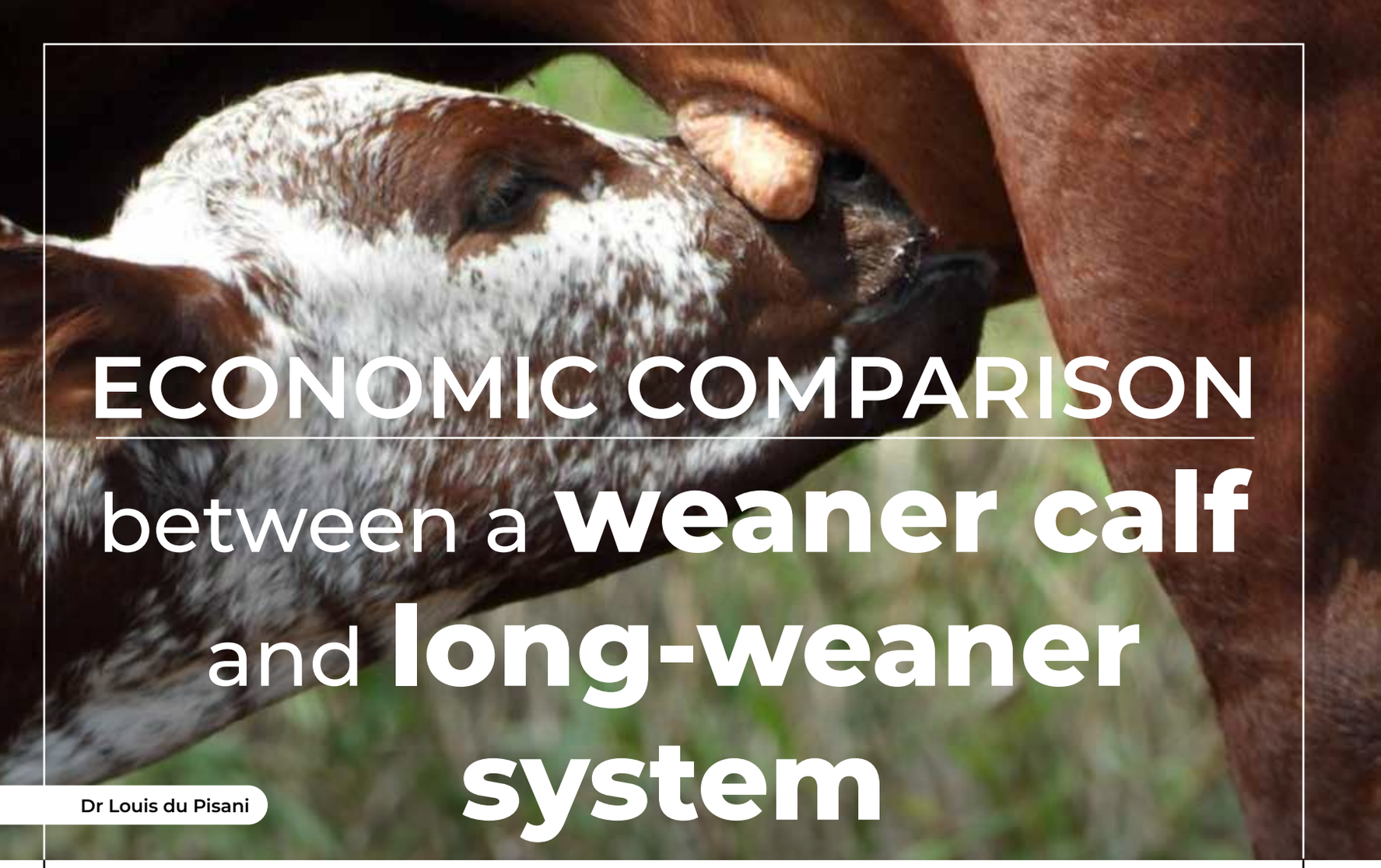

ECONOMIC COMPARISON between a weaner calf and long-weaner system

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INTRODUCTION

There is a marked price discrimination against Nguni weaner calves. The question is, are there alternative production systems available where the Nguni producer is not so much at the mercy of low prices offered for weaner calves?

