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GM Labelling: Exploring public responses to the labelling of GM food and the use of GM-free labelling

Qualitative and Quantitative Findings

Social Science Research Unit
Food Standards Agency
January 2013
Unit Report 17

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December 2012

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I Acknowledgements

This report was produced by Define Research and Insight on behalf of the Food Standards Agency.

We would like to thank the members of the public who gave up their valuable time to support and take part in this research.

II About this Report

This report uses the terms GM absent and GM present to refer to the two ways that labelling could occur. GM absent refers to label options which indicate an absence of GM, for example, ‘GM Free’, ‘Non-GM’, or ‘All ingredients are non-GM’. GM present refers to label options which indicate the presence or use of GM, for example, ‘Contains GM ingredients’.

III Executive Summary

Background and Approach

Previous research suggests that although UK consumers have typically heard of GM food technology, there is limited knowledge and understanding about it.[1] Previous studies also indicate that there is interest in mandatory labelling of GM food – despite findings that less than 10% of the UK public hold a strong opinion about it.[2]

[1]Clery& Bailey 2010; Gaskell et al. 2010
[2]Clery & Bailey 2010;

Research was therefore required to understand UK public views towards the labelling of GM on foods and the options for labelling food as GM-Free. The research also looked at understanding the interest in labelling information for products where animals had been fed GM feed.

For this research, both qualitative and quantitative methodologies were used. The qualitative research was conducted first to understand the variety of opinions towards GM and GM labelling as well as allowing participants to receive and understand new information about a fairly complex issue over the course of the research process.

The findings from the qualitative research are intended to demonstrate and describe the range of existent views on the topic and the linkages between these, rather than to measure their extent across the population at large. Qualitative methods neither seek nor allow the development of data regarding the numbers or proportions of people holding a particular view or having a particular set of experiences.

The qualitative research approach included both in-depth interviews and group discussions and was staged as follows:

- Desk research to assimilate findings from previous research
- Pilot research (4 in-depth interviews and 2 group discussions)
- A main stage of qualitative research (16 in-depth interviews and 8 group discussions)
- Follow-up telephone in-depth interviews with a quarter of the sample

In-depth interviews were undertaken to understand the individual response towards labelling. Group discussions were included to understand the influence of social discussions and attitudes on individual views and purchase decisions.

Half of the research sample (including half of the in depth in interviews and all participants in half of the group sessions) were given some information about

GM foods prior to attending the sessions. For the remainder of the participants, information on GM was provided only towards the end of the research sessions.

The findings indicate that the provision of information can affect response to labelling. For those with less established opinions, or those lacking understanding, providing information about potential benefits and drawbacks of GM often lessened initial negativity and assumptions regarding GM foods.

The qualitative research sought to understand current understanding and knowledge of GM foods and also to explore response to mocked up labels that could be used on foods.[3] These included:

- GM present options
  - Contains GM ingredients – for example, a label stating *'contains genetically modified soya'*
  - From animals fed GM feed – for example, a label stating *'from chickens fed GM feed'*
  - GM Production – for example, a label stating *'Produced using rennet from genetically modified organisms'*
- GM absent options:
  - 'GM Free'
  - 'All ingredients are non-GM'
  - 'Non-GM'
  - 'Produced using non-GM ingredients'
  - From animals fed non-GM feed – for example, a label stating *'from cows fed non-GM feed'*

The qualitative phase was then followed by a quantitative face to face omnibus. A series of questions were developed based on the qualitative phase and these were developed into a draft questionnaire. This was then

[3]Example of a discussion guide can be found in the supplementary appendix.

piloted by Define and a refined questionnaire used for the main omnibus fieldwork.

Overall 1467 interviews were completed. An omnibus was used with a sample size of 1000 interviews with added boost samples for Scotland (200 interviews), Wales (221 interviews) and Northern Ireland (176 interviews). 870 interviews were conducted in England.[4]

The purpose of the quantitative research was to enable measurement of the usage of current GM food labelling alongside other types of food labels, to understand the perception of what 'GM free' should mean and the importance, and the claimed impact, of GM food labelling.

