COMPOSITION OF TRIMMED RETAIL LAMB CUTS

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SUMMARY

Dissection of lamb cuts from 159 carcasses, trimmed to a consumer-acceptable presentation (score 2), showed that the muscle percentage decreased by 10 percent as carcass fatness increased from score 1 to score 5.

Negative correlations were found between GR measurement and both percentage yield of trimmed cuts (r = -0.61) and the muscle percent of the cuts (r = -0.59).

The impact of these findings on the value consumers receive when purchasing cuts from carcasses of different fatness is outlined.

INTRODUCTION

Domestic marketing of lamb in Australia has been based on a range of bone-in retail cuts. Differential trimming of these cuts results in a wide variation in lean meat content (Harris, 1982). This has undoubtedly contributed to the consumer perception of lamb as being too fat (Hopkins and Congram 1985; Hopkins 1988).

A new range of boneless lamb cuts (Currie 1986) offers significant improvements in the presentation of lamb. However, a heavy lean carcass (22-25 kg, fat score 2 or 3) is required to make this an economical and aesthetic proposition.

For traditional cuts presentation can be improved by trimming subcutaneous fat to a consumer-acceptable level. This strategy will not remove the intermuscular fat. The aim of this work was to determine the composition of trimmed retail cuts and the impact fat score has on the value consumers receive when purchasing lamb meat.

EXPERIMENTAL METHODS

Data was obtained from 159 carcasses representing two sexes (80 wethers, 79 ewes) and four sire genotypes (72 Poll Dorset, 39 Suffolk, 32 Wiltshire Horn, 12 Coopworth) all joined with Border Leicester x Polwarth x Booroola type ewes.

On the basis of liveweight, age, breed and sex at weaning in both December 1985 and 1986 lambs were allocated to two groups. One group (low plane) was run at a high stocking rate, the other (high plane) at a low stocking rate. Sixty eight of these lambs were slaughtered in March/April and 68 in May. In addition 24 lambs were slaughtered at weaning in 1986.

In both years the groups were run on irrigated ryegrass/white clover/cocksfoot pasture utilizing a form of block grazing. Feed allowances to achieve target growth rates as specified by Jagusch et al. (1979) were adopted, resulting in a range of carcass weights and levels of fatness. One carcass was not available for dissection as a result of damage at slaughter.

At slaughter the standard AUS-MEAT carcass weight (i.e. hot and fats out) was recorded and the hot GR (total tissue thickness at the 12th rib 110 mm from the midline) measured using a GR knife.

All carcasses were divided into half and the left side butchered into the following cuts - leg, midloin, ribloin, square cut forequarter, shank, breast, flap and neck.

Each cut was weighed, trimmed to a selvedge equivalent of a score 2 carcass by a commercial butcher and reweighed. These trimmed cuts with associated bone and trim were packed in heavy duty bags and stored at -10°C until dissection into muscle, bone and fat using guidelines outlined by Wynn and Thwaites (1981).

Percentage yield of trimmed cuts (Yield 1) and muscle percent of the cuts (Yield 2) was calculated.

Stepwise linear regression analysis was used to develop prediction equations using the variables genotype, sex, carcass weight and GR.

RESULTS

The carcasses used in this experiment covered the range seen commercially as shown in Table 1.

Table 1. Means, standard errors and ranges of carcass characteristics (n = 159)

	Mean	± Se	Range
Hot carcass weight (kg)	15.6	0.29	5.4 - 25.5
Hot GR (mm)	11.1	0.40	2.0 - 28.0
Yield 1 trimmed cuts (%)	83.4	0.25	62.4 - 90.7
Yield 2 muscle (%)	64.5	0.37	49.0 - 89.8

The GR measurement was the best predictor of both yields, with which it was negatively correlated. Carcass weight, genotype and sex having no significant effect on the models. The two models were:

Yield 1 = 87.6 (±0.48) - 0.38 (±0.04)GR
r = -0.61; SE = 2.49; P < 0.001

Yield 2 = 70.7 (±0.72) - 0.55 (±0.06)GR
r = -0.59; SE = 3.80; P < 0.001

According to these models as GR measurement increases an increasing proportion of fat remains within retail cuts despite trimming of subcutaneous fat. A carcass with a GR of 5mm would yield 86% and 68% respectively for Yields 1 and 2 but at GR 25mm only 78% and 58%. This represents a drop in Yield 1 of 8% for a score 5 carcass compared to a score 1 carcass and 10% for Yield 2. The drop in Yield 2 is less than reported in the preliminary results (Hopkins et al. 1988).

DISCUSSION

The implications of these findings for consumers relate to value for money. Those who purchase cuts from fat carcasses must buy a larger quantity of meat to acquire

the same amount of protein (muscle) as those who buy cuts from leaner carcasses.

It was suggested by Hopkins et al. (1988) that if consumers wish to purchase meat on the basis of its protein (muscle) content and receive value for money then price schedules should be based on the relationship for Yield 2. This preliminary work, however, showed a larger difference in Yields 1 and 2 between GR 5mm and GR 25mm and a larger decrease in Yield 2 with increasing GR than reported here. In addition this would imply keeping the price per kg of muscle for any type of trimmed cut constant regardless of the fatness from which the cut came.

As a result the price per kg of trimmed retail cuts would be less for those from fatter carcasses, cuts traditionally being sold on the basis of weight of meat and not of muscle. Consumers are known to be influenced at the time of purchase by the total cost of the item (Hopkins and Congram 1985). Therefore it does not seem likely that when comparing trimmed cuts they would purchase those from a score 2 carcass over a score 5 carcass, if they were paying the same price per kg of meat, particularly for cuts such as ribloin chops where trimming removes most of the waste fat. For other cuts such as legs which are commonly sold as roasts the internal fat is not readily visible and thus consumers choosing between trimmed cuts are unlikely to detect a difference in the muscle content.

The importance of these factors is directly influenced by the degree of trimming, and it is essential that the cuts are trimmed to a score 2 presentation.

CONCLUSIONS

Trimming subcutaneous fat to a consumer-acceptable presentation (score 2) removes most of the difference in the composition of lamb cuts from carcasses of different fatness. It remains, however, more desirable for health, energy usage and economic reasons that production of overfat carcasses be discouraged.

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