There are two alternative production systems available to a weaner calf producer, namely a long-weaner and ox system. In a long-weaner system the bull calves are retained after weaning and slaughtered directly from the veld just before they start teething at between 18 to 21 months of age. Some farmers also keep all the heifers up to this age, while others only raise the replacement heifers and sell the access heifers after classing at weaning age. In the case of an ox system, the oxen are sold at 30 months of age and older. The heifers are sold either at weaning age or just before they start teething or after they were mated and have undergone a pregnancy test.

In this article the results of an economic comparison made between a weaner calf system and a long-weaner system with Nguni cows are discussed.

ASSUMPTIONS USED FOR THE ECONOMIC SIMULATION

The assumptions used for the weaner calf system were as follow:

- All calculations were based on a 100 Large Stock Unit (LSU's).
- Twelve percent of heifers are retained annually for replacement purposes. The rest of the heifers and

bull calves are sold at weaning. Ten percent of the old cows are replaced annually and a further 2% replaced due to cow mortality.

- The cows and replacement heifers wean respectively 90% and 80% of calves annually.
- A bull ratio of 4% is used.
- A Nguni cow with the above production figures equate to a value of 1.39 LSU's when the calves, replacement heifers and bulls are included into the LSU-value of the cow. By dividing the carrying capacity of 100 LSUs by 1.39 LSU's per cow-unit, 72 Nguni cows and their followers (calves, replacement heifers and bulls) can be carried.
- The rest of the production and price data used are shown in Table 1.

TABLE 1. Results of the simulation of the profitability of two production systems with Nguni cows

	Weaner Calf System	Long-weaner System
Number of breeding cows per 100 LSU's	72	54
Weaning % of cows	90	90
Weaning % of replacement heifers	80	80
Number of calves weaned per annum	64	48
WEANED BULL CALVES SOLD	32	
Weaning weight (kg)	180	
Price (R/kg)	R30	
Total mass sold (kg)	5767	
Revenue	**R173,016.00**	
WEANED HEIFER CALVES SOLD	25	
Weaning weight (kg)	160	
Price (R/kg)	R30	
Total mass sold (kg)	3974	
Revenue	**R119,232.00**	
OLD COWS SOLD	7	5
Cow weight (kg)	380	380
Price (R/kg)	R24	R24
Total mass sold (kg)	2736	2052
Revenue	**R65,664.00**	**R49,248.00**
TOLLIES SOLD		24
Tollie weight (kg)		300
Price (R/kg)		R26
Total mass sold (kg)		7209
Revenue		**R187,434.00**

The assumptions used for the long-weaner systems were as follow:

- All calculations were also based on 100 LSU's.
- The same reproduction and replacement rates were used as in the case of the weaner calf system.
- All calves are retained after weaning. The tollie calves are kept for a further year and sold at 18 months of age just before they start teething. The heifers are classed at 18 months of age and 40% are sold with the long-weaner bull calves. The rest of the heifers are kept, mated at 24 months of age and the final selection of replacements made from the pregnant heifers at 31 months of age after a pregnancy test. The surplus heifers are sold, some as pregnant heifers and the rest as open heifers. In the process 100% pregnant heifers go back into the herd.
- In this system a cow-unit, including all the

NON-SELECTED HEIFERS SOLD (18 months)		10
Heifer weight (kg)		275
Price (R/kg)		R26
Total mass sold (kg)		2750
Revenue		**R71,500.00**
NON-SELECTED HEIFERS SOLD (31 months)		7
Heifer weight (kg)		320
Price (R/kg)		R29
Total mass sold (kg)		2385
Revenue		R69,154.56
TOTAL REVENUE (R)	**R357,912.00**	**R377,336.56**
TOTAL WEIGHT SOLD (kg)	12478	14396
REVENUE/COW (R)	R4,971	R6,988
TOTAL WEIGHT/COW SOLD (kg)	173	267
RAND REVENUE PER RAND CAPITAL INVESTED IN COWS	R0.25	R0.35
Direct Coss @ R1078/cow, R539/tollie and /heifer	R77,616	R80,571
Gross Margin	R280,296	R296,766
Overhead Costs @ R2050/LSU	R205,000	R205,000
Nett Farming Income	**R75,296.00**	**R91,765.76**

follower animals (calves, long-weaners, replacements and bulls), represents 1.85 LSU's. Therefore only 54 Nguni cows can be carried, with a 30% reduction in cow numbers to make space for the long-weaner animals.