A summary of the qualitative and quantitative findings are detailed below.

Key Qualitative Findings

Current Awareness and Knowledge of GM

Across the qualitative sample, although a range of knowledge existed, GM technology still tended to feel new and unknown, with attitudes towards it being fairly undeveloped and knowledge levels quite low overall. Opinions towards GM tended to be based on more general attitudes towards 'food technology' rather than based on specific knowledge of GM foods. This raised negative assumptions or concerns about the use of GM food – for example, that it is of lower quality or could impact on health.

[4] Please see Method and Sample section 5 and 6 for details on the quantitative sample and method.

Attitude towards Food Labelling

Participants were using a range of food labels, with more regular use of food labels appearing to be linked to a higher interest in food quality and/or healthy eating. The use of labels, however, was also reported to be dependent on the type of food, purchase occasion and situation.

Food labels were thought to be helpful in choosing foods, however, there were also indications that they could be complex or difficult to read and as such participants welcomed short-cut solutions – for example, a traffic light system or 'easy to read' logos.

Participants in this research were typically not seeking information or labelling with regard to GM, and it appears that without prompting GM information is not a strong need. However, when the topic of GM is raised, for example when discussed in the research sessions, GM information is seen as important in order to give consumers the right to choose.

Response to Current GM Labelling Requirements

Although there was low or no awareness of current GM labelling requirements, there was a strong assumption that products containing GM would be regulated and labelled. This assumption tended to extend to only GM ingredients, as there was typically no awareness of the use of GM animal feed or GMOs used in food production.

Once made aware of its use in UK food products, participants typically considered that foods containing animal products derived from GM feed should be labelled, consistent with earlier research. Labelling the use of GMOs in production was considered of lower importance overall.

The current tolerance level for GM labelling[5] was generally accepted, although the *most concerned* participants – frequent label readers who strongly prioritised food quality and/or health, or individuals with strong negative opinions about GM – at times felt that the tolerance level was too high. The voluntary status of GM absent schemes was also typically accepted, although concerns were raised about potential inconsistencies across brands or products.

Response to GM present and GM absent Labelling

Participants were divided between those that felt the ideal labelling solution should be to highlight GM presence or GM absence. However, GM presence tended to be considered more important meeting participants 'right to know'. It was raised by others, however, that signalling GM absence may make it easier to determine GM content.

For those participants interested in GM presence, the labelling of GM ingredients as well as the use of GM feed were generally considered most important. The labelling of GM used in production tended to be a lower priority need overall.

Among the GM absent label options tested, 'GM Free' or 'All ingredients are non-GM' were considered the most useful and straightforward to signal an absence of GM. Of these two, 'GM Free' raised more expectation of positive benefits and higher than standard quality. Additional expectations were also raised with the use of these types of labels, including no use of GM animal feed at any stage in the animal lifecycle.

[5] The Food and Feed Regulation provides for a threshold for the accidental presence of GM material in non-GM food or feed sources. This is allowed up to 0.9% and only applies to GMOs that have an EU authorisation. Any unauthorised GM material cannot be present at any level.

A ‘combined’ label which signified both *presence and absence* of GM – *across GM content areas* (including GM ingredients, GM feed and production) – was also suggested by research participants as it was perceived that it would potentially be easier to use and satisfy consumer ‘right to know’.

Claimed Impact of Costs on Consumer Requirements

When provided with information outlining likely regulatory cost implications of GM labelling, the sample tended not to alter opinions regarding what was important to label, with the suggestion that GM should be labelled and that consumers should not have to bear any cost involved. The possibility of increased food costs could lessen labelling requirements for those less interested participants, but not for those who prioritised food quality issues or held strongly negative opinions regarding GM. Raising the potential of increased costs also resulted in some negativity and frustration.

Claimed Impact[6] of Labelling

It can be understood that labelling per se is required or used with regard to potential health, safety or quality implications. Discussion, therefore, about labelling GM can place GM in a negative light.

