

DOES THE PRICE OF SOUTH AFRICAN LAMB ACCURATELY REFLECT THE PERCENTAGE OF MEAT OF THE LOIN CHOP?

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I. INTRODUCTION

The South African lamb/mutton production chain is hugely fragmented for large parts of the industry, with various role players influencing the process independently of one another. It is also well known that the origin of sheep meat in South Africa is from pasture as well as from feedlots, probably in equal amounts, with indications that beta-adrenergic agonists are being used in feedlot production. For these reasons the final quality and value for money of the product may vary considerably. This variation, as well as package claims that imply guaranteed satisfaction, can lead to lack of consistency of the product, with consumers having no guarantee that they will receive the same quality and value for money from one purchase to the next. With lamb being an expensive product we investigated whether price reflects the amount of meat (compared to fat and bone) found on the loin chop. Does an increase in price mean an increase in the percentage of meat?

II. MATERIALS AND METHODS

Twenty three products (lamb loin chops) were identified and collected from the shelves of five major retail outlets (R) and twelve smaller butcheries (B) on 14 different dates over a three month period (n=306, certain products were not always available due to drought conditions). Products varied in type, namely Karoo lamb (lamb valued for its unique flavor attributes due to grazing on herbaceous bushes and shrubs from a particular region of South Africa [1]), free range or feedlot. Products also varied in packaging (Modified atmospheric packaging: MAP, PVC overwrap, to openly displayed on shelves) and retailers and butcheries were spread over various socio-economic areas. For each sample, two loin chops were dissected into Meat 1 (loin muscle only), Meat 2 (the remaining muscle), fat and bone. These were then weighed and their percentage of the whole weight was calculated.

III. RESULTS AND DISCUSSION

Figure 1 shows the average percentage of fat and bone for loin chops from the various outlets. There were no differences between outlets for Meat 2 ($P = 0.2898$, data not shown here). All the Karoo (K) and free range (FR) products grouped together as having more Meat 1, a greater percentage of loin muscle ($P < 0.0001$), compared to the other products. This was a good outcome as these products are sold at a premium. It was however slightly unexpected as the feedlot meat production uses beta-adrenergic agonists which should increase muscle yield and decrease fat percentage. This however could possibly be explained by the fact that the feedlot lamb would still have a higher percentage of fat compared to Karoo and free range samples, which could overshadow the increase in muscle yield of feedlot samples. Percentage Fat ($P = 0.0001$) followed the pattern of decreasing with an increase in Meat 1 with the Karoo and free range samples having less fat although this was not as obvious as with Meat 1. Johnson *et al.* [2] found that the percentage lean meat yield decreased with and increasing carcass fat percentage in pasture-reared lamb. The fact that the fat in this study was not exactly inversely related to Meat 1 could be due to the way the chops were cut (with a long tail and therefore more non loin meat with extra fat or trim cut with less tail and mainly loin muscle). Most samples purchased had the long tail although some samples did have some of the extra fat trimmed off from the tail. This was not consistent with any particular store or socio-economic area. R1 showed percentage fat levels that did not differ from B6K which was the sample with the least fat and most Meat 1. R1 showed a high percentage of bone (data not shown here). It was expected that price should follow the same pattern as

percentage Meat 1, with an increase in Meat 1 resulting in an increase in price. There was a strong correlation (0.75) between price and Meat 1, with an increase in price resulting in a larger percentage of Meat 1. The Karoo and free range products were markedly more expensive ($P < 0.0001$) except for R2K which was sold at a lower level retail store which was more accessible to the bulk of the public. All other Karoo products were sold at butcheries in areas of increased socio-economic wealth. The area in which the products were bought and the type of retailer/butchery that was bought from seems to be more of an indicator of price, than percentage Meat 1, with stores in higher income areas charging more. Even this however was not as clear cut. When looking at the entire spectrum from cheaper products to more expensive ones there are many examples where you can get more Meat 1 yield for less money although in a lot of cases this can be attributed to retail vs. butchery with the retailer having the cheaper product. Safari *et al.* [3] found that price per kg of lamb differed between suburbs but not between retailers and smaller butcheries.

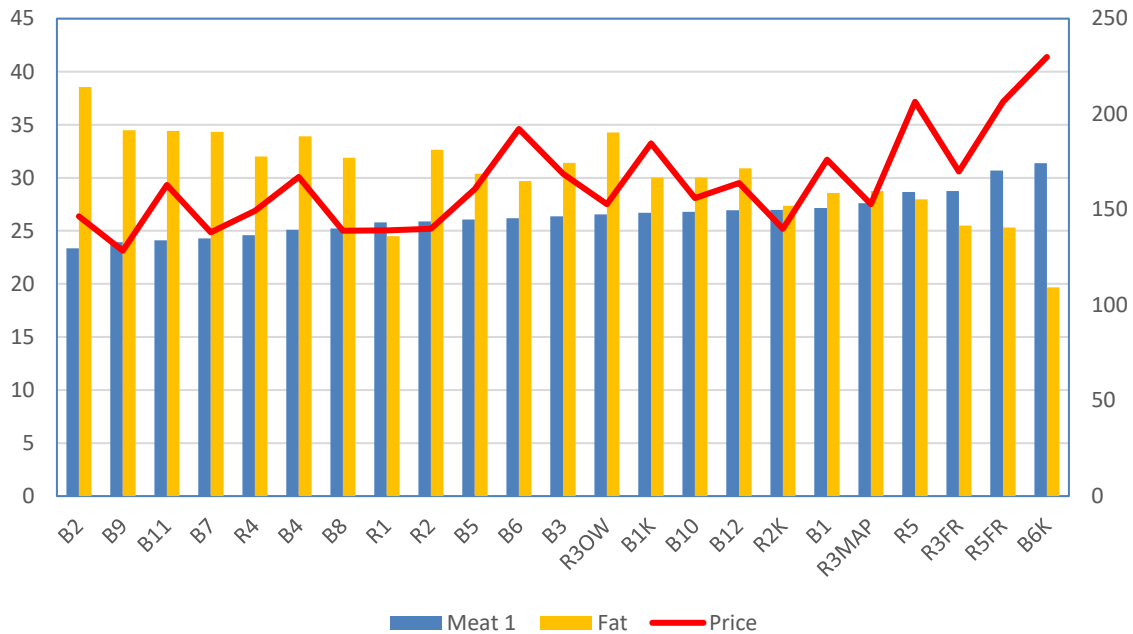


Figure 1. The relationship between price and percentage meat and fat of lamb loin chops from various retail outlets (R) and butcheries (B). Products are Karoo lamb (K), free range (FR) or feedlot/grain-fed.

IV. CONCLUSION

Lamb as a whole is a very expensive product and even though our larger study showed that quality as a whole was acceptable across the whole range of products, the price still varied quite considerably. Price alone does not seem to be a very accurate predictor of how much meat the consumer will get on their loin chop, except for the more specialized Karoo and free range products which have a much better meat to fat ratio and are considerably more expensive.

ACKNOWLEDGEMENTS

M. Hope-Jones would like to thank Red Meat Research and Development (RMRD) for funding the project, and the RMRD and National Research Foundation (KIC) for funding for attendance of the conference.

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