- The rest of the production and price data used are shown in Table 1.

RESULTS OF THE ECONOMIC COMPARISON

The profitability of the two systems is detailed in Table 1. It is evident from the results that a long-weaner system, with 30% fewer cows, sells more meat and is also more profitable than the weaner calf option. The long-weaner system is also more flexible (see paragraph 6). The same two principles apply to an ox system, although the figures are not shown here.

The break-even point between the long-weaner and weaner calf system is reached at marketing weights of respectively 270kg for the tollies and 255kg for the heifers at 18 months of age.

HOW TO MANAGE THE CASH FLOW WHILE CONVERTING FROM A WEANER CALF TO A LONG-WEANER SYSTEM

The economic advantage of a long-weaner over a weaner calf system has been pointed out by several academics over the past 30 years but there are relatively few producers who follow the former option. Why not? Probably, because producers are concerned that they will encounter cash flow problems while switching from one system to the other. It is, however, possible to manage this successfully. A four-year plan of how to manage the cash flow while changing over to a long-weaner system is depicted in Table 2.

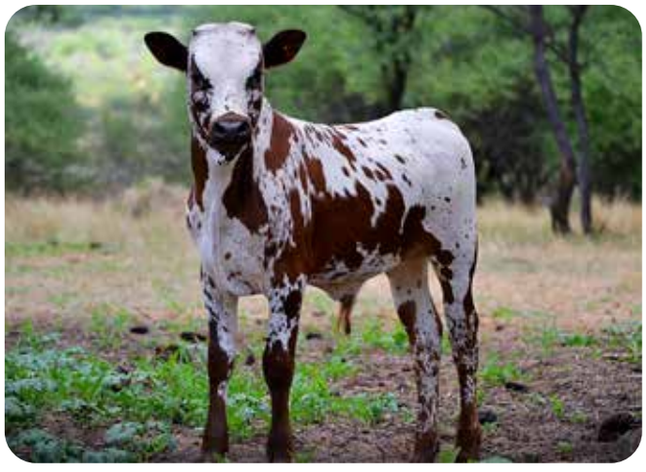


TABLE 2. A four-year plan to switch over from a weaning calf system to a long-weaner system

Type of animal	Number on 1 May of Year 1	Year 1	Year 2	Year 3	Year 4	Subsequent years
Breeding Cows	100	70 **Sell 30 cows to reduce numbers with 30%** **Sell 7 (normal replacement)**	70 **Sell 7**	70 **Sell 7**	70 **Sell 7**	70 **Sell 7**
Weaner heifer calves	40	Keep 100% (40)	Keep 100% (24)	Keep 100% (24)	Keep 60% (14) **Sell 40% (10)**	Keep 60% (14) **Sell 40% (10)**
Weaner bull calves	40	Keep 50% (12) **Sell 50% (12)**	Keep 50% (12) **Sell 50% (12)**	Keep 50% (12) **Sell 50% (12)**	Keep 100% (24)	Keep 100% (24)
18 months of heifers	8	8	Keep 40% of Year 1 weaner heifers calves (10) **Sell 60% (14)**	Keep 60% of Year 1 weaner heifers calves (14) **Sell 40% (10)**	Keep 60% of Year 1 weaner heifers calves (14) **Sell 40% (10)**	Keep 60% of Year 1 weaner heifers calves (14) **Sell 40% (10)**
18 months old tollies	0	0	**Sell 100% of Year 1 tollies** **12**	**Sell 100% of Year 2 tollies** **12**	**Sell 100% of Year 3 tollies** **12**	**Sell 100% of Year 3 tollies** **24**
30 months old heifers	8	8	8	Keep 50% of Year 2 pregnant heifers (5) **Sell rest (7)**	Keep 50% of Year 2 pregnant heifers (5) **Sell rest (7)**	Keep 50% of Year 2 pregnant heifers (5) **Sell rest (7)**
Number of animals sold		**42**	**45**	**48**	**46**	**58**

SELECTION OF REPLACEMENT HEIFERS WITH THE LONG-WEANER SYSTEM

Inherent in long-weaner and ox systems is the novel way in which replacement heifers are selected. Only 40% of the long-weaner heifers are sold at 18 months of age. The rest are retained and mated at 24 months of age. At 30 months, pregnancy tests are done on them. The final selection is then made from those that are pregnant and the rest are sold either as pregnant or as open heifers in the open market. These heifers are highly sought after and sell at a premium. In addition, 100% pregnant heifers are introduced into the herd.