Participants claimed that GM labelling could impact on their propensity to buy foods. Responses across participants varied, according to 1) current interest in food quality (and thus current label usage) and 2) strongly held GM opinions. These two factors were strongly linked to views on GM labelling and claimed impact in terms of purchasing products labelled with GM, with claims that these types of participants might avoid products claiming to contain GM or more likely purchase products claiming to be GM free.

[6] Research can only provide indications of *claimed* impact rather than measure *actual* impact.

However, claimed impact was also reported to depend on other decision factors, for example food type, with claims that GM labelling may have greatest impact when buying animal or staple foods. In addition, respondents noted that other shopping factors such as price, brand, taste and time available for purchase decisions would also be a consideration alongside GM labelling.

Key Quantitative Findings[7]

Awareness and Knowledge of GM

The majority of respondents in the quantitative sample (74%) claimed they had heard of the use of genetic modification in food or food production.

However, as in the qualitative research, claimed knowledge was low. When asked about their knowledge of genetic modification in food or food production, a majority of 60% of respondents (those who had heard of the use of GM or don't know) claimed they knew little or nothing about it.

There were also indications that this sample are generally not seeking further information about the subject. Only 35% of those that had heard of the use of GM or don't know stated they had talked about it with anyone while a lower proportion had searched for information about GM (23%).

Between 28-40% of respondents stated they were unsure if a number of statements on the availability of GM foods were true[8], supporting the findings

[7] Detailed findings can be found in Section 4, starting at page 90.

[8] Respondents were asked the extent to which they thought the following statements were true or false: 'GM foods being widely on sale in the UK', 'GM crops currently being grown by farmers in the UK' and 'farmers using animal feed containing GM ingredients'. These responses are only from those in the quantitative sample that had heard of the use of GM in food or food production or did not know.

from the qualitative phase which suggested that levels of understanding were fairly restricted.

Current Label Usage

The main information respondents spontaneously reported to look for when buying food for the first time were price (37%) and nutritional information (37%) such as the amount of fat (25%) and sugar (19%).

In contrast, only 2% of respondents spontaneously mentioned they looked for GM information on labels. When prompted, 4% of respondents said that GM information was important on a food label[9] while 60% mentioned price, 51% mentioned best before/ use by dates and 30% mentioned nutritional information[7].

Importance of indicating GM on food labels

Two-thirds of respondents[10] considered it very or quite important that it is written on a label if the food itself or ingredients in the food are from a genetically modified plant or the food product is from animals that have been fed genetically modified plants. (Figures are in the bullet points below).

- 68% thought it important (very or quite) to write on the label if 'The food itself is from a genetically modified plant'
- 67% thought it important (very or quite) to write on the label if 'One or more ingredients in the food are from a genetically modified plant'

[9] Respondents were shown a list of examples of information found on food labels and asked which was most important to them – respondents could choose up to 3 pieces of information. The result here shows the first, second and third selection combined.

[10] The responses in this sub section are only from those in the quantitative sample that had heard of the use of GM in food or food production or did not know.

- 67% thought it important (very or quite) to write on the label if 'The food product, e.g. meat, milk, eggs, is from animals that have been fed genetically modified plants'.

For all statements above, 12% thought it was not important.

A good proportion of the respondents reported the following to be very or quite important criteria if a product was labelled as 'GM Free' or 'Free from GM' (Figures are shown in the bullet points below).

- 68% thought it important that 'The food contains no traces of GM ingredients, even at very low levels'
- 69% thought it important 'That it contains no ingredients from GM plants'
- 69% thought it important 'For items like meat, milk, or eggs, the food is from animals that have not been fed GM plants'.

Again, for all statements above, 12% thought it was not important.

Between 53% and 60% thought that a 'GM Free' label on food (e.g. milk or eggs) was not appropriate in the following three different scenarios;

- 60% thought that the food should not be labelled GM Free if 'The farmer gave GM feed to his animals when they were younger, but not in the last few months before the milk or eggs were collected'
- 55% thought that the food should not be labelled as GM free if 'A farmer has not fed his animals GM feed, but does not know whether they were fed GM by a previous owner'
- 53% thought that the food should not be labelled as GM free if 'The animals have not eaten GM feed, but they have been treated with a vaccine or medicine that was produced using genetic modification'.

