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French consumer evaluation of eating quality of Limousin beef

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The aim of this study was to evaluate the eating quality of 2 beef cuts (striploin and rump) from 102 Limousin cows. Carcasses were first graded according to the Meat Standards Australia (MSA) methodology at the 5th and 10th rib 24 h *post-mortem* by 2 chiller assessors. This allowed the prediction of the MSA index for the whole carcass, which is an indicator of beef potential eating quality. Muscle samples were then collected, sliced with a thickness of 2.5 cm, aged for 10 days and finally grilled according to the MSA protocol. A total of 480 consumers scored beef for tenderness, juiciness, flavour and overall liking on a 0 to 100 scale. In addition, consumers were asked to assign a quality rating to each sample: 'unsatisfactory' (2*), 'good everyday' (3*), 'better than everyday quality' (4*) or 'premium quality' (5*) with an average of 3,03 and 2,9 for striploin and rump. Observed MQ4 scores were calculated combining scores of tenderness, juiciness, flavour and overall liking according to the MSA protocol. MQ4 values for the 2*/3*, 3*/4* and 4*/5* boundaries were 54, 62 and 76 respectively. The MSA index ranged from 45.5 to 58.5 and had a median value of 51,33. The marbling scores at the 5th and 10th ribs were positively correlated with the MSA index (0.34 and 0.47 respectively). Finally, beef carcasses were divided into two equal groups (under or above the median MSA index). The MSA index and the marbling score were 13 and 15% higher respectively in the second group of carcasses while ribfat thickness was 88% higher. Scores for tenderness, juiciness, flavour and overall liking as well as MQ4 were on average 9 to 13% higher for the rump and 5-10% higher for striploin in the second group compared to the first one. Overall, the results showed that the Australian MSA model might be relevant for Limousin cows but may require improvements for carcass grading at the 5th rib.

BeefQ – testing a beef eating quality prediction system for Wales and England

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The BeefQ project was implemented to address industry and consumer concerns around beef eating quality consistency. To adapt the Meat Standards Australia (MSA) model for UK conditions, consumer taste testing beef was conducted using the standard protocol developed in Australia. Four cuts (sirloin, tenderloin, salmon and feather blade) from 90 sides of beef were evaluated as grilled steak by 1,200 Welsh and English consumers. Carcase suspension method and 7 and 21 days maturation were also tested. Cuts were collected in two seasons from cattle types typical of the Welsh herd (beef breed steers and heifers, dairy cross steers and heifers, young bulls and cows). Discriminate analysis determined the relationship between the individual consumer scoring scales of tenderness, juiciness, flavour and overall liking and provided a measure of the relative importance of each scale in determining the final quality decision. Overall eating quality scores (an aggregation of scales above (1-100)) were used to determine cut off values for what consumers consider to be good everyday, better than every day and premium quality beef. The relative importance of each variable was 0.3 tenderness + 0.1 juiciness + 0.3 flavour + 0.3 overall liking. These weightings were similar to current MSA 30:10:30:30 ratios indicating that the two consumer populations were similar. The cut off scores for better than every day and premium quality, respectively, were slightly lower (37 vs 41) and slightly higher (79 vs 77) than current MSA values, indicating that BeefQ consumers may discriminate more for both unsatisfactory and premium beef. This is important for brands where any inconsistency may impact value. These analyses provide strong evidence that Welsh and English consumers clearly differentiate eating quality from unsatisfactory to premium and that a universal set of sensory weightings and cut off values can adequately define these categories.