



Agribusiness
& Economics
Research Unit
LINCOLN UNIVERSITY



UK and USA alternative proteins consumer consumption behaviours and product preferences

Timothy Driver
Caroline Saunders
Paul Dalziel
Peter Tait
Paul Rutherford
Meike Guenther

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Agribusiness and Economics Research Unit
PO Box 85084
Lincoln University
Lincoln 7647
Canterbury
New Zealand

P: (64) (3) 423 0372
www.lincoln.ac.nz/AERU

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Key Points

- The Agribusiness and Economics Research Unit (AERU) at Lincoln University with the support of research partners under the *Unlocking Export Prosperity from the Agri-food Values of Aotearoa New Zealand* research programme has estimated values for selected credence attributes of alternative protein products by UK and US (Californian) consumers, with a focus on identifying preferences for attributes considered *distinctively New Zealand*.
- This involved an online survey of UK residents and Californian residents in October 2020, using a research panel. The survey process achieved 992 and 999 responses for the two locations respectively with suitable representation of key population demographics.
- This survey reports on:
 - Dietary preferences and underlying attitudes and values
 - Importance of selected product attributes for food products, and specifically alternative protein products
 - Food neophobia
 - Awareness and consumption frequency of protein sources, including alternative protein products
 - Motivations for increasing or decreasing consumption of alternative protein products
- Behaviours and preferences in relation to food in general, and alternative protein products in particular, were very similar between the two markets, while the UK had a higher rate of specific diets compared with the Californian sample. UK participants also indicated a higher preference for animal welfare credentials in food products.
- Nearly half of participants in both the UK and California showed a reduction in their overall meat consumption (46% and 44% respectively), with most participants reducing their consumption of beef products in both samples. Reductions in meat consumption were motivated most strongly by health concerns in both samples.
- As alternative protein products are new types of protein sources, participants' aversion to new kinds of foods ("food neophobia") was assessed. This showed a similar average level of moderate food neophobia by participants in both samples, with UK participants scoring an average 46 out of a possible 70 points, and Californian consumers scoring an average 45 out of 70, on the food neophobia scale.
- Awareness of all alternative protein product types was higher for UK participants than Californian, with *plant-based alternative protein products* being more familiar to participants in both samples compared with *insect-based* or *lab-grown* products.
- Around 40% of UK participants consume plant-based alternative protein products at least *monthly*, with approximately 11% consuming *edible insect products*. In the Californian sample,

the rate of *edible insect* consumption was higher (approximately 13% had consumed these), while meat-like plant-based product consumption was lower, compared with the UK sample. Both samples showed a significant intent to increase alternative protein product consumption overall.

- The top four factors motivating consumers to increase alternative protein product consumption were the same for both samples: *taste, animal welfare concerns, to improve health and reduction in price*. Consistent with this, the perceived poor taste of alternative protein products was the most likely impediment to consumption in both the UK and Californian samples.

Chapter 1

Introduction

This study is part of a research programme entitled Unlocking Export Prosperity from the Agri-food Values of Aotearoa New Zealand. It is funded by the Ministry of Business, Innovation and Employment (MBIE) Endeavour Fund for science research programmes.

The research aims to provide new knowledge on how local enterprises can achieve higher returns by ensuring global consumers understand the distinctive qualities of the physical, credence and cultural attributes of agri-food products that are “Made in New Zealand”.

Food exports are an important contributor to the New Zealand (NZ) economy and both the United Kingdom (UK) and United States of America (US) are established as important destinations for New Zealand's food product exports. It is critically important for NZ exporters to understand export markets and the different cultures and preferences of those consumers to safeguard market access, and for realising potential premiums.

Alternative protein products have emerged as a significant alternative to traditional protein sources such as meat or fish, driven in part by changing consumer preferences and the ecological and climate impacts of traditional livestock production systems. While the rise of alternative protein products has been projected to decrease the global market share for traditional meat products into the future, they also represent a significant opportunity for New Zealand producers and exporters to diversify their offerings, capture additional market share, as well as capture potential premiums for the attributes of these products.

This report describes the application of a survey of UK and US (Californian) consumers regarding their consumption of alternative protein. While search attributes such as price or colour can be observed directly, and experience attributes such as flavour or texture can be assessed when consumed, credence attributes such as environmental sustainability cannot be immediately seen or experienced at the point of sale. For products promoting credence attributes, the role of verification including labelling is of significant importance.



Chapter 2

Survey Method

To understand how consumer's consumption and attitudes towards alternative proteins this study used a structured self-administered online survey conducted in the UK and US (Californian) consumers in October 2020. The survey was administered through Qualtrics™, a web-based survey system, and had a sample size of 992 protein consumers for the UK sample and 999 for the Californian sample.

The survey was developed by the research team drawing from a literature review on consumer trends for animal and plant proteins, results from previous surveys examining consumer attitudes in overseas markets, a scoping survey of 200 UK protein consumers (August 2020) and consultation with industry partners and stakeholders, especially those on the advisory board.

Sampling involved recruiting participants from an online consumer panel database provided by an international market research company (dynata.com). Panel members are recruited by online marketing across a range of channels and panels are profiled to ensure adequate representativeness. Panels are frequently refreshed, with the participation history of members reviewed regularly. Respondents for each survey are compensated with a retail voucher for completing a survey. Potential respondents were recruited by e-mail.



Chapter 3 Survey Results

3.1 Sample demographic description

- The UK and Californian samples comprised a wide range of demographics which is important to ensure that the sampling process has broadly canvassed the relevant population (**Figure 3.1** and **Figure 3.2**).
- The UK sample had a higher rate of specific diet behaviours than the Californian sample.

