

## PERCEPTIONS OF BEEF EATING QUALITY IN NORTHERN IRELAND

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### Introduction

Irish consumers have been found to associate several types of 'risk' with the purchase of beef (McCarthy and Henson, 2005); the greatest of these is financial risk ('wasting money'), performance ('the product will not meet taste expectations') and safety. 'Quality' has been shown to be a key issue for consumer behaviour, and this term encompasses tenderness, juiciness and anticipated taste as well as overall appearance, nutritional value, perceived safety and provenance (Krystallis and Arvanitoyannis, 2006). Eating quality attributes are very difficult to predict by the consumer. Focus groups have indicated that cut, colour, visible fat, price, origin and production information are 'cues' used by consumers or purchasers, together with place of purchase (Grunert *et al.*, 2004). However, few of these influence eating quality. It is, therefore, not surprising that consumers are reported to have difficulty predicting eating quality at time of purchase (Grunert *et al.*, 2004).

In Northern Ireland, the consumption of 'carcase meat' is a little higher than elsewhere in the UK (Anonymous, 2003); beef consumption is about 150g per person per week out of over 1000g meat and meat products per person per week (DARD, 2002). The aim of this work was to determine whether this pattern reflected satisfaction with the quality of beef purchased and whether Northern Ireland's purchasers felt able to predict eating quality of the beef they buy.

### Materials and Methods

**Trial 1.** A total of 175 customers were questioned in five supermarkets in and around Belfast. Surveys were conducted both during the week and at weekends and in mornings, afternoons and evenings to provide a distribution of ages and socioeconomic backgrounds. Customers who were seen to select beef were approached on a 'next come, next asked' basis. The country of origin of the beef they had chosen was not recorded and will have included beef from both Northern Ireland and elsewhere.

Purchasers were asked about their choice of beef, how frequently they were satisfied with selected attributes of beef and whether they were able to predict the eating quality of a certain cut of beef by the price. In addition, consumers were asked socio-economic questions (Bailey, 1978; De Vaus, 1996). Although the number of beef purchasers sampled was small, it showed a very similar distribution of household income to that reported for Northern Ireland (NISRA, 2001). Purchasers included a higher proportion of women (136) than men (40) and more older people than younger: <25 (11), 25-34 (17), 35-44 (35), 45-59 (68), 60+ (45). The first three age groups were combined for statistical analyses.

**Trial 2.** As part of a larger study, consumers of beef were asked to taste a range of cuts, which were grilled or roasted (360 consumers each) under controlled conditions. Consumers were untrained members of the public, who attended once and were selected for these panels on the basis that they ate beef on a regular basis. Panels were conducted at a central location. Consumers were asked to score seven pieces of beef for satisfaction on a category scale (unsatisfactory / satisfactory everyday quality / better than everyday quality / premium) and were also asked to complete a questionnaire covering a number of demographic questions.

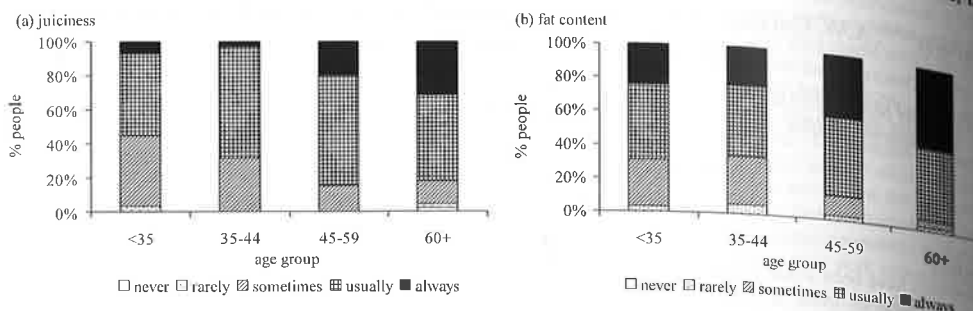
**Statistics.** Associations between answers to selected questions were assessed by means of chi-squared probabilities calculated from contingency tables using the method of Pearson.

### Results and Discussion

In Trial 1, each purchaser was asked 'Are you satisfied with the beef that you buy in terms of its tenderness / flavour / juiciness / fat content / gristle content?' Overall the proportion of purchasers who claimed to be 'usually' or 'always' satisfied with the tenderness was 84%, flavour, 63%, juiciness, 63%, fat content, 63% and gristle content, 65%. Thus, while most purchasers are content with the quality of beef that they buy, up to 37% of purchasers were 'never', 'rarely' or only 'sometimes' satisfied. When asked: 'Do you feel you can predict the eating quality [of the cut they had selected] by the price?', the answers were: never (16.5%), rarely (34%), sometimes (16.5%), usually (22%), always (11%). Thus, half of purchasers felt that price 'never' or 'rarely' predicted the final eating quality.

Age had a significant effect on purchasers' satisfaction with tenderness ( $P < 0.05$ ), flavour ( $P < 0.01$ ), juiciness ( $P < 0.001$ ), fat content ( $P < 0.01$ ) and gristle content ( $P < 0.05$ ). In all cases, purchasers younger than 45 were less satisfied than older consumers, as illustrated in Figure 1(a) and (b) for juiciness and fat content. In an apparent contradiction, older people felt significantly less ( $P < 0.01$ ) able to predict eating quality by price, with 57% of those 45 and older feeling that price never or rarely predicts eating quality compared with only 34% of those younger than 45. This may reflect the greater

experience of the >45 age group and, if younger people expect to be able to predict eating quality by price, this may also contribute to their dissatisfaction.



**Figure 1:** Effect of age group on satisfaction with beef eating quality in terms of (a) juiciness and (b) fat content.

Neither gender, income group nor frequency of consumption influenced purchasers' satisfaction with eating quality, but household composition had some effect. Purchasers from households with children were more likely to respond that they were 'usually' satisfied with tenderness, flavour and juiciness (all  $P < 0.05$ ), while those from adults only households gave a greater spread of responses, with a greater proportion 'always satisfied'. This may be due to children being more discerning (or hard to please), or because the person questioned was responding for the whole family and not just for themselves.

Trial 2 evaluated the effect of age, sex, income group and household composition on the actual satisfaction scores given by consumers to a range of beef muscles; only age had any effect ( $P < 0.001$ ). For a given range of roast topside joints, the '60+' age group found 45% to be 'better than everyday quality' or 'premium', compared with only 30% for the younger age groups. The '60+' age group found only 17% of the sample to be 'unsatisfactory' compared with 30% younger assessors. The same differences were not observed for sirloin steak, perhaps due to its generally better eating quality scores.

A similar effect of age on satisfaction with beef has also been recorded in Australia (Cox *et al.*, 1997) and Greece (Krystallis and Arvanitoyannis, 2006).

### Conclusions

Most Northern Ireland purchasers are 'usually' satisfied with the quality of the beef they purchase. However, a high level of satisfaction with eating quality and fat content is a characteristic of older purchasers, which is not shared by those under 35. This effect is reflected, in part, when consumers are presented with beef to assess for eating quality. This suggests that, as has been observed in other countries, the younger generation of beef purchasers is more discriminating and demanding with regard to eating quality than their parents.

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