Claimed Impact of Labelling on Purchase

As found with the qualitative research, there are indications that labelling a product with 'GM free' may make some people more likely to buy the product. 41% of respondents[11] claimed it would make them more likely to buy the product. However 45% of respondents also claimed they would be just as likely to buy it.

There were also indications, as in the qualitative research, that a 'contained GM' label might put some people off from buying a product. 49% claimed that they would be less likely to buy a product for the first time if they saw this label.

Conclusions

The following are drawn from the qualitative and quantitative findings.

At present, many consumers have low spontaneous needs with regard to GM labelling and do not appear to be actively seeking to avoid GM in foods by looking at labelling or other means. However, the research indicates that, when presented with labelling as an option, there is a demand for this to be in place, with the qualitative research indicating interest focused on the labelling of GM presence (particularly via the inclusion of GM ingredients or the use of animal feed).

There are indications from the qualitative findings that the claimed impact of GM labelling is likely to be limited to a section of those consumers who are more concerned about food quality or those with negative opinions about GM, although this may additionally depend on food type and other shopping decision making factors, such as price or brand preference. This appears to

[11] The responses in this sub section are only from those in the quantitative sample that had heard of the use of GM in food or food production or were unsure.

be supported by findings from the quantitative research which show that some respondents claim that GM labelling, either ‘GM Free’ or ‘Contained GM’, may affect shopping decisions.

Qualitative findings suggest that GM absent labelling is typically lower priority overall, albeit it is considered useful for those participants most concerned about GM. The use of this type of label, for example ‘GM Free’ raises assumptions about content, with respondents in both the qualitative and quantitative research perceiving that GM absent labelling, for example ‘GM Free’, indicates no use of GM at any level (including the use of GM animal feed).

Qualitative research also suggests that additional information may be required to help reduce any misunderstandings and therefore concern amongst participants – particularly regarding GM animal feed. This might be especially so if GM labelling became more widespread, for example if foods were to be labelled to show the use of GM animal feed.

IV Introduction

A. Background to the Research

Some EU countries have introduced schemes to allow producers to label products as ‘GM-free’ or ‘without GM’, although the rules of these schemes tolerate some GM materials (low level adventitious presence, use of certain GM additives etc.) and the products that carry these labels do not need to be completely free from the use of biotechnology. The European Commission is currently considering whether to harmonise these national schemes across Europe. This topic is likely to be discussed at EU level at the end of 2012 when the results of a Europe-wide review will be available.

The FSA would like to ensure that UK public’s needs: 1) are reflected in its future discussions at EU level on labelling issues, 2) inform the UK policy on (a) the use of GM free labelling and (b) the labelling of products from animals fed GM feed.

After more than a decade of media reporting related to GM food, public awareness of the issue of GM is generally high. The 2010 Eurobarometer (Gaskell et al. 2011) reports that 89% of sampled UK residents have heard of GM food technology, although detailed knowledge and understanding is often limited. The majority of the British public are broadly aware that GM foods are sold in Britain, but most are relatively unaware of the specific details – for example, that availability of ‘directly’ genetically modified foods is somewhat limited, but a wider range of goods contain products from animals that have been fed with GM feed.

Despite this relative lack of knowledge, research consistently suggests that public support of GM foods is quite low – in part due to media portrayal of GM technology as controversial and potentially dangerous. The majority of

Europeans tend to think of GM food as not offering benefits and as unsafe, worrying and potentially inequitable,[12] although recent surveys suggest that the UK has relatively higher support for GM foods than many of its European peers.[13]

Research also indicates consumer consensus regarding mandatory labelling of GM food – including those produced by GM technology or products from animals fed on GM animal feed.[14] The interest for this appears to be higher in the UK than in peer countries such as the United States.[15] UK consumers are also generally willing to pay a price premium for non-GM food if this is labelled.[16]

However, UK-specific research on GM also indicates a relatively low level of current public engagement with the issue. Some studies suggest that less than 10% of the UK public actually hold any strong view about GM food;[17]most consider themselves lacking enough information to hold a strong opinion, have mixed views, or view the issue with relative indifference. Given low specific information about GM technology, consumers tend to make 'top down' heuristic assessments of GM based on their general attitudes and views – rather than 'bottom up' opinion formation based on specific details and knowledge about GM itself.[18]

B. Overview of Research Requirement

In order to inform EU discussions on GM foods, research was needed to explore consumer needs regarding GM labelling on food products.

