

CATTLE PRODUCTION SYSTEMS AND WHAT TO CONSIDER

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About two-thirds of the surface area of South Africa is categorised as grazing land, which has to be utilised for livestock or game farming purposes for the production of meat. Given the volatility in the weaner price, it raises the question of whether a weaner calf production system is the most profitable practice for cattle farmers.

In this article, the pros and cons of a weaner calf production system will be compared to that of an “ox production system”, along with the expected income that can be generated from the two systems.

Production approaches

It is generally assumed that between 75% and 80% of South Africa’s beef is finished by feedlots. The classification system supports the feed lotting of weaner calves, where the highest prices are achieved by A-grade carcasses. This has led to the majority of the cattle producers in the country linking up with the feedlot industry by selling their calves after weaning. Since calves are sold at between 7 and 9 months, it ensures that the producer carries the risk of possible calf losses due to predation or theft for a shorter period. A cow-calf operation could, for argument’s sake, be the simpler system where fewer herds will probably be formed. This could, in turn, lead to less infrastructure being required on the farm due to a fewer but larger herd being kept, rather than more herds with animals of different ages in the process of being finished.

Weaner calf producers will house larger numbers of cows that will have to be carried through the winter. This could then cause producers to sell their calves during periods of unfavourable prices, due to larger supply, before winter. One could thus argue that this type of production system is less adaptable and riskier, as the producer carries the loss of the cows that fail to reproduce. Generally, the price of weaner calves and the maize price shows a negative correlation, indicating that feedlots are willing to pay a higher price for calves in years where the maize price is low. During these times more grain farmers buy in calves or hold back their own calves in an attempt to add value to their maize. In periods of high maize prices, the opposite happens, and feedlots’ profit margins are placed under pressure, thereby reducing the prices they are willing to pay for calves.

In contrast to the weaner production system, an ox production system implies that a producer will have to retain the calves for a longer period. These additional animals will lead to a lower number of productive cows being kept on the farm. Since animals are kept on the

farm for longer, the possible risks will be carried for a longer period as well.

A big advantage to an ox production approach is that it provides a larger degree of adaptability. During times of drought, the progeny (oxen) could be sold at an earlier age to ease the pressure placed on the grazing at that time. This will then allow for the cow herd numbers to stay unaffected. This type of production system could suit a farm with mountains or hilly areas since the animals in process of being reared and finished could be placed in the mountain camps, while cows and calves can be placed in camps with more even surfaces. Smaller framed animals tend to perform better in uneven camps or mountain camps. One will then have to decide which production system might suit the current herd better, or it will have to be considered whether the herd has to be adapted according to the production system or available resources.

Income potential

To illustrate the potential differences in income that could be generated between the two types of productions systems, a model developed by Prof. Frikkie Nesor is used, and the assumptions used regarding farm size, carrying capacity etc. are shown in Table 1. To investigate the potential differences between frame sizes, the performance between the two production systems is calculated according to the assumptions as shown in Table 2.

Table 1: Assumptions used

Farm size ha	2000
Carrying capacity ha/LSU	4
Replacement rate	15%
Bull ratio to cows	3%
Cow mortality	2%
Weaning percentage	85%
Dressing percentage	55%
Weaner price	R 36.05
Caracas Price per kg Grade A	R 48.26
Caracas Price per kg Grade B	R 44.99
Caracas Price per kg Grade C	R 42.18

Table 2: Assumptions per frame size

FRAME SIZE	PRODUCTION SYSTEM	WEIGHT OF COWS (KG)	WEIGHT OF MARKETABLE ANIMALS (KG)	AGE (MONTHS)	CARCASS CLASSIFICATION	NUMBER OF COWS AND CALF UNITS
Small frame	Weaner	367	158	7	A	352
	Ox		330	24	A	214
Medium frame	Weaner	508	218	7	A	304
	Ox		406	24	B	197
Large frame	Weaner	630	232	7	A	239
	Ox		430	24	B	168

The results show that the highest income under these assumptions will be earned from producing weaner calves from medium-framed cows (Figure 1). In all three of the frame sizes, weaner calf production ensures the highest income. With the focus on small frame animal, the production of weaner calves shows an income 14% higher than ox production, this under the assumptions as shown in Table 1 and 2. Weaning percentages of 60% and 40% have been recorded for commercial and communal cattle farms respectively in South Africa.

If these lower weaning percentages are factored into the model small frame weaner calf production shows income 4.1% higher than ox production at a weaning rate of 60%. Small frame ox production shows an income 3.6% higher than weaner production at a 40% weaning rate. It should be noted that these results are generic and that the actual results that could be achieved will differ between each farm.