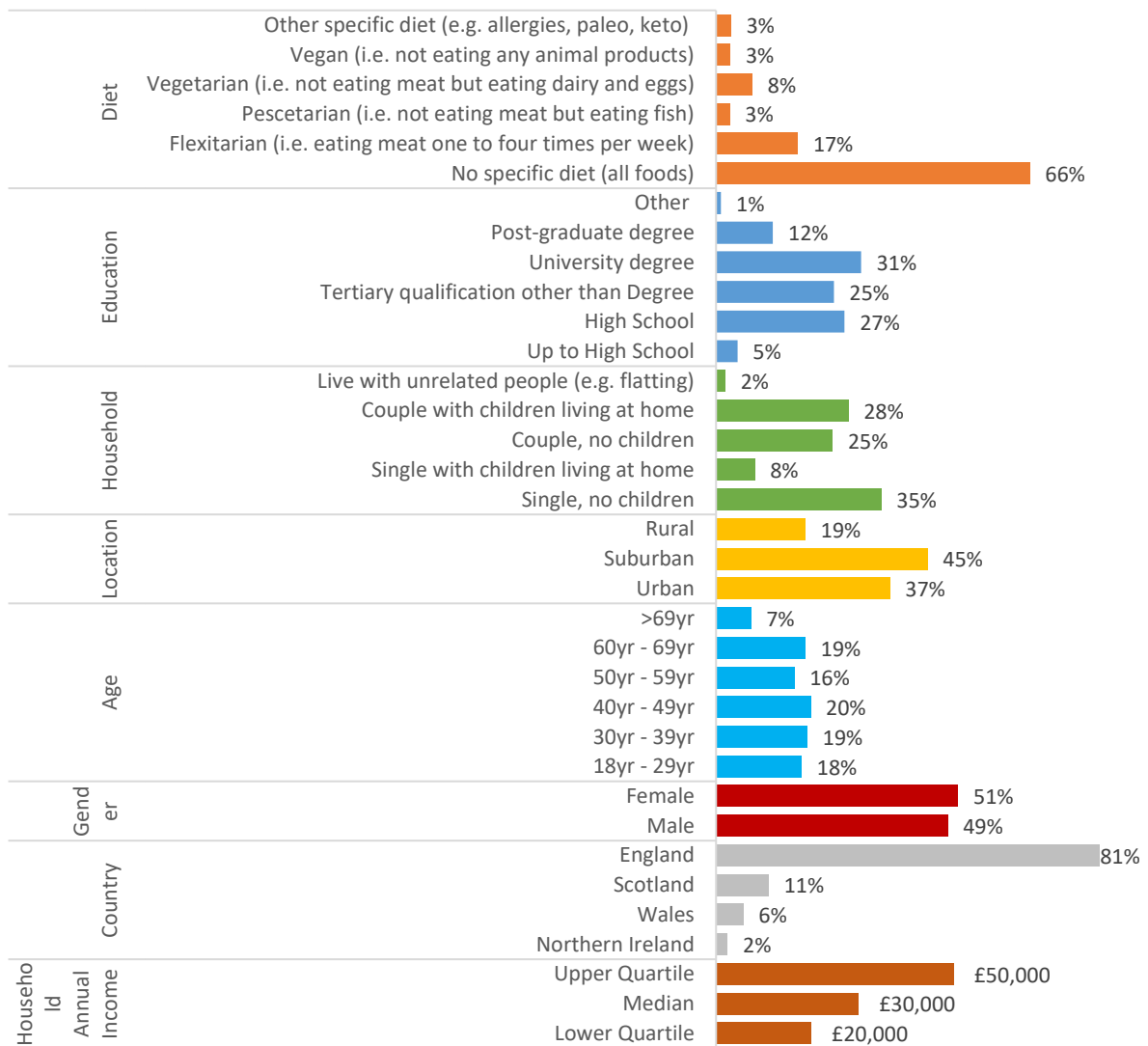


Figure 3.1: UK sample demographics

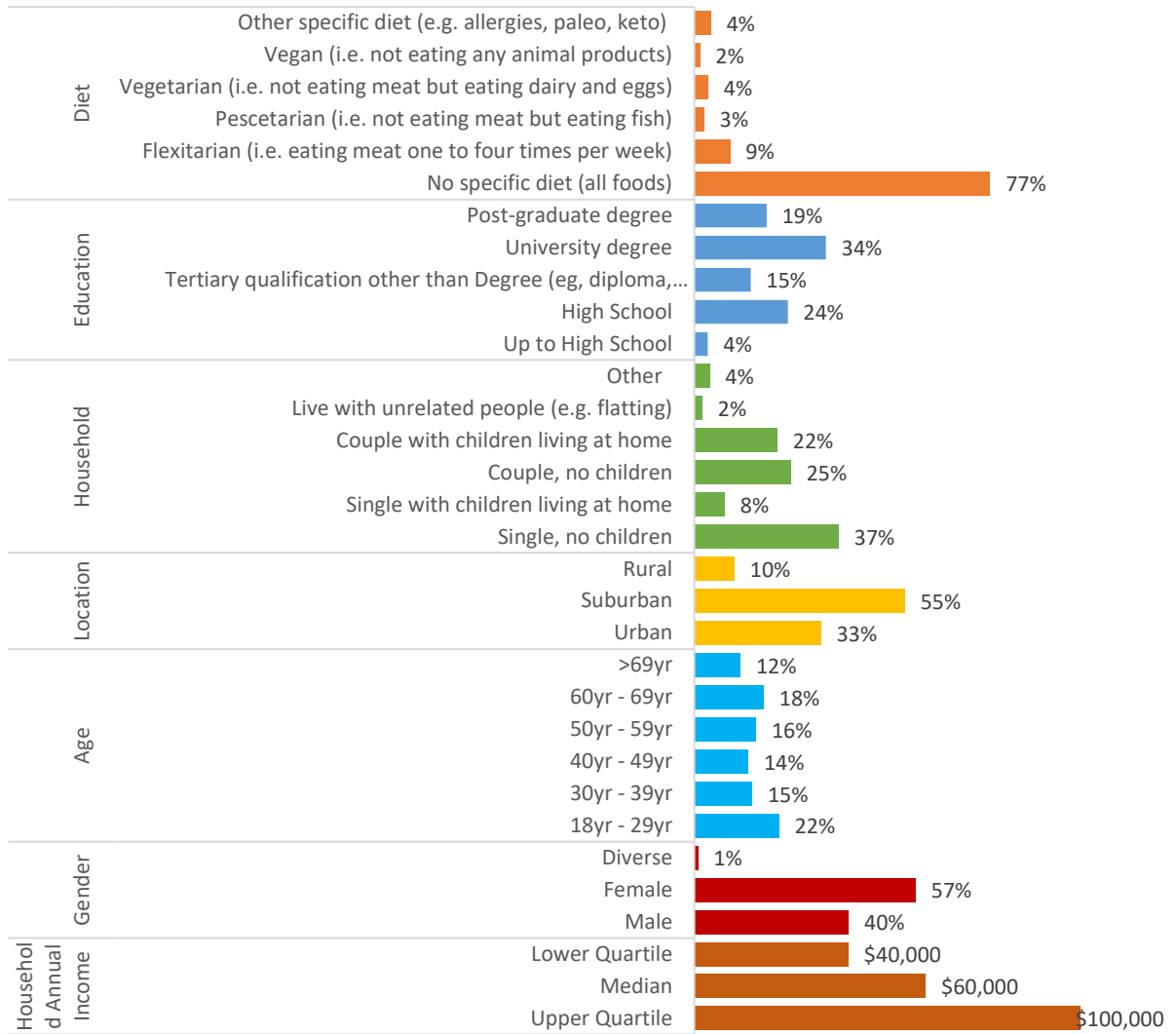


Figure 3.2: Californian sample demographics

3.2 Food attribute importance

- The top three most important food attributes when purchasing were the same for both samples: food safety, higher quality, and no added hormones (**Figure 3.3** and **Figure 3.4**).
- The UK respondents rated animal welfare more than the US with 38 per cent stating it was very important compared to 22 per cent in the US.

