Effects of growth enhancers on residues in lamb

The effects of steroidal growth implants and β- adrenergic agonist, alone, or in combination on feedlot performance and residues in lamb

Industry Sector: Cattle And Small Stock

Research Focus Area: Animal Products, Quality And Value-Adding

Research Institute: University Of Pretoria

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Aims Of The Project

- To investigate the feedlot performance of feedlot lambs treated with different steroidal growth implants, alone or in combination with oral beta-agonist supplementation
- To investigate the effects of different steroidal growth implants, alone or in combination with oral beta-agonist supplementation on the residues in the meat
Popular Article

Executive Summary

To investigate the effects of different steroidal growth promoters, alone or in combination with beta-agglutinin supplementation on carcase and

meat quality.
Traditionally sheep were finished extensively on the veld as this was thought to be the least expensive option. Alternatively, farmers bought in lambs from others who did not have enough grazing and finished them on harvested corn fields. This is also an inexpensive option as the corn residues are readily available after harvesting. These practices, however, give rise to seasonable availability of lambs with resultant huge fluctuations in lamb meat prices. Furthermore, the national sheep herd has decreased significantly over the last decade. There are various reasons for this. Drought and the resulting reduction in grazing, being one, and the substantial stock losses due to theft and predators, to name but two, being another (Mokolo, 2011).

Whenever a product is in short supply its price escalates. As a result of this, lamb has become an expensive. There, however, remains a HUGE demand for lamb as it constitutes a major source of protein for a significant part of South-Africa’s population. The constant production of lamb, that meets market specifications has thus become more and more important (Buttry & Dawson, 1990). In an effort to make lamb more readily and constantly available and also more affordable, lamb feedlotting is increasingly being used as a method for increasing the amount of meat being produced. Due to the current high cost of feed and the labour intensive nature of such ventures, the profit margin of a sheep feedlot can be very small.

At the present time it costs about R 326.00 to FINISH a lamb that is market ready within 70 days, (cost of the lamb excluded) (Le Riche, 2014). The total profit made on such a lamb after all production costs have been deducted could be as little as R24 – 00. The profit margin is dependent on the meat: feed price ratio. In an article by Voemol Feeds (2010) it is stated that feed conversion ratio is considered to be the critical aspect of feedlot profitability. Any reduction in feed intake or increase in feed efficiency, without compromising carcass quality, is economically important (Snowder & Van Vleck, 2003) Thus the lamb that converts feed the best (in other words the lamb that produces the most kilograms of meat, per kilogram of feed consumed), is the most profitable lamb. One could say that, an increase in profits constitutes a decrease in input cost and/or an increase in production output. Cost of feed is an important input cost, whilst growth rate and carcass composition is an important production output (Buttry & Dawson, 1990; Snowder & Van Vleck, 2003).

There is a need to balance more efficient food production, with positive public perception. This has become a great challenge. Professionals in the industry have to determine which products and methods could be optimally used to the benefit of the producers, without gaining negative opinions from the public sector and it has to go hand in hand with maintaining a high level of consumer safety (Buttry & Dawson, 1990).

Optimal feeding conditions that promote high voluntary intake, added to a high quality, properly balanced ration should promote profitability. The high cost of quality feed is, however, making it even more important to research the responsible, effective use of different types of growth promoting agents, alone or in combination. These products have the potential to: 1) produce animals with a higher meat: fat ratio; 2) to keep the feeding time down to a minimum and to thus reduce the impact on the environment; 3) to increase the ability to supply the protein needs of an ever-growing population.

The use of BAR agonists in ruminant production animals as a growth ENHANCER has been the subject of many heated debates and much media publicity. The reason for this is the very real potential that some of these products, clenbuterol, to name one, can have serious toxic effects in human consumers. (Stachel et al., 2003). BAR agonists used as growth promoting agents, work on the basis that they reduce body fat whilst increasing muscle hypertrophy, without causing significant alterations in organ and bone mass. They are therefore also known as repartitioning agents.