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Feedlot Beef Cattle Performance

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Introduction

The Australian meat industry is under perpetual pressure from competitive exporting countries to meet high consumer expectations. Meeting international market requirements for a consistent, high-quality product are key operational focusses for the lot-feeding and meat-processing sectors within Australia. Supplying a high standard of product, whilst minimising non-compliance rates and economic impact are major industry goals.

The estimated value of the Australian beef and cattle industry was $17.87 billion in 2015-16, producing approximately 2.34 million tonnes of beef. The national herd was estimated to be at 26.2 million head in June 2016, with forward predictions down to 25.9 million head by 2017. If this occurs, it will represent a 3.4 million fall since 2013 and become the lowest national herd for twenty-four years. In-turn, meat production is also predicted to decline to 2.2 million tonnes. By December 2016, it is also estimated that total number of cattle in Australian feedlots will count for 900,000 head, down 90,000 head from the previous year (ALFA, 2016).

Forward predictions by industry bodies indicate the national herd size will diminish over the next two years, before a rebuilding processing will commence. After a lengthy drought, recent rain has seen improved volumes of available feed on pastures, driving restocking programs for cattle producers, in-turn pushing record livestock markets. This process is pushing economic hardship for operations further downstream in the national supply chain, such as feedlots and meat-processing facilities (MLA, 2016).

The Australian meat industry is the fourth largest in the world and consists of approximately 3% of the world cattle inventory, of which 35% of all cattle slaughtered in 2015 were supplied through the grain fed system. During 2015, Australia was the world's largest beef exporting country, exporting 74% of total production, with a value of $8.5 billion of beef being exported. (MLA 2016).

Consumer Expectations

International beef consumers hold high expectations of meat-eating quality. They expect the best quality and eating experience in return for their investment. Companies that supply international markets must uphold a reputation for quality and consistency that will match the consumer's level of expectation. By analysing the variables between the feedlot induction

stage and the chiller assessment stage enables descriptive reporting on the effect these variables have on eating quality. It is imperative that management regularly collect and analyse these data sets, to ensure the livestock procurement specifications are precise and consumer's expectations are rewarded.

Conducting perpetual grain-fed operational analysis will identify prominent cattle traits and key variables that have an impact on cattle feeding performance, chiller assessment grading and meat eating quality. In doing so, will provide management and livestock procurement personnel with an accurate platform to pinpoint the company's most relevant and desired cattle types, ensuring meat eating quality is consistent.

Continuous Improvement

To stay abreast of customer market requirements and the ever-changing forces within the industry, perpetual continuous improvement programs are a necessity if the company is to remain competitive on the international market place.

It is widely considered that a review should be undertaken on the Ausmeat grading system, taking into account improved industry knowledge of recent meat science. This process will require ongoing discussions between industry bodies and companies involved in the meat value chain. Discussions will aim to establish a more accurate and appropriate method of carcase grading to minimise non-compliance rates.

The Ausmeat and industry standards along with the limitations of procuring livestock from the same markets as competitors, often means that there is minimal difference amongst the various brands that are packaged between companies. Competitive grain fed brands are often fed similar feed rations, for the same length of time, and are packaged to the same uniform Ausmeat Standards. Similar specifications and standards minimise the ability to find a niche, or point-of-difference that meat marketeer's desire. Internal, ongoing analysis of markets and consumer expectations, will ensure the company remains abreast of market needs and niche potentials. (Ausmeat, 2016).

Key Drivers of Non-Compliance

There are many key drivers of non-compliance within the supply chain that require management and consideration. A production system that brings together and feeds animals sourced from multiple centers, varying in breed, size, age and temperament will be a challenge that sees all cattle perform differently over feeding programs. Industry regulations and operational systems can be the only source of managing these large number of variables, in the hope to minimise the impact that these key drivers have on non-compliance.

Stringent regulations and specifications within the National Feedlot Accreditation System (NFAS), Ausmeat, and AQIS regulators are key drivers for industry facing many challenges to remain compliant. Regular quality assurance management and auditing of systems remains a key requirement and area of focus for management.