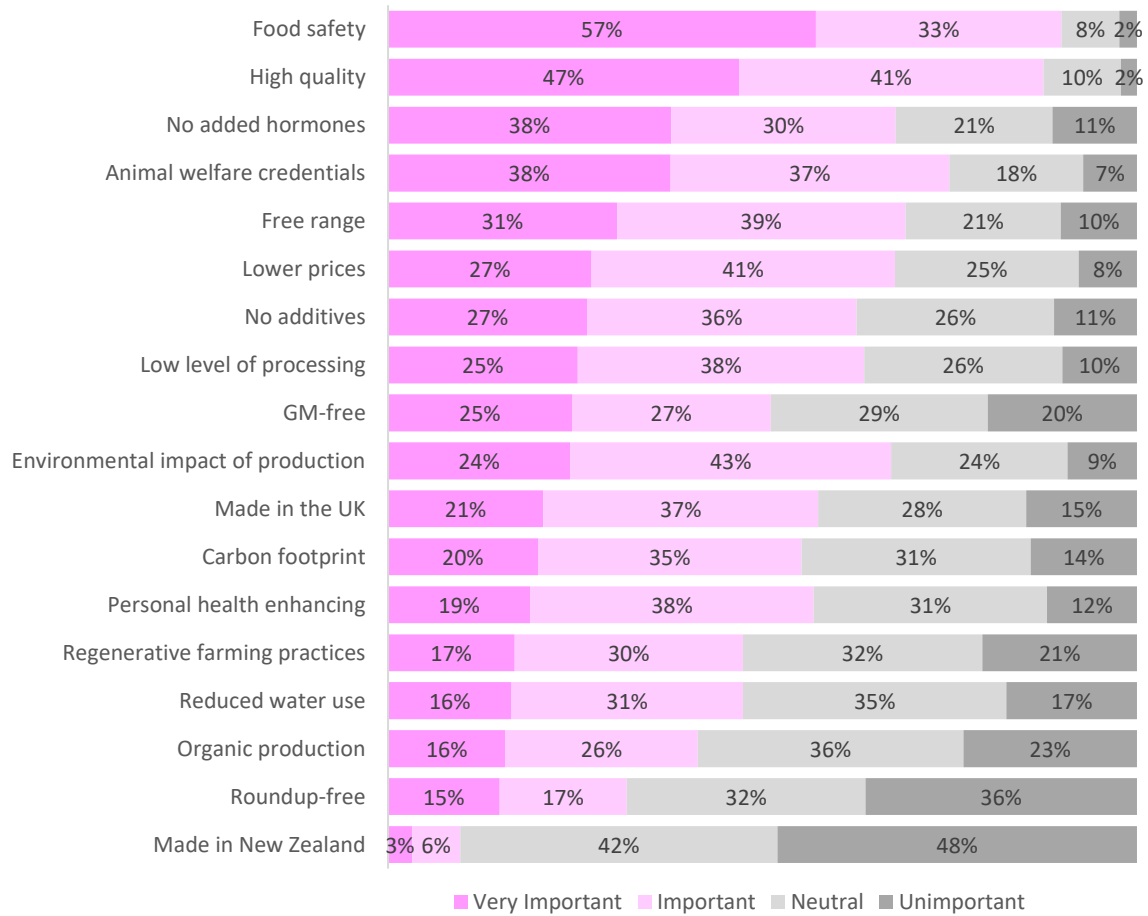


Figure 3.3: Importance of food attributes: UK

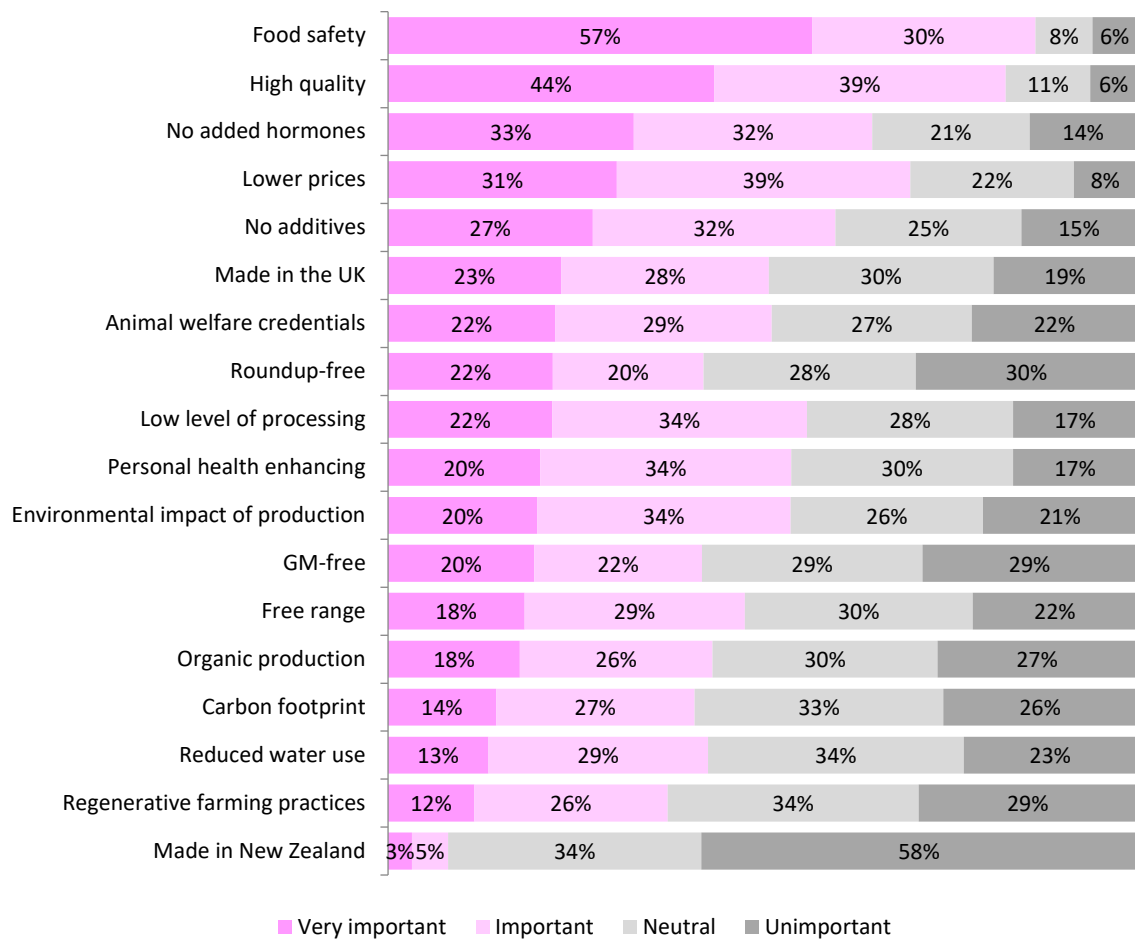


Figure 3.4: Importance of food attributes: California

3.3 Measuring aversion to new foods using the Food Neophobia Scale

- An important factor in assessing the possible uptake of new types of protein sources, such as insects or lab-grown products, are consumers attitudes and perceptions towards different and new foods that they may not be familiar with.
- A well-known approach to measuring consumers openness to trying new foods is the Food Neophobia Scale (FNS).
- The FNS comprises 10 statements to which participants respond on a 7-point Likert scale, ranging from 1 for “strongly disagree” to 7 for “strongly agree” (**Figure 3.5** and **Figure 3.6**).
- A total score is calculated as the sum of the 10 items, and varies between 10 and 70 with 70 representing the most neophobic consumer (**Figures 3.7** and **3.8**).

