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and management principles of success

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THE ATTENTION**
at Sival 2023

NEW HOLLAND
Small tractor series

**SAKATA 'S EXCITING NEW
LETTUCE RANGE**
there is a variety for every lettuce producer

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SCRIPTURE

Now this I say...

He who sows sparingly will also reap sparingly,
 He who sows bountifully will also reap bountifully
 2 Corinthians 9:6



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The year started with abundant rains which really continued since late last year. But now a larger area is covered, albeit with severe storms and losses of homes, livestock, crops and lives in some areas. It seems this is a world-wide situation at the moment but, as we are in the beginning of a new year, let us look at positive outcomes and positive actions we as farmers and agriculturists can put in place to overcome the obstacles we, and more so our customers, the consumers of meat and fresh products and retailers can put in place. Our crops generally looks good, outlook on beef and sheep farming looks good. If we can collectively work on government to re-instate services at harbours and air-freight, our exports can once more rise. At street level, consumers are perplexed about many well-known stores with shelves containing really poor quality greens and sometimes meat packages, but all these at much inflated prices. The farmer, amidst all former mentioned obstacles and more, receive less for his produce per item, is curbed by inflated input costs while retailers slap on mark-ups because of unsold perishables that are ditched and, I am convinced, fewer sales. Answer: Be alert to smaller markets, direct to public sales, maintain good service and keep up your quality!

Best for 2025. *John Swingers*

An efficient cow. Note the size of the calf at 6 months of age in relation to the cow



BREEDING A PROFITABLE WEANER CALF

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ANIMAL PRODUCTION: IRENE

The red meat industry in South Africa is still under pressure and unfortunately most of the challenges are beyond the producer's control. During the drought of the 2015/2016 summer season, producers were forced to reduce their herd numbers. Since then, herds are again in a build-up phase, but other negative influences also put pressure on herds' recovery phase, such as livestock theft, low rainfall in certain areas with consequently less grazing capacity.

Furthermore, high input costs and the sporadic outbreak of foot and mouth cases do not count in the farmer's favor either. RMIS ("Red Meat Industry Services") December 2024 report indicates that South Africa now produces more red meat than local demand and South Africa does export meat, but South Africa's most important export markets are Kuwait, Jordan and the UAE and these markets also pay a relatively low value for exports of fresh or chilled deboned meat.

Although global demand for beef has increased and is mainly driven by China and the US, in 2023 Brazil supplied almost half of China's beef imports.

The primary market for the majority of commercial cattle farmers in South Africa is feedlots and the product is a weaned calf that must meet certain requirements. The calf must be able to grow at an acceptable rate and efficiently convert feed into

kilograms of live weight. The feedlot aims to double the calf's weight during a +/- 4 month feeding period.

Unfortunately, the market presents many challenges and the weaning price has stagnated since April 2023. At the current price of an average of R 32-50 (RPO) per kilogram for a bull calf, this is approximately R 4-00 per kilogram lower than less than a year ago. This gives rise to the tendency to try to wean as heavy a calf as possible to increase your income, but the ideal is rather to wean an optimum weight calf and will be discussed in more detail in the article.

Cow productivity is usually associated with the frame size of a cow. Larger cows tend to produce larger calves at birth as well as a heavier calf at weaning. But is bigger always the more profitable option in a weaner production system? Certainly, other factors that play an important role must also be considered. The input cost versus output should form the basis of a calf production system aimed at the feedlot market.

Heavier animals are usually associated with a larger frame, as mentioned, which leads to an increase in maintenance requirements due to a higher milk production, high visceral organ weight and an increased feed intake to maintain high production. These animals are usually higher in body weight with a lower fat percentage compared to smaller framed animals which are associated with lower maintenance requirements and lower milk production.

Small-framed animals have a lower visceral organ weight, low body weight and a higher fat percentage. These animals have a lower feed intake than their larger frame counterparts. Smaller framed animals will typically be those that reach maturity at an earlier stage in their lives than large framed breeds.

These are typical of two extreme frame sizes that

are usually breed specific, but animals within the same breed can also vary significantly in frame size. The environment and market requirements are determining factors for frame type. Cattle farming in South Africa is mostly extensive and medium frame animals are more adaptable to our environment, but may vary depending on the availability of planted pasture, crop residues etc.

Breeding objectives to improve the efficiency of beef production

It is important to maintain or increase production per unit (calf growth and/or milk production of the cow) to enable the commercial beef producer to ensure sustainability of his business or increased profitability. Due to the important role of the cow-calf phase in the production of beef, it makes sense to concentrate on this phase in order to increase the efficiency of production. Sixty to seventy percent of the cost of producing beef is attributed to feed costs and the feed efficiency of bulls and cows plays an important role here.

Feed efficiency

According to literature, the genetic variation for maintenance linked to energy requirements is moderate to high and this highlights the value of genetic selection to improve feed efficiency. Relevant research in this regard is currently being undertaken by all the role players in South Africa. Young bulls are tested in centralized bull testing centers of the Agricultural Research Council to identify the most efficient young bulls that convert feed into meat. Feed conversion ratio has always been seen as an indicator of feed efficiency and is a ratio that indicates the amount of kilogram of feed that the animal needs to put on one kilogram of live weight. Unfortunately, this ratio does not serve as an ideal trait for selection purposes; due to the combination of two characteristics, namely feed intake and growth rate. If

used as a selection criteria, the outcome will always be selection for growth as well as an increase in body weight and/or frame size.