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[12]Costa-Font et al. 2008
[13] Gaskell et al. 2010
[14] Sheldon et al. 2009
[15] Moon & Balasubramanian 2004
[16] Lusk et al. 2005; GfK NOP 2010
[17]Clery & Bailey, 2010
[18]Brook Lyndhurst 2009

In 2009/2010 the FSA published a package of work on public attitudes to GM and other food technologies. This included an evidence review of what was already known about public attitudes to new food technologies,[19] results from the 2008 British Social Attitudes Survey that included a module of questions on new food technologies,[20]and follow up qualitative research focusing specifically on GM food.[21]

This literature is complemented by research on general UK consumer views and needs in terms of food labelling – and by research on more general attitudes towards GM. However, little data exists to help link these general views to specific attitudes of UK consumers to GM labelling.

Research was primarily needed to explore UK public views to the labelling of GM on food and options for labelling food as GM-free. As context for this primary objective, research also needed to understand the range of consumer attitudes and values regarding GM food, and how these may inform likely response to labelling. Qualitative and quantitative research was commissioned to meet these aims.

C. Research Aims

The primary aim of the research was defined as:

To explore UK public views on the labelling of GM (genetic modification) on foods, and the options for labelling food as GM-Free in the UK.

[19] Brook Lyndhurst 2009
[20]Clery & Bailey 2010
[21] Sheldon et al. 2009

Qualitative Research Aims

To achieve this, the qualitative research explored the following specific areas with UK consumers:

Public experience of current GM labelling practices

- Are the public generally aware of GM labelling practices?
- Are GM labels being used currently?
    - Are they intentionally sought out and do they affect purchasing behaviour?
    - Do GM labels affect views of foods?
- Where used, how do consumers respond to current GM labelling approaches?
    - Do current practices result in any confusion or misunderstanding?
    - Do consumers find the present labelling systems helpful? Why or why not?
    - Have consumers spontaneously experienced any need for additional/adjusted labelling or additional information?

Consumers' response to GM labelling options

- What types of GM do consumers feel should be labelled and which should not? For example:
    - Presence of GM ingredients?
    - Inclusion of products from animals fed GM-feed?
    - GM used in processing?
- Do consumers think it is important to label foods which are 'free from' GM or those which contain it, or another approach? Of the label options tested, how are these understood and what do they think is implied by these?
    - Which options are judged to be most clear?
    - What are the benefits and drawbacks of each?
- Are consumer views influenced by the cost of providing accurate labelling and enforcement?
    - If so, how? Does this affect their preferred labelling solution?

The potential impact of labelling GM characteristics of products, including:

- To what extent is each labelling option expected to affect decision making about food products?
    - How are labels likely to affect food purchasing decisions?
    - What are the 'benefits' and 'drawbacks' of each option?
- Does GM information override general purchasing habits?
- What factors compete with GM labelling for consumer attention and with what impact?
- What are the expected benefits of additional labelling options?

Consumers' needs for additional information regarding GM labelling?

- Do consumers want additional information?
- What should this additional information include?
- What are the preferred channels and sources to provide this?
- How would additional information affect the impact of labelling?

How do views and needs differ across different consumer segments or situations?

- Are there different views and needs for different consumer segments? For example, across different socio-demographic groups, attitudes towards GM technology, and so on
- Do views differ according to type of food?

Quantitative Research Aims

Quantitative research was conducted to supplement the qualitative findings. In particular:

Public awareness and knowledge of GM

- How familiar are the general public with genetic modification?

- How knowledgeable do the general public claim to be in terms of the use of GM in food or food production?
- How involved are the general public with GM issues, i.e. do they talk to others about it? Have they looked up information about it?