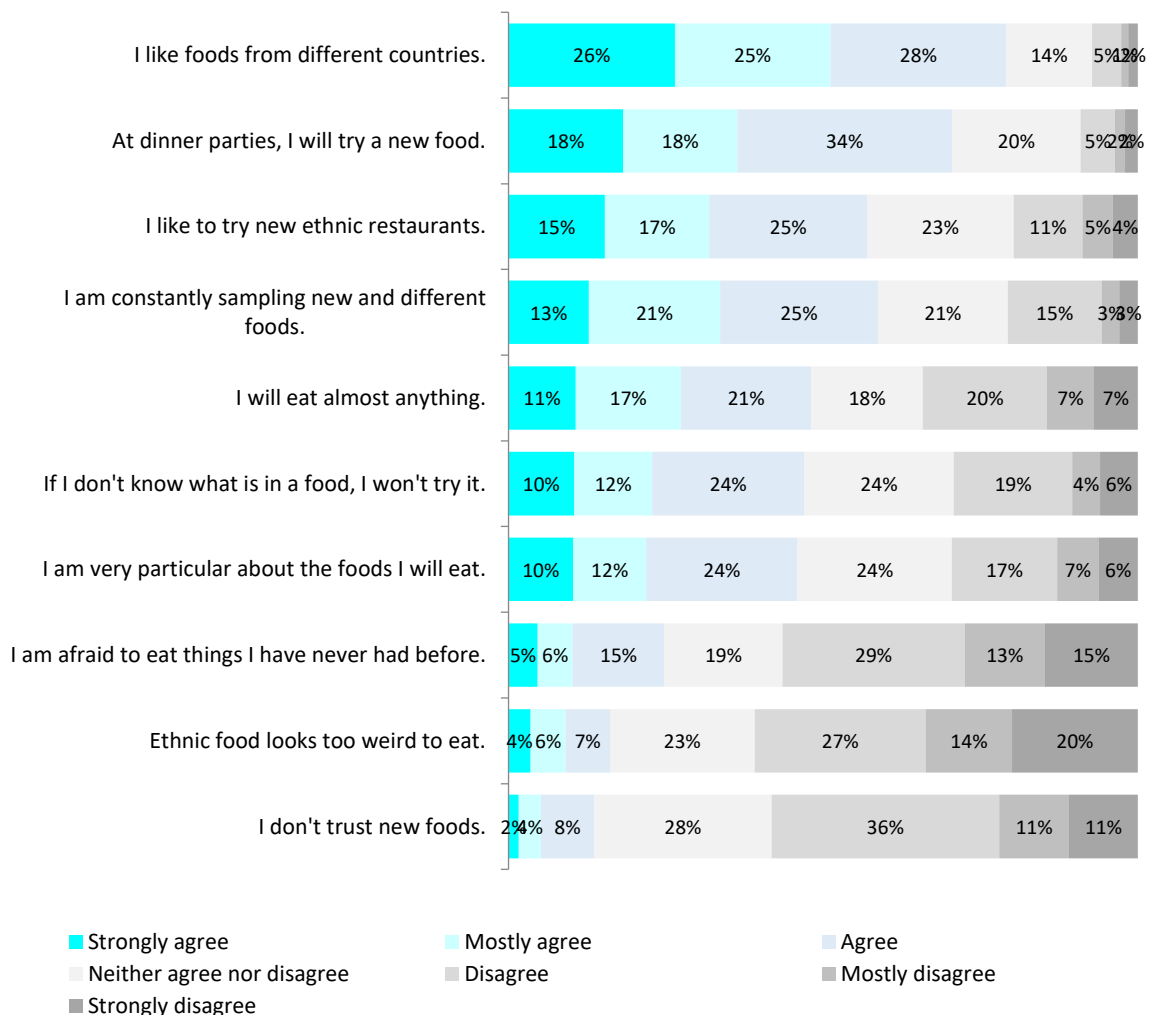


Figure 3.5: Food Neophobia Scale Items: UK

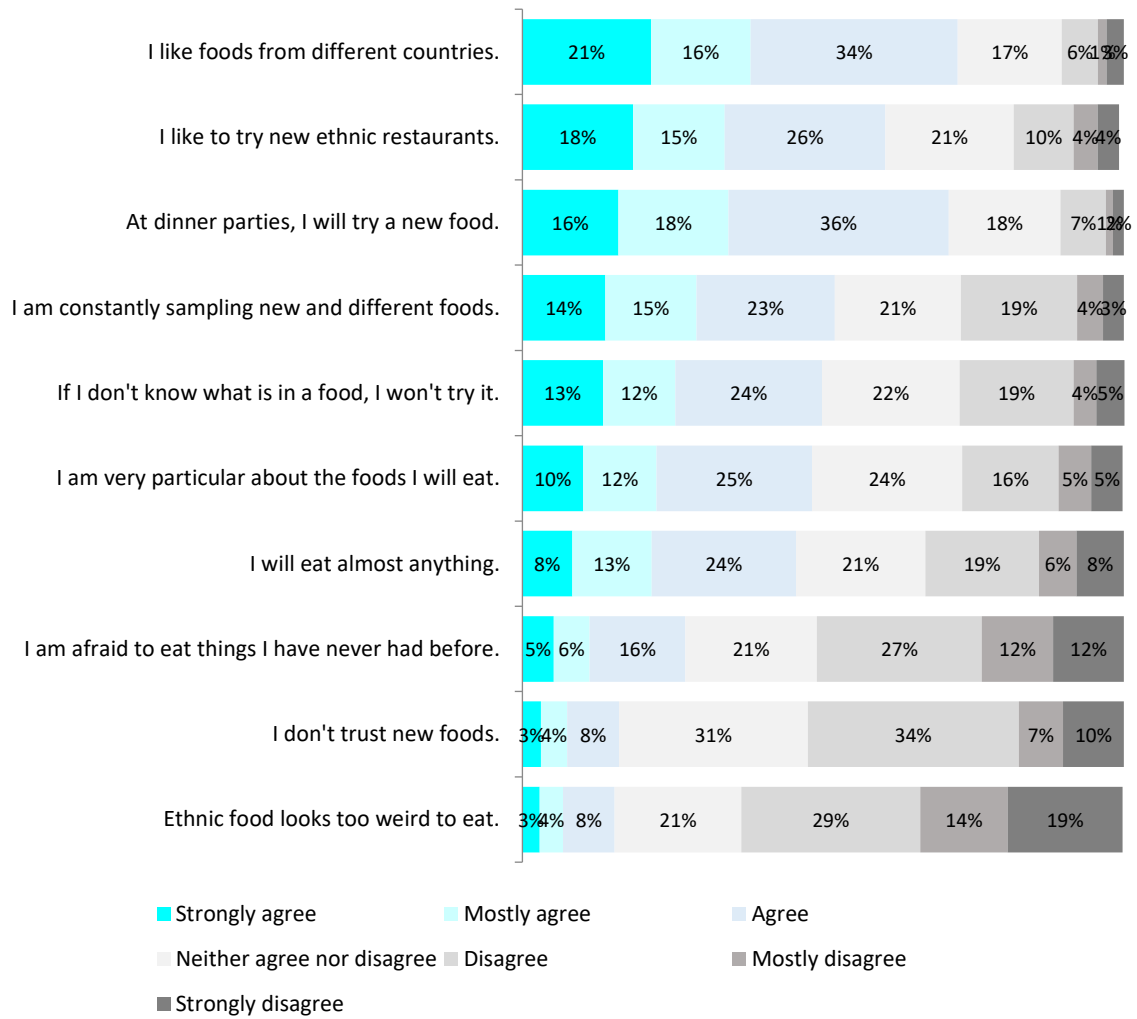


Figure 3.6: Food Neophobia Scale Items: California

- Overall, UK and Californian participants showed similar scores for food neophobia, with average scores showing participants in both samples to be moderately food neophobic (as shown in Figures 4.7 and 4.8 below). On average, UK participants scored 46 out of 70, while Californian participants scored 45 out of 70 on the food neophobia scale.

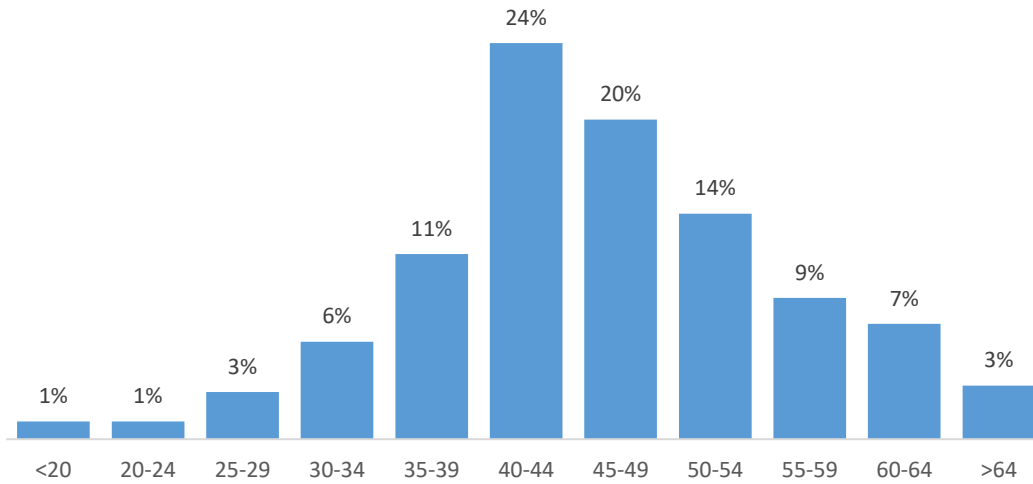


Figure 3.7: Distribution of Food Neophobia Scale: UK

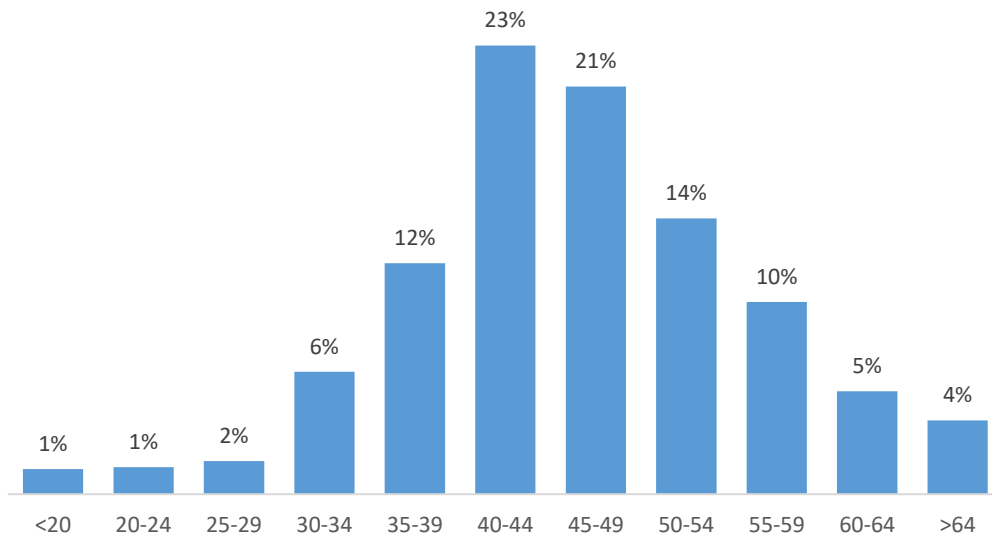


Figure 3.8: Distribution of Food Neophobia Scale: California

3.4 Changes in animal meat protein consumption

- Of the UK respondents who ate animal meat (92%), exactly half had reduced their consumption in the last year (**Figure 3.9**). While similar for the Californian sample, 46% of meat eaters had reduced consumption (**Figure 3.10**).

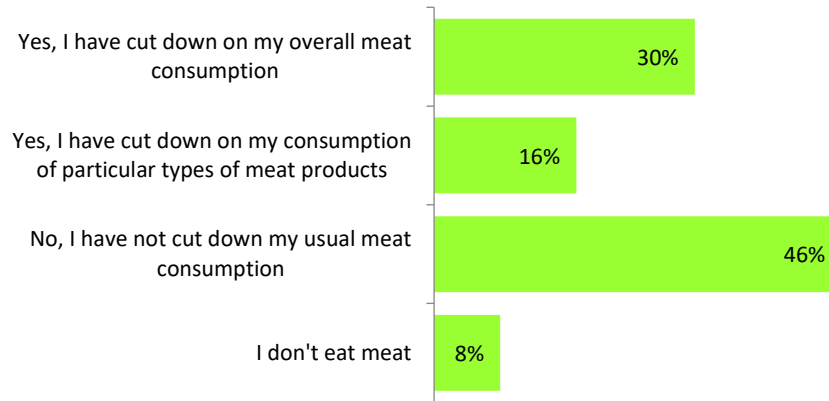


Figure 3.9: Changes in animal meat consumption over previous year: UK

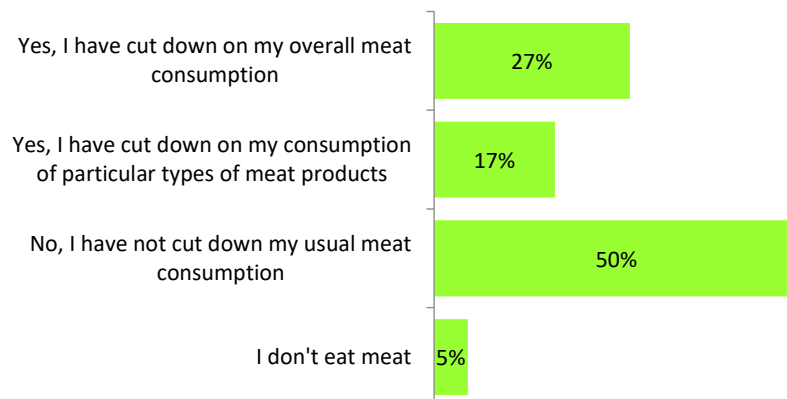


Figure 3.10: Changes in animal meat consumption over previous year: California

- Respondents who indicated that they had cut down on *particular meat products* (n=159) were then asked to indicate which types they had reduced.
- Reductions in *beef* consumption were highest for both samples (**Figure 3.11** and **Figure 3.12**).