When testing animals for residual feed intake these two traits can be separated scientifically and the most efficient animals in relation to feed intake can be identified independently of growth. It makes sense to select for superior bulls because of the great genetic influence of the bull in a cow herd. Also keep in mind if the female offspring of these bulls are kept as replacement heifers, genetic improvement can then be established within the herd by improving the feed efficiency of the cow herd. Cow weight, or mature weight, is an indication of the cow's frame type and the calf's weaning weight are the two factors that must be kept in mind by the commercial producer to evaluate cow efficiency. That is why it is important to also weigh your cows at weaning time so that each cow's efficiency can be evaluated.

Cow efficiency

Numerous methods have been investigated in the past to evaluate cow efficiency. Kilogram calf weaned per cow exposed is a combination of production and fertility of the cow, to produce another option is kilograms of calf weaned per cow exposed per kilogram of cow weight which is the well-known cow-calf ratio used by farmers to evaluate their cows. The general benchmark is usually a cow that can wean at least 45% - 50% of her own weight, but the ratio usually favors smaller cows. Keep in mind that 50% of a 300 kilogram small frame cow will produce a 150 kilogram calf that may not be acceptable for the feedlot market. A medium frame cow of 500 - 550 kg should wean a calf of 220 - 240 kg. Generally, feedlot agents will see weaning weight as an indicator of potential growth in the feedlot.

The option of kilogram of calf weaned per cow exposed per unit of feed required, (expressed as livestock unit) allows for feed efficiency as well as the production capacity and fertility of the cow. By the way, in South Africa a livestock unit (LSU) is defined as the equivalent of an ox with a weight of 450 kg and a weight gain of 500 g per day on natural pasture with an average digestible energy concentration of 55%.

Fertility

Improvement in fertility, which is indicated by the calving percentage, needs to be increased from the current 62% of the commercial sector. The general objective should be an increased weaner calf production without an increase in mature cow weight. This can be achieved by either using crossbreeding or an increase in the milk production of the mother. The ideal is to produce more from less to improve the efficiency of beef production.

What is an ideal weaning weight for the feedlot?

According to a prominent and successful Bonsmara breeder, the goal of producing calves between 35 and 37 kilograms at birth with an average growth of 1 kilogram per day until weaning will ensure a 240 kilogram weaner calf, which is in demand at feedlots. This can be a benchmark for beef farmers who farm with medium frame animals. He also calculates profitability as the number of calves weaned from the

number of cows mated during the breeding season, or otherwise expressed as the weaning percentage.

For the commercial producer, the goal is to produce the desired weaner calf for the feedlot and to satisfy his market by succeeding. An average weaning weight of 235 kilograms will enable the feedlot to add an additional 200 kilograms of meat over a period of 3-4 months and ensure a profitable calf. This implies that the most profitable calf is not always the heaviest calf at weaning, but rather an optimal weaning weight acceptable to market requirements. According to statistics from a well-known Bloemfontein auctioneer, weaner calf prices of R36-00 per kilogram were paid for calves 180 kg - 240 kg. But calves between 250 kg - 300 kg are penalized and the average price was R 29-00 per kilogram. And that's another reason why a maximum weaning weight is not so ideal. If replacement heifers are withheld from these heavy calves, this can create further problems in herds with females that are bred even larger.

Management

Management is an environmental factor that has a major influence on the efficiency of cow-calf production. The need is for replacement heifers of good quality genetics to maintain production of the cow herd and also to improve production of the herd. Older cows become less efficient with a decrease in milk production and must be replaced with good quality heifers. Teeth of older cows start to deteriorate and lead to a lower feed intake which has a detrimental effect on their body condition, milk production and they wean below average calves. The average weaning index over all her calves is of value here in herd context. As already mentioned, the production environment will be the determining factor that will guide breeders to ensure the most adapted frame type.

Manage the condition of cows before mating as well as before calving to ensure higher pregnancy rates and a stronger calf at birth. Overfeeding will also increase the birth weights of calves and this should be avoided. The production environment will determine the optimum cow size and not the other way around. If the breeder tries to create an environment for the optimum cow through supplementary feeding, this is not a sustainable environment for the cow herd and

can affect the sustainability of his production system. Always bear in mind that the easier the cow gives birth, the faster and shorter her recovery period after birth will be, and as a result it will be easier to get her pregnant again the following breeding season.

Genetic selection

The logical method to ensure genetic improvement is to always improve on the current herd sire by evaluating BLUP breeding values and purchasing registered bulls.

The use of a terminal bull (with extreme breeding values on growth) is another option to increase growth in the herd but all offspring of these bulls must be slaughtered and the females must not be kept back as replacement heifers. The important reason for this is that all growth characteristics are genetically highly correlated with each other and an increase in adult weight can also mean heavier calves at birth.

Summary

Cow efficiency is a combination of components:

- Fertility is the most important trait to ensure that cows produce at least one calf per year.
- Growth ability of the calf to ensure a calf that is sought after at the feedlot.
- Maternal value or milk production of the cow to help the calf reach the potential weaning weight.
- Cow weight, which is an indication of her frame type, must be limited.
- Birth weight of the calf to limit calving problems.

Some service providers calculate selection indices, which are a combination of all the above characteristics into one value, known as a cow value. BLUP breeding values are valuable genetic selection tools. Breeding values represent the genetic merit of an animal and must be considered for mating the most suitable bull with specific cows to ensure genetically improved offspring.

Dr Gordon Dickerson previously stated, "On a farm, an efficient cow herd exhibits early sexual maturity, a high reproductive rate, low levels of calving problems, longevity, minimum maintenance requirements, and the ability to convert available energy into the highest possible kilograms weaned calves".