Market Regulations

Target markets require certain specifications and export requirements which are driven by the importing countries government regulations. When packaging and labelling product for one market could mean that the product is not eligible for other markets, therefore if non-compliant, the production will require reworking to achieve eligibility. Failing to meet market regulations will drive non-compliance in the meat-processing sector (MICOR, 2016).

Livestock Markets

The Australian cattle industry is influenced by a number of key drivers. From a cattle-supply point of view, there has been a substantial decline in national herd numbers, which is expected to continue into 2017, bringing about strong competition between restockers, feedlots and processors for limited suitable stock. Due to on-going drought conditions and a substantial lack of feed, female slaughter volumes have been high over the previous twelve months as producers off-load breeding stock. More recently high volumes of rain have been received, seeing increased restockers action in the markets, along with a reduction in female slaughter numbers (MLA, 2016).

Within a very competitive livestock procurement sector, buyers may be required to forego key selection criteria of cattle, to remain within financial capabilities, ensuring numbers are available to supply contracts, or to sustain larger downstream operations, such as processing facilities. This restriction increases the possibility for lower performing cattle types to enter into the feedlot and meat-processing systems, which may affect weight gain, performance, eating quality, consistency and saleability of the company's products.

Animal Characteristics and Attributes

The physical characteristics of each animal could potentially drive non-compliance. Certain animal attributes and behavior styles should be considered, such as, the history of the animal taking into account previous feeding and handling, the ability to acclimatise during the early periods of their feeding program, the breed, the age, the animal temperament, less-dominant animals failing to feed and unhealthy animals not maintaining energy requirements. Individual animal's characteristics can drive lack of performance in the feedlot.

Operational Factors

In recent times, we have seen a higher-then-average rainfall, which could impact operational activities in the feedlot and cattle performance. If pens are wet and muddy, cattle underperform due to depressive mind set and a poor feed conversion ratio. Operationally, ensuring there is suitably trained labour available to manage and sustain feeding systems remains an industry challenge.

Feed Quality, Storage and Handling

The availability of quality feedstuffs is essential to a feedlot operation. Likewise, systems involving feedstuff storage and handling to minimise feedstuff degradation, processing and delivery to minimise over-processing rations, and bunk management ensuring fresh feed is available, are all key drivers of cattle performance. It is necessary to provide good management practices in the feed and milling areas to decrease cattle sorting feed delivered to the bunks, which decreases feed intake and energy intake, therefore impacting growth and performance. (Beef Central, 2015)

Climate and Environment

The condition of the feedlot environment is a key driver of cattle performance. The environment that the cattle are housed in should be clean, free of mud and effluent, it should have clean feed bunks and clean water, with ample shade provided, as these can associate to feed and energy intake and an increase in stress. Climatic conditions will impact the condition of the environment somewhat, however it is essentially operational personnel that will work to keep a sustainable feedlot environment, which will promote feed intake and weight gain, alleviating stress and possible non-compliance.

Livestock handling, transportation, loading

It can be argued that calm cattle handling techniques will minimise unnecessary stress in livestock whilst being moved, loaded, or transported, therefore reducing the possibility of non-compliance due to meat colour downgrades. Trained personnel will assist in stock handling techniques that are beneficial to livestock performance and carcase grading (Grandin, T., 2016)

Summary

In conclusion, the above compliance concerns are based on stringent industry parameters and key market forces, some of which are of a cyclical nature, others are driven by industry regulators. Historically the cattle market will challenge the feedlot and processing sectors for supply and quality of available product, applying pressure to compliance rates within the supply chain.

Key assumptions indicate that the ideal type of cattle, under the ideal circumstances, will gain weight daily and improve in meat-eating-quality over the course of the feeding cycle. Therefore, a predictive modelling program of feedlot cattle performance, carcase outcomes and compliance rates for specific target markets can assist in management practices, procurement solutions, saleability of production and overall profitability. Awareness of forward

production predictions can assist key management in an objective and proactive decision-making process.

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