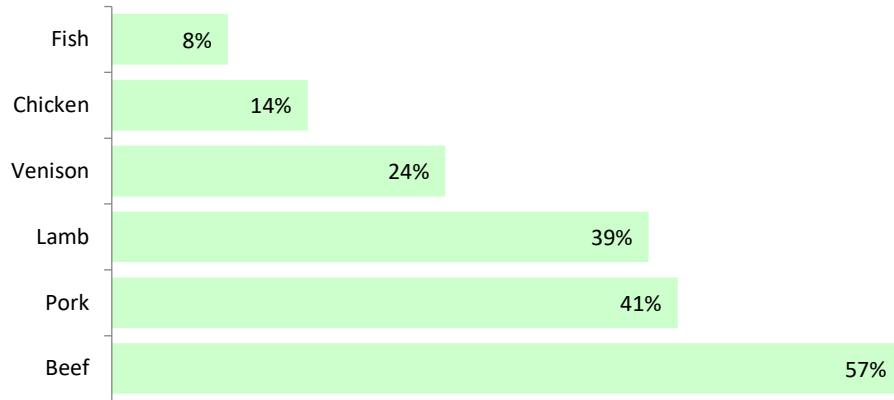


Figure 3.11: Reductions in animal meat proteins by type: UK (n=159)

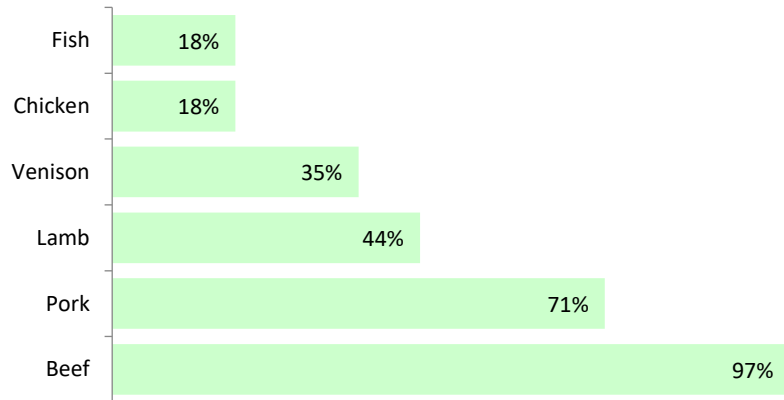


Figure 3.12: Reductions in animal meat proteins by type: California (n=113)

- Overall, 46% of the UK sample and 44% of the Californian sample, said that they had reduced their animal meat consumption over the previous year. These respondents were asked to indicate which motivations were important to them in making this change (**Figure 3.13** and **Figure 3.14**).
- Health factors are the most important motivator for both samples.

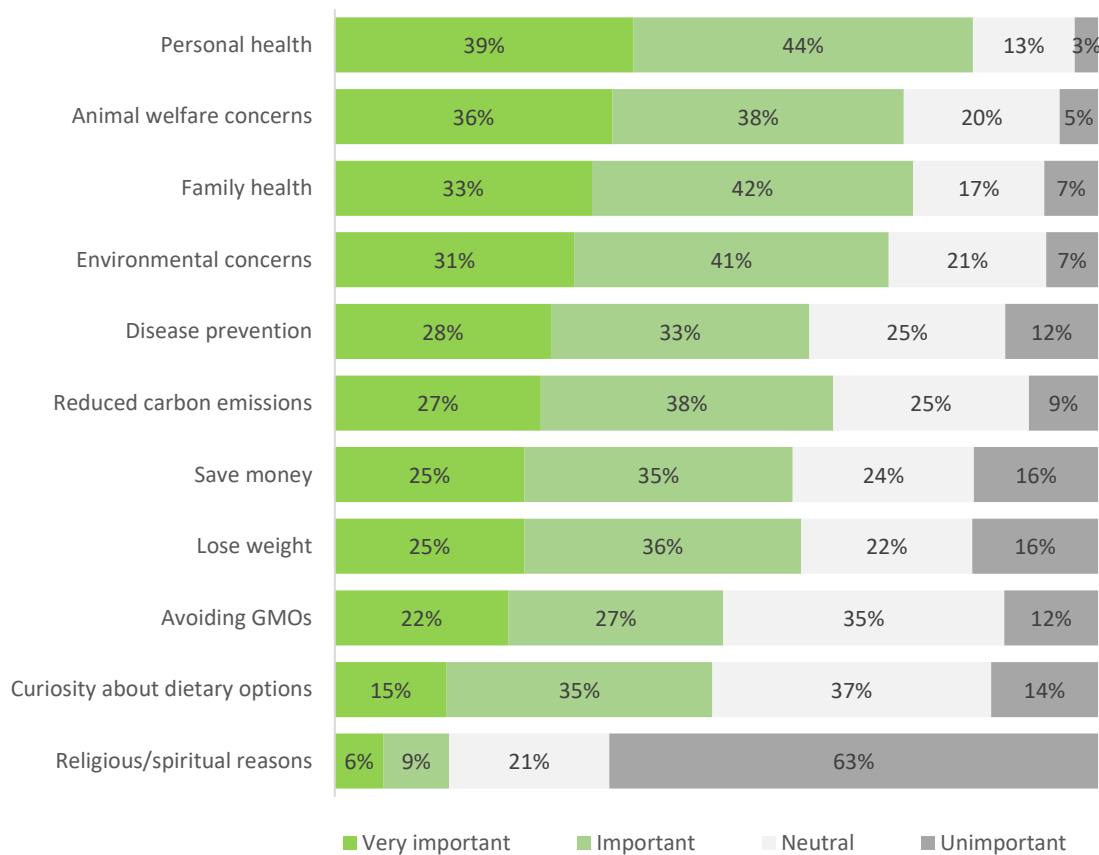


Figure 3.13: Motivations for reducing animal meat consumption: UK

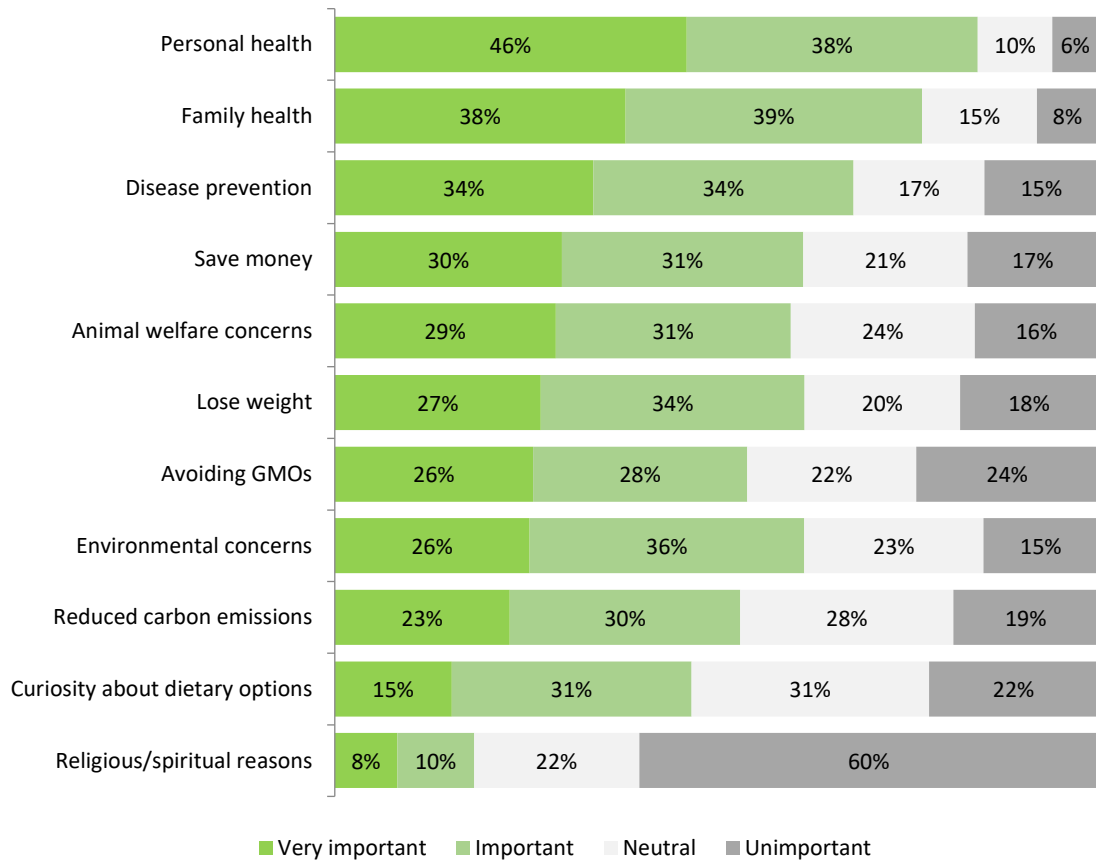


Figure 3.14: Motivations for reducing animal meat consumption: California

3.5 Alternative proteins: awareness, consumption, and product preferences

- Almost all UK respondents were aware of plant-based alternative protein products, while awareness of insect-based or lab-grown, although much lower, could be considered significant at just over half of respondents (**Figure 3.15**).
- The levels of awareness were lower in the Californian sample compared to the UK (**Figure 3.16**).

