young stores, which would persuade more northerners to swing over to store production.

Budgeting exercises over the past two years have indicated a swap over point from bullock to store production at branding rates of 70% to 80% depending on prices. If the margin for young stores were to increase, this swap over point might come back to 65% or even 60%. Meanwhile, as more graziers adopt better breeder management practices and branding rates rise, other properties may come into store production because better branding rates have made breeding more profitable.

Conclusion

Developments which will tend to increase the turnoff of store steers from north Queensland on a more permanent basis are shifting price relationships favouring younger steers, presumably flowing on from a demand for younger fat beef, and improved reproductive performances in northern herds as better breeder management practices are adopted.

REFERENCES

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