BIZCOMMUNITY

Precision farming the solution to optimising the red meat industry

By Phillip Oosthuizen

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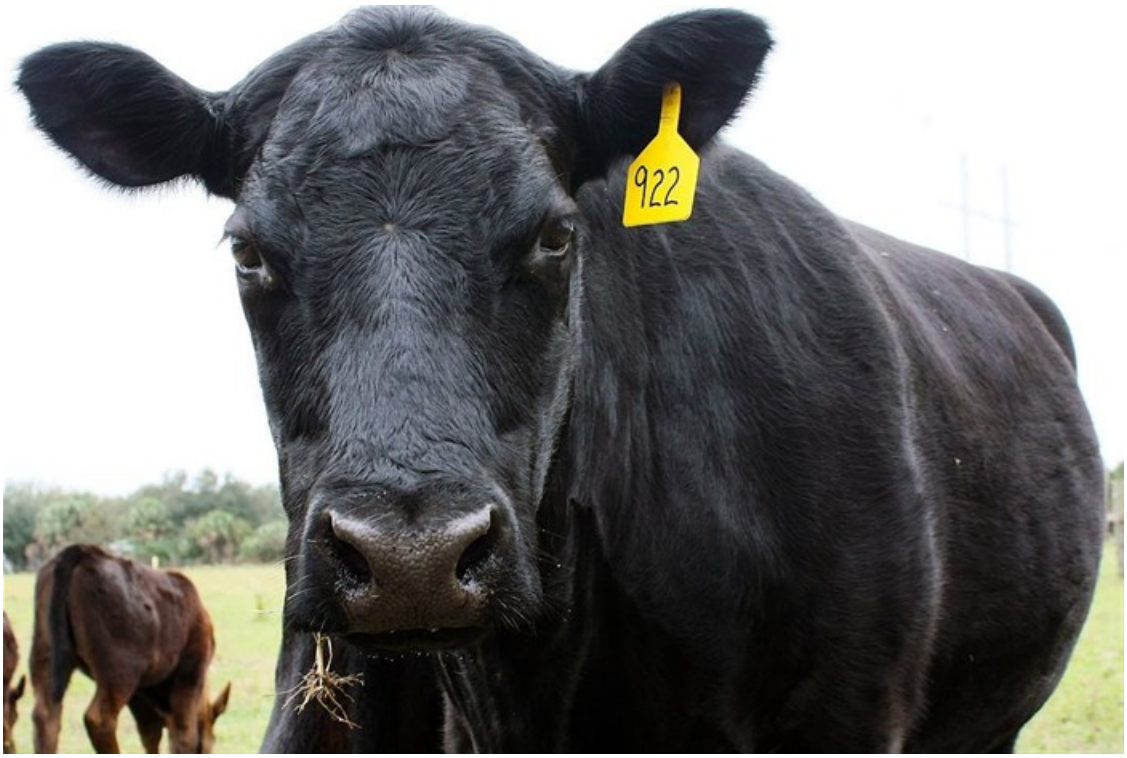
The red meat industry is complex due to various factors that have a significant influence on its productivity, profitability, and sustainability. Nature's influence on production and the variation in in-and-output prices is a big challenge. An even bigger challenge is to increase supply to meet the growing demand due to the rapidly increasing population. As a producer, it's our responsibility to produce meat to feed our nation. The question is how are we going to manage the variability and increase production effectively?



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The world population stands at 7.4 billion and is expected to increase with 2.2 billion by 2050. One billion population growth is already expected by 2025. Approximately 50% of this growth will be from the African continent - our continent! We must produce 35% more food by 2030 to meet the demand. Livestock contributes 40% of the global agricultural produce, 15% of the total food energy and 25% of the total food protein.

BFAP confirmed the above by predicted and significant increase in beef consumption of 22% by 2026 for South Africa. Not only is it our responsibility but it’s our opportunity to utilise the industry’s potential. The question is once again how are we going to increase production, resource utility, efficiency, profitability and finally sustainability?

Precision agriculture

Precision agriculture is the solution. We need to optimise the contributing factors in our control which include animal nutrition, reproduction, and health. Furthermore, we must manage the price variables as accurate as possible through market price analyses. Precision agriculture can be described as a catch-all term for the techniques, technologies, and management strategies that address in-field variability. The goal of precision agriculture is to assist farmers in gaining more control and managing complexity. Precision agriculture is the physical and financial management of farming operations in a site-specific manner, which returns more control, repeatability, and certainty to the farming enterprise - resulting in lower

costs, fewer variables, and more predictable returns.

I, however, define it in a practical two-step process. The first step is to identify the natural potential in terms of genetics with regards to growth, feed conversion, dressing percentage, fat deposition and so forth, in a cattle feedlot scenario. The second step is to change and adopt products and processes to optimise the natural potential that was identified. It is critical to fully understand what the potential is before the change in products and processes is done, hence the emphasis on in-depth research.

> *"We live a newera where the farming mentality has changed from 'serving the cowwith a bull to produce a calf and selling on the auction' to a complex business."*

Precision farming in the feedlot

The Sernick Precision Feedlotting project was done in 2015 in collaboration with Sernick, the University of the Free State's Department of Agricultural Economics and *Veeplaas*. The objective of the study was to determine the profit-maximising feeding period for different breeds of beef cattle.

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Step one: Identify the natural/genetic potential of each breed to perform in the feedlot. Seven different breeds were fed in a feedlot experiment to determine the feed intake and associated growth. The fat deposition pace and quantity, as well as the carcass characteristics, were also determined. The data differed significantly, enabling us to differentiate between different beef breeds.

Step two: Change and adopt products and processes to utilise the natural potential optimally. No products were changes in this study, the focus was to change the process while addressing price variability. The unique production potential of each breed was used as a base where after variable feed and carcass prices were incorporated. The profit-maximising feeding period was then determined by using a production economic formula. The results in the 2015 price scenario indicated significant differences in the profit-maximising feeding period for the different breeds. The Brahman, Afrikaner, and Bonsmara were grouped at 105-112 days feeding period, the Simbra and Angus optimised between 147 and 154 days while the Simmentaler and Limousin generated maximum profit on day 189 and 182 respectively. These breeds were previously fed in a homogeneous programme where the feeding period was pre-determined and fixed at 133 days.

By using the alternative feeding periods for the different breeds, based on their genetic potential and relevant market prices, an additional 6% of gross profit can be realised.

This is one of many examples. We live a new era where the farming mentality has changed from ‘serving the cow with a bull to produce a calf and selling on the auction’ to a complex business. A farming operation must be managed as a commercial business. Precision agriculture, innovative marketing, and financial planning have become essential to increase productivity, profitability and to ensure sustainability.

ABOUT PHILLIP OOSTHUIZEN

Phillip Oosthuizen is the Head of Research and Economics at the Sernick Group. His primary objective will be to improve the various processes and products in the group's value chain by incorporating research results and innovative ideas.
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