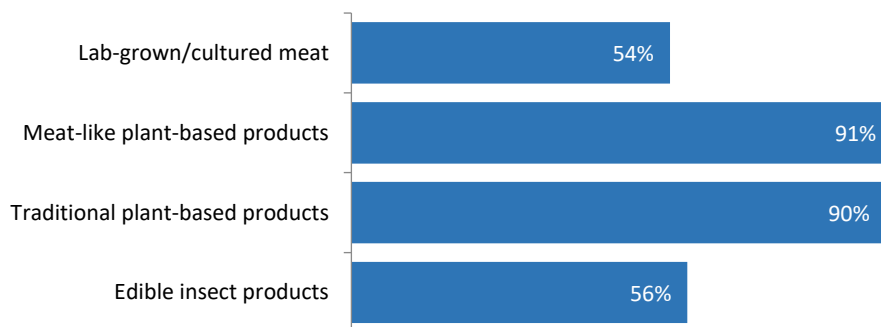


Figure 3.15: Awareness of alternative proteins: UK

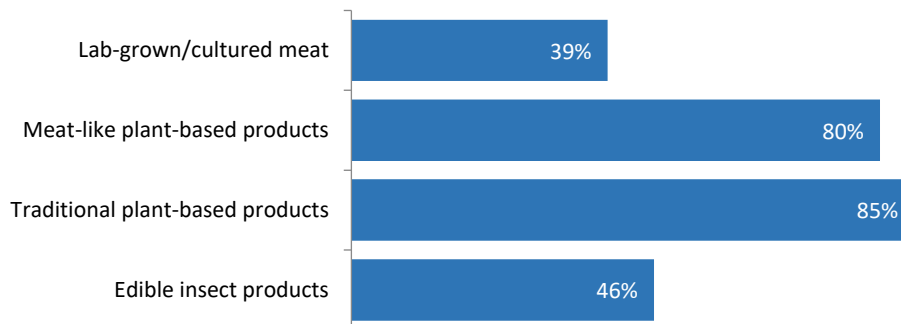


Figure 3.16: Awareness of alternative proteins: California

- For UK consumers, consumption frequency is similar between the two plant-based categories, about 40% of respondents consuming these products at least monthly (**Figure 3.17**). While ten percent of respondents consumes edible insect products.
- The rate of edible insect consumption is higher in California, at thirteen percent (**Figure 3.18**). While meat-like plant-based products consumption is lower.

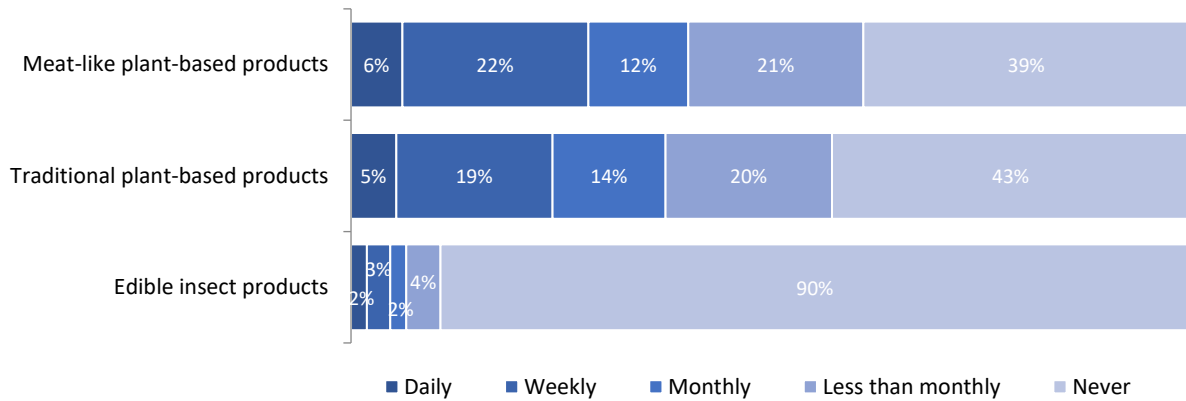


Figure 3.17: Consumption frequency of alternative proteins: UK

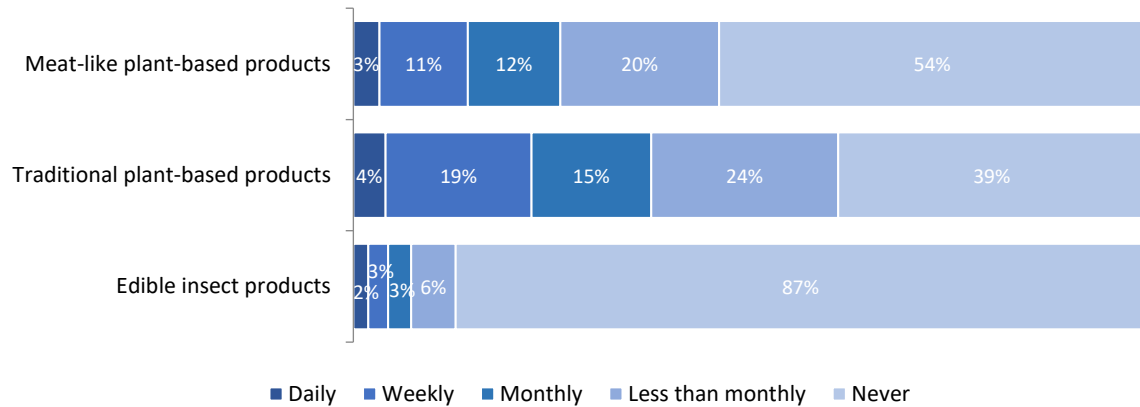


Figure 3.18: Consumption frequency of alternative proteins: California

- When shopping for alternative proteins, UK and Californian consumers have the same top four most important attributes: taste, price, animal welfare, and natural ingredients (**Figure 3.19** and **Figure 3.20**).