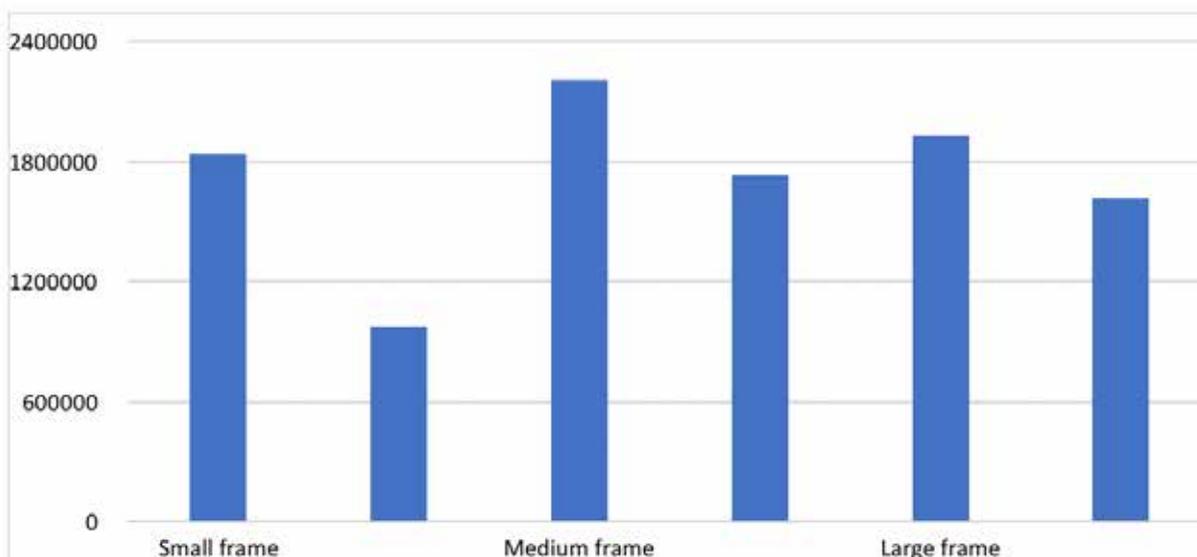


Figure1: Gross income per frame size for weaner and ox production

Other aspects

It is important to also consider other aspects that could influence the calculated income between production systems. In some instances, feedlots discriminate against some weaner calves and deduct between R3 and R7 per kg on their purchasing price. If this is the case, the discounting should be factored into the considerations of production approaches. If a R7 discount is taken into account for the small frame herd scenario, the production of oxen will ensure an income 0.9% higher than that of the weaner calf production system.

Price fluctuations are a reality in the red meat sector, and it could be inaccurate to only represent a snapshot scenario of the production systems. The ratio of weaner price to class A carcass price shows significant changes over time. This ratio over the past few years is presented in Figure 2.



