

Consumer perception and preference for beef mince consumption: Predicting premiumisation possibility of beef mince in NZ

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Objectives: This study was conducted to understand consumer opinions about the frequency of beef mince consumption in their household, the type of food/products they make out of mince, the most important attributes of mince for them, and what are the negative and positive perceptions towards consumption intention of beef mince.

Materials and Methods: In this study, a social psychological approach, the theory of planned behaviour (TPB) defined by Ajzen, 1985, is applied to explain consumers' intention to consume mince beef in New Zealand. The survey questionnaire included the questions related to consumer demographics (gender, age, annual household income, educational qualifications), consumption frequency of beef mince, the intended use of minced beef and the items of the TPB, i.e., Attitude, subjective norms, perceived behavioural control and intention to consume plus measures of fat content, textural properties and perceived utility value of minced beef. A convenience sample of 207 individuals participated in the online questionnaire, although only 79% of the questionnaires contained complete data. Ethics approval was obtained via the Wintec human ethics approval committee (ref no. WTLR50280920). The sensory trial was conducted with ravioli containing 4 different mince types; lean fine, fatty coarse, lean coarse, and fatty fine to evaluate the actual preferences. The ravioli were prepared and fried prior to the sensory trial, by using a deep fryer. Four sessions were conducted with 70 consumer panellists using a 7-point hedonic scale (1 = dislike very much, 7 = like very much). Consumers were also asked to rank the given prototype product in order of preference (1 = most preferred, 4 = least preferred).

Results and Discussion: Seventeen per cent of respondents consumed beef mince twice a week, 26.2% weekly, and 19.5% fortnightly. The frequency of consumption of beef mince has a significant positive relationship with the intention to consume beef mince. Intention to consume mince beef had a high positive influence on respondents who belonged to the age group 40-49 years old, with income level over NZD 100,000 or more. Consumer attitude perceived behavioural control and textural properties have no significant relationship with consumers' intention to consume beef mince. The higher fat content of mince has a significant negative relationship with consumer intention to consume beef mince. The perceived utility value of mince and subjective norms has a significant positive relationship with consumer intention to consume beef mince. Perceived food safety and perceived health values positively and directly influence the consumer's attitudes which accounted for 48% of the consumer attitude variance. Marketing promotions at the retail stores or via media positively and directly influence the social norms of beef mince which accounted for 24% of the variance of social norms. Previous consumption experience, price and premium value of the beef mince positively and directly influence the perceived behavioural control on beef mince which was in together account for 27% of the variance of perceived behavioural control. This finding confirmed that the perceived utility value and fat content in mince have a strong impact on the intention to consume beef mince. Mince texture impact on behavioural intention is insignificant. Respondents had indicated a higher preference for coarse premium ($\leq 5\%$ fat) mince type in preparation of Nachos compared to other mince types. Coarse prime (6-10% fat) and coarse standard (11-30% fat) mince was selected in the preparation of Burger patties. In preparation of dumplings, survey respondents had selected fine, premium ($\leq 5\%$ fat) and fine, prime (6-10% fat) mince compared to other mince types. Fine standard mince was given a higher preference for a mince pie and burger patties as its intended food use. Almost 42% of respondents (N=79) had no buying intention of readymade premixes for use in nachos, mince pies, tacos, and dumplings although 37% had the intention to buy. More consumers (49%, N=97) were happy to spend more if more information (beef mince intended use, nutritional information, functional information, etc) available in the mince packaging. About 94% of consumers preferred the taste, flavour and texture of both high fat (fine and not fine) treatments to varying extent (like slightly, moderately or very much). There was a significant difference between high-fat and low-fat samples in relation to consumer preference. There was no distinct difference in preference related to grinding size. High-fat treatments were given the most preferred rank compared to low-fat treatments. The difference between fine and coarse was not significant. Lean treatments were the least preferred by 90% of panellists.

Conclusion: Sensory results were opposed to the responses from the consumer survey. This is clear evidence that consumers prefer high-fat mince types when it comes to the overall sensory experience, although the consumers tend to choose low-fat mince when they decide to incorporate mince in a meal. This will allow us to introduce a new premium scale related to the best sensory experience for mince consumers.

Key words: Beef, Mince, Consumer, Preference, Perception