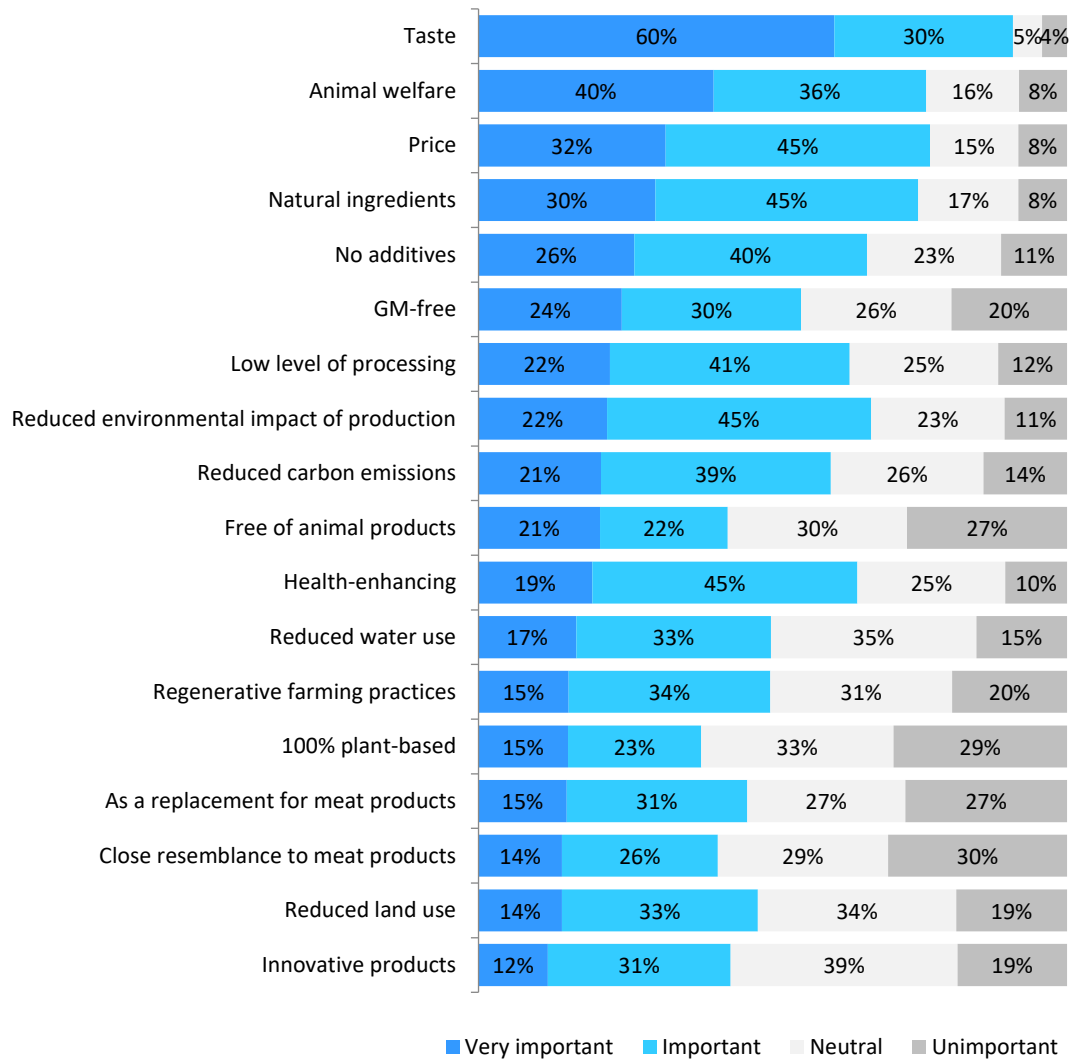


Figure 3.19: Important attributes of alternative proteins: UK

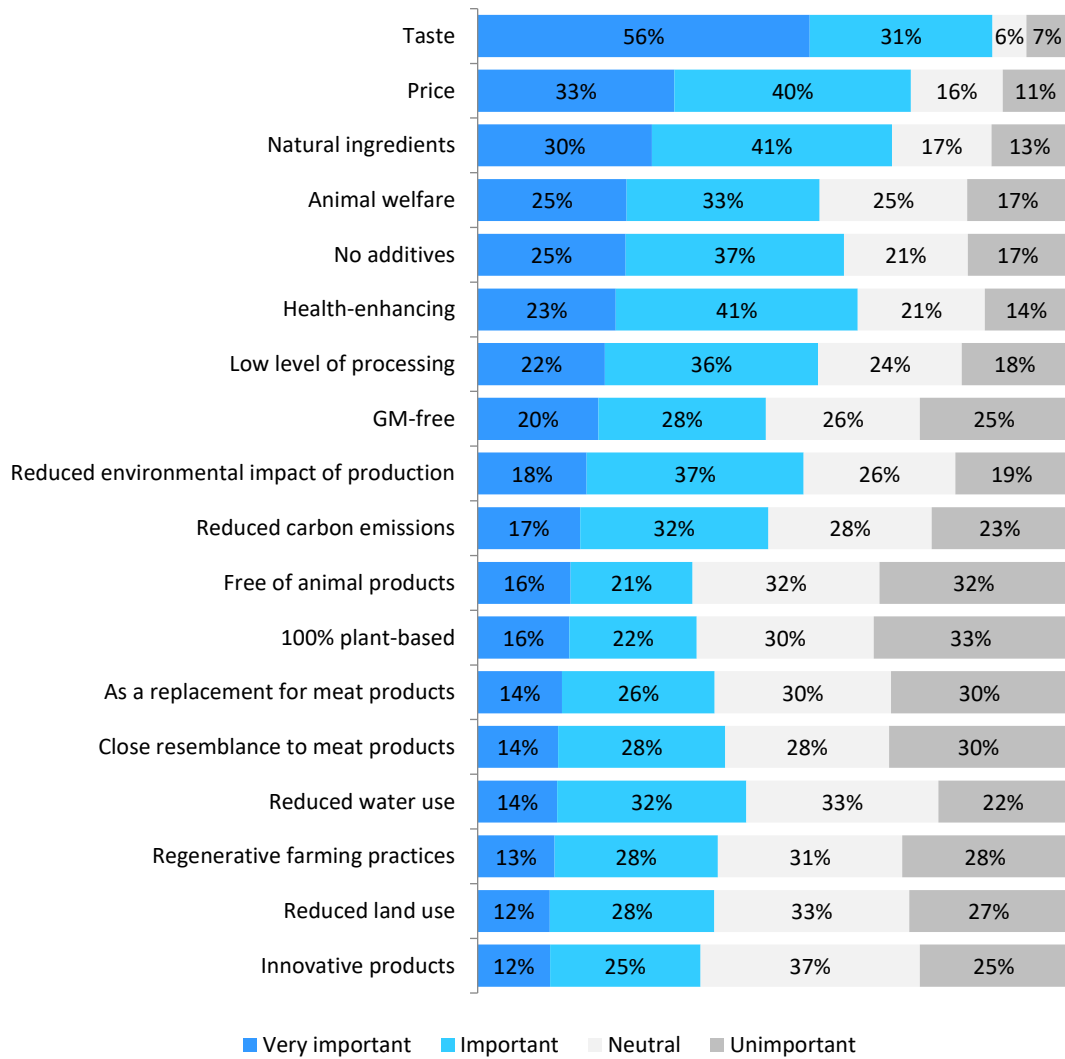


Figure 3.20: Important attributes of alternative proteins: California

- Overall, both samples show significant intent to increase consumption of alternative proteins (Figure 3.21 and Figure 3.22).

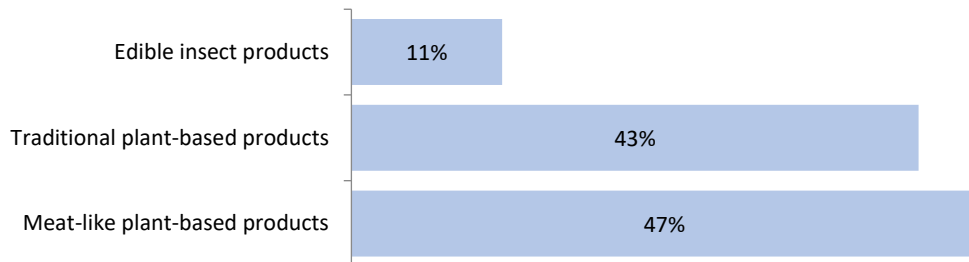


Figure 3.21: Intention to increase consumption of alternative protein types: UK

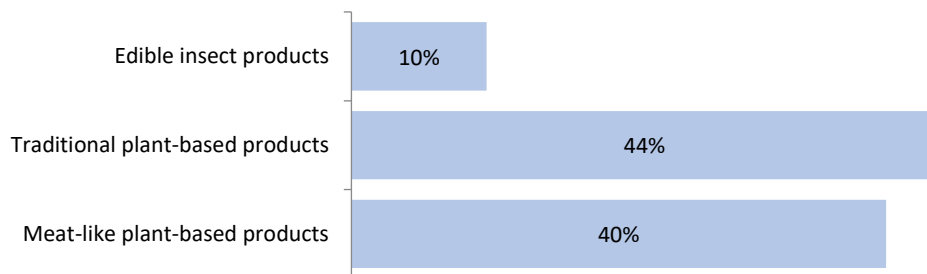


Figure 3.22: Intention to increase consumption of alternative protein types: California

- The top four factors that will motivate consumers to increase their consumption of alternative proteins are the same for both samples: taste, animal welfare concerns, to improve health, and reduction in price (**Figure 3.23** and **Figure 3.24**).

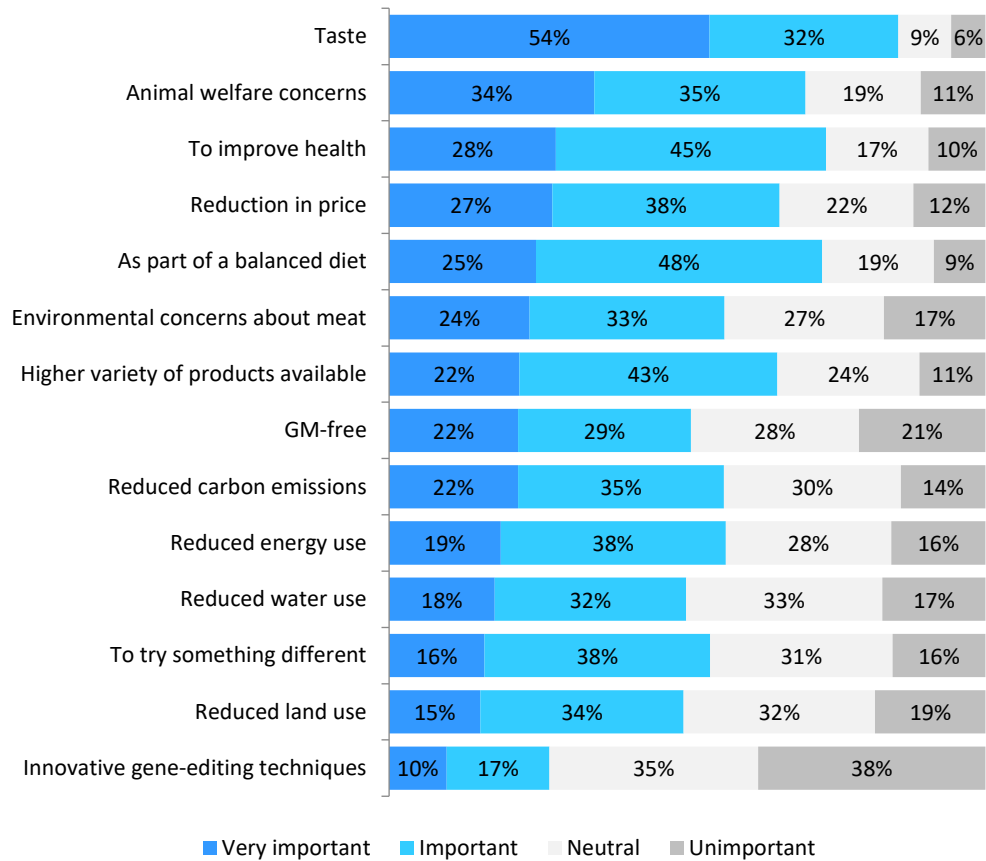


Figure 3.23: Motivations for increasing consumption of alternative protein products: UK