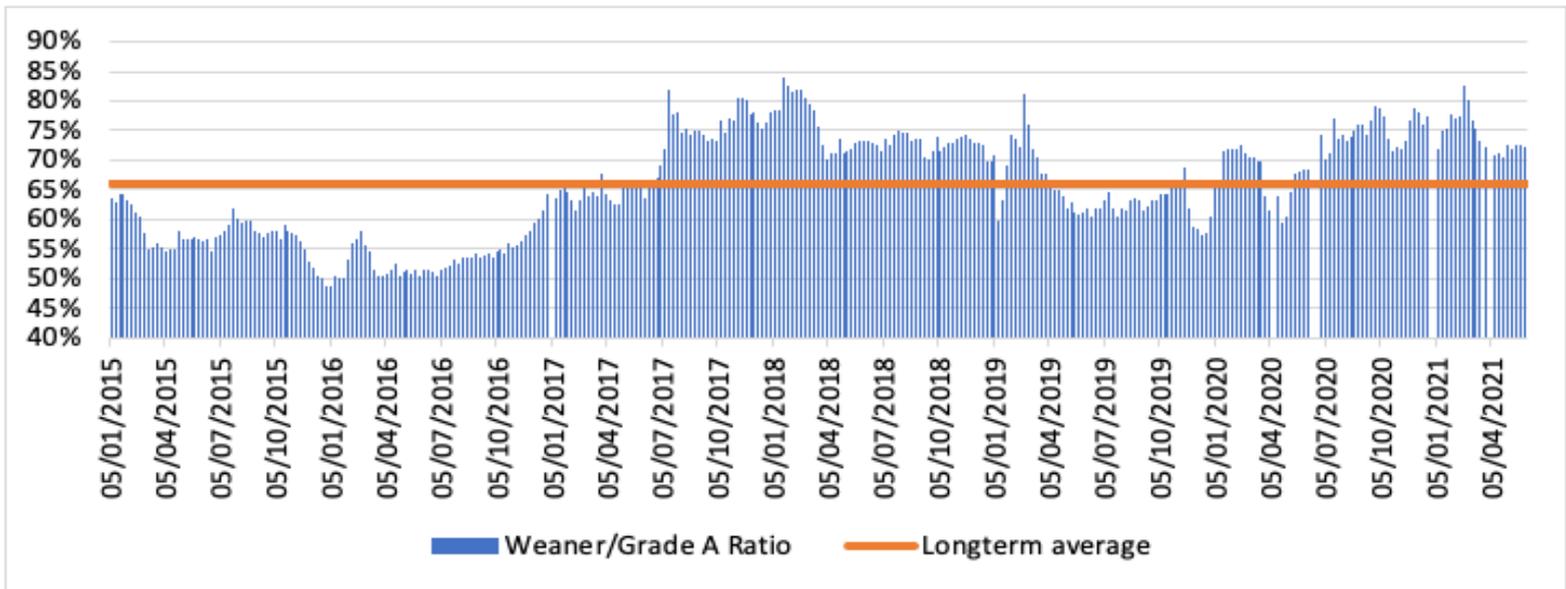
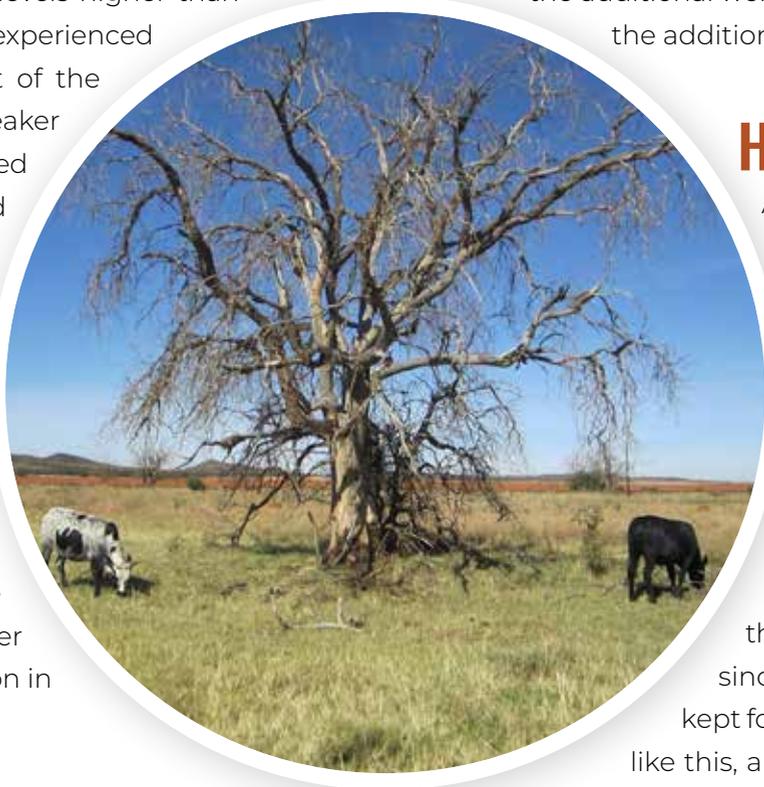


Figure 2: Weaner calf / Class A Carcass price ratio. Sources: Adapted from ABSA/RPO

The ratio, as used in the scenario above, is close to 74.7% with the long-term average price ratio of 66%, shown as a horizontal line in Figure 2. It can be noticed that the ratio remained below the 66%-line before 2017, and since then it has mostly traded at levels higher than 66%. The drought that was experienced during 2015/16 could be part of the reason why this ratio was weaker before 2017. For small-framed cattle, the income generated from ox production would exceed that of weaner production; with the ratio of weaner calf to carcass price reduced to roughly 60.5%, or lower. If a price penalty of R7/kg is included along with this lower price ratio, oxen production would generate an income about 21.6% higher than that of weaner production in a small frame herd scenario.



Costs to consider

Besides the income that could be earned, it will also be important to consider the costs incurred. The potential profitability of the different systems can only truly be

compared once the costs are deducted. As an example, the cost of feeding production lick to cows for a period of four months to obtain heavier weaner calves might seem like the logical thing to do. But has the income of the additional weight gained been compared to the additional cost of the production lick?

How to convert

Another aspect to bear in mind when a producer is considering converting his operation into an ox production system is how the process should be implemented. If the operation is a cattle farm, the transition might be difficult due to cashflow constraints that might be experienced since weaner calves will now be kept for a longer period. In a situation like this, a potential solution could be to do it in thirds or quarters over three to four years to smooth out the process. ■

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