There is also another benefit to replacing with already

pregnant heifers. Dr Johan Meaker from Natal conducted a study into the reproduction of replacement heifers.

His study showed the following (see Table 3):

- Heifers that do not calve during their first calving opportunity produce only 1.5 calves on average over the next 4 calving chances with a 34% calving percentage.
- Heifers that produce one calf during their first calving opportunity produce a total of 3.2 calves on average over their next 4 calving chances with a 80% calving percentage

In the long-weaner system all the replacement heifers are pregnant when they enter the cow flock. According to Dr Meaker's research they will then outperform the non-calver heifers in a weaner calf system. The long-term advantage is a high selection pressure for fertility. The cow herd's fertility will therefore improve systematically over time.

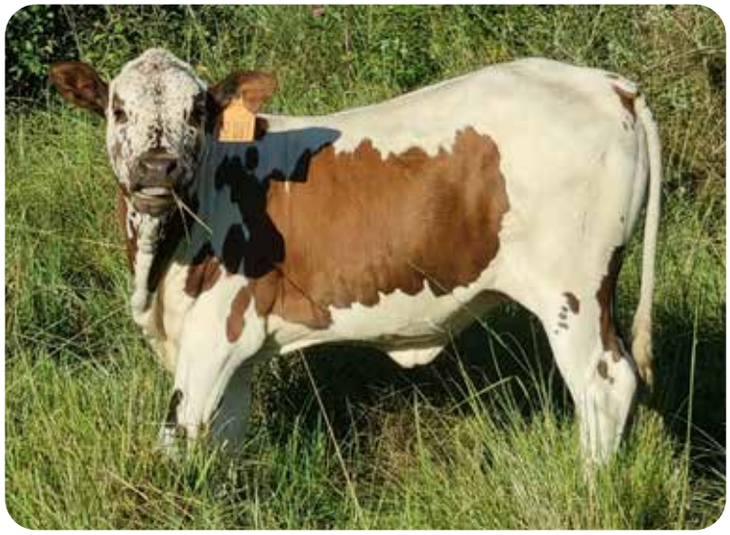
TABLE 3: The relationship between the number of calves born at the first calving chance and the subsequent four calving chances of young beef heifers (Meaker, 1984)

Number of calves born during first calving opportunity	Number of calves born during the following four calving opportunities	
	Number	Calving %
0	1.5	38
1	3.2	80

OTHER ADVANTAGES OF THE LONG-WEANER SYSTEM

A weaner calf system is more sensitive to droughts than a long-weaner and ox system. As soon as a drought strikes, it is difficult for the weaner calf producer to reduce livestock numbers quickly, because his cows are either pregnant and/or with calves. No one wants to slaughter a pregnant or lactating cow. A long-weaner and ox system changes this situation. Instead of reducing cow numbers the farmer can quickly reduce his cattle numbers by marketing the long-weaner tollies and heifers.

The worst time to sell calves is when everyone has calves to sell, i.e. around weaning time. With a tollie or ox system, the calves can be sold at any time during the year when prices are good.



WHAT ABOUT FARMING WITH TOLLIES/OXEN ONLY?

This is an option; however, the following are important aspects to consider:

- Always purchase healthy calves that can still put on a lot of weight. Avoid poor quality calves.
- Purchase animals as close as possible to the farm to keep transport costs low and to ensure that the animals adapt quickly to their new environment.
- Conclude a long-term purchase contract with a weaner calf producer, specifically one whose animals do well on your farm.
- Inflation of the purchase price can result in a situation where a portion of one year's profit will have to be used to cover the increased purchase price of calves in a subsequent year. Furthermore, one does not accumulate capital as is the case with a cow enterprise.

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