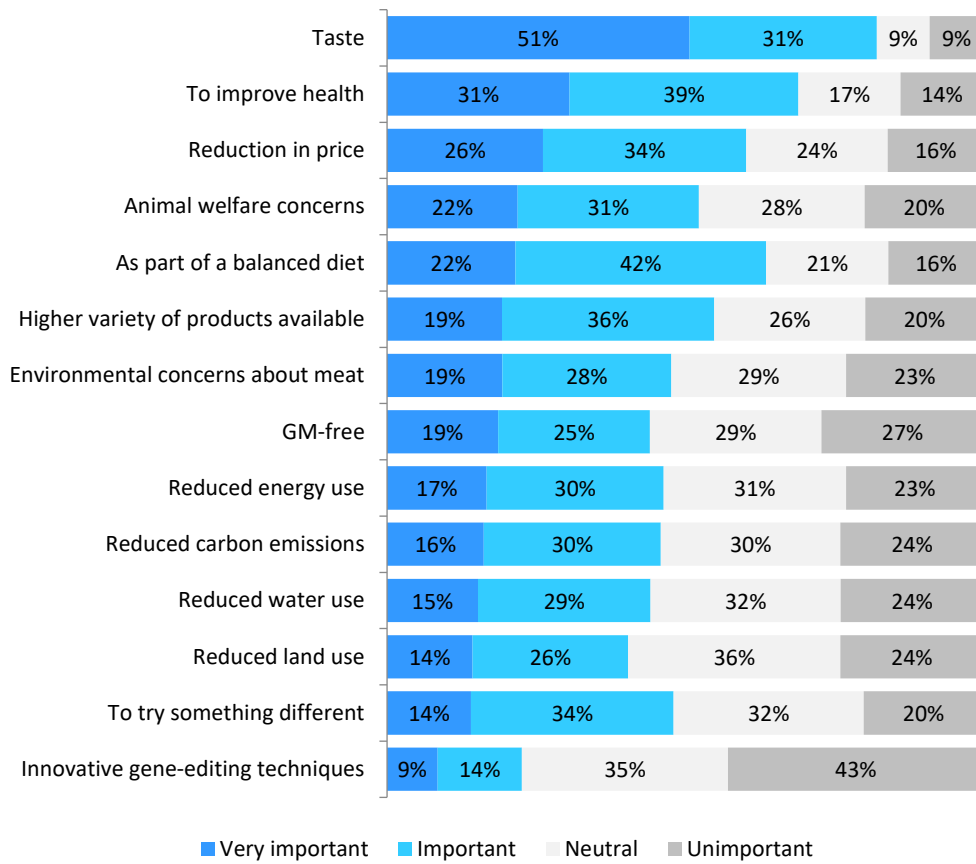


Figure 3.24: Motivations for increasing consumption of alternative protein products: California

- Consistent with the findings above indicating the importance of taste, we see here that perceived poor taste is the most likely impediment to consumption for both UK and Californian consumers (Figure 3.25 and Figure 3.26).

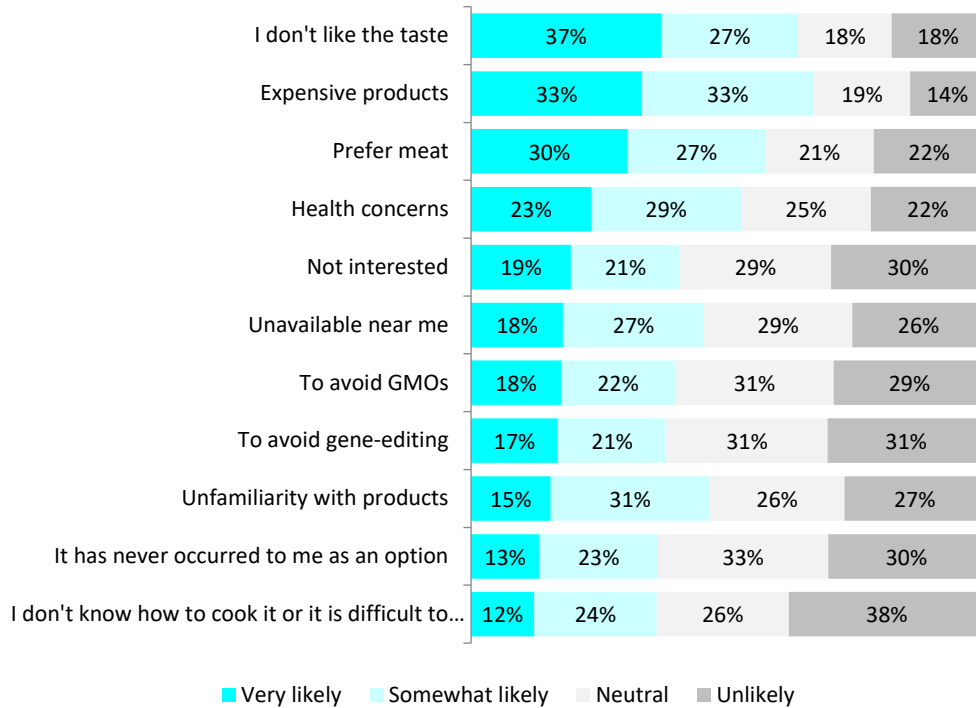


Figure 3.25: Disincentives for consuming alternative proteins: UK

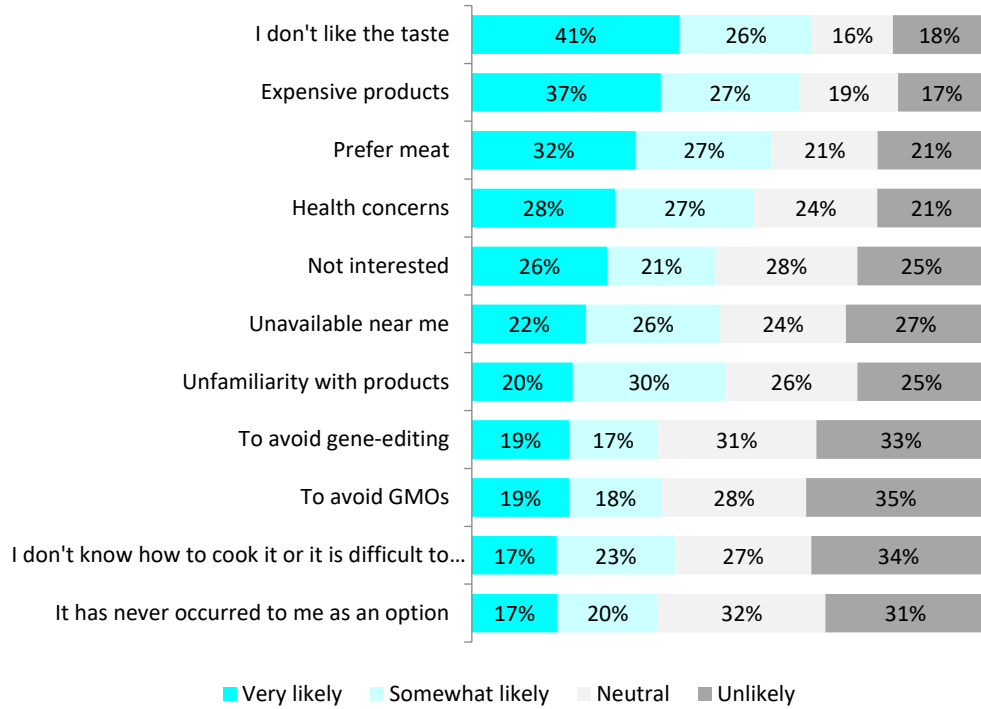


Figure 3.26: Disincentives for consuming alternative proteins: California

Chapter 4

Conclusions

This report presents the results of survey(s) of alternative protein product consumption in the UK and California (US). The survey was of just under 1,000 respondents in each market.

Behaviours and preferences in relation to food products in general, and alternative protein products in particular, were very similar between the two markets, while the UK had a higher rate of specific diets compared with the Californian sample (34% with specific diets in the UK compared with 23% with specific diets in California). UK participants also indicated a higher preference for animal welfare credentials in food products (38% *very important*) compared with their Californian counterparts (22% *very important*).

Nearly half of participants in both the UK and California showed a recent reduction in their overall meat consumption (46% and 44% respectively), with most participants reducing their consumption of beef products in both samples. Reductions in meat consumption were motivated most strongly by health concerns in both samples.

As alternative protein products are new types of protein sources, participants' aversion to new kinds of foods ("food neophobia") was assessed. This showed a similar average level of moderate food neophobia by participants in both samples, with UK participants scoring an average 46 out of a possible 70 points, and Californian consumers scoring an average 45 out of 70, on the food neophobia scale.

Awareness of all alternative protein product types was higher for UK participants than Californian, with plant-based alternative protein products being more familiar to participants in both samples compared with insect-based or lab-grown products. Around 40% of UK participants consume plant-based alternative protein products at least monthly, with approximately 11% consuming edible insect products. In the Californian sample, the rate of edible insect consumption was higher (approximately 13% had consumed these), while meat-like plant-based product consumption was lower, compared with the UK sample. Both samples showed a significant intent to increase alternative protein product consumption overall. The top four factors motivating consumers to increase alternative protein product consumption were the same for both samples: taste, animal welfare concerns, to improve health and reduction in price. Consistent with this, the perceived poor taste of alternative protein products was the most likely impediment to consumption in both the UK and Californian samples.