Labelling and GM labelling

- What information is the general public seeking when purchasing food and is GM information spontaneously suggested?
- What information do they consider important to be on food labels and where does GM information fit with this?

Consumers' response to GM labelling systems

- What types of GM do consumers feel should be labelled and which should not? For example:
    - Food itself is genetically modified, e.g. a plant
    - Presence of GM ingredients
    - Inclusion of products from animals fed GM-feed
- What do consumers understand and expect from a product labelled 'GM free'? For example, how important is it that:
    - The food contains no traces of GM ingredients, even at very low levels
    - That it contains no ingredients from GM plants
    - For items like meat, milk or eggs the food is from animals that have been fed GM plants
- What products could be labelled as GM free? For example,
    - Products where the animal had GM feed when they were younger
    - A farmer does not know whether they were fed GM feed by a previous owner
    - The animals have been treated with a medicine or vaccine that was produced using genetic modification

Understand the claimed <u>impact</u> on the decision to purchase a product if labelled as either as 'GM free' or 'contained GM'.

Understand any differences across different segments of the general public.

D. Method and Sample

Overall Approach

This research used both qualitative and quantitative methodologies. The qualitative research used a mixed methodological approach to ensure the subject areas were explored in the context of individual consideration as well as the dynamics that can arise within the wider social context. The quantitative research was used to quantify and explore further some of the responses in the qualitative phase as well as understand if there are any significant differences across the UK population as a whole.

1. Qualitative method

The methodological approach consisted of:

a) Desk research
b) Qualitative Research
    i. Pilot stage of research (four in-depth interviews and two group discussions)
    ii. Main stage of research (sixteen in-depth interviews and eight group discussions)
    iii. Brief follow up telephone interviews with a quarter of the total sample.

Each stage of research is discussed in more detail below.

a) Desk Research

Desk research was conducted using reports from existing research regarding attitudes towards GM foods and consumer food labelling needs. Full details of

the reports reviewed can be found in the bibliography; these included the FSA's own research regarding public attitudes to new food technologies and food labelling more generally, as well as recent data on consumer attitudes towards GM and labelling needs.

The desk research was conducted to ensure that this piece of research built on previous findings and existing knowledge, and also to inform the development of the sample, discussion guides and stimulus. Where findings in this research align with findings from previous studies, these are referenced throughout the report.

b) Qualitative Research Sessions

Pilot stage

A stage of pilot testing was completed prior to the main stage of research. This consisted of four in-depth interviews (lasting for one and a half hours) and two mini-group sessions (each lasting two and a half hours, with five participants in each).

The pilot stage was used to assess the stimulus materials (including the label options) and discussion guide and provided opportunities to adjust the materials as required. Following from the pilot, a number of revisions and additions were made to the discussion guide and stimulus.

Main stage

The main stage of the qualitative research consisted of sixteen in-depth interviews (each lasting one and a half hours) and eight mini-group sessions (each lasting two and a half hours, with five participants in each).

In-depth interviews were undertaken to understand the individual response towards labelling and the likely impact of GM labels, free from the influence of social dynamics and social norming. In a group context, individuals can feel

under pressure to “think like the others” and conform to opinions expressed by other group members.[22]Group discussions were included to understand the influence of social discussions and attitudes on individual views and purchase decisions. Using both these methodologies was important as it was noted in the group discussions that strength of opinions could be increased, for example by those who were more undecided. Fuller rationale to the approach can be found in the supplementary appendix.

Discussion guides for both in-depth interviews and group discussions were developed and an example of these can be found in the supplementary appendix.

Prior to attending the sessions, half of the research sample (including half the in-depth interviews, and all participants in half of the group sessions) were given some information about GM foods. This summarised what GM foods are, where they are used and some possible benefits and drawbacks of GM (see supplementary appendix). Given that detailed knowledge about GM has previously been reported as low, it was considered that providing some of the participants with information about GM prior to seeing the label options would allow them to make more of a considered response towards them. Previous findings also suggest that providing information during the research process can be important to avoid participant frustration arising from requests to discuss a topic that they know little about, or a feeling that any concerns and issues raised have not been responded to during the research process.[23]

In contrast, it was also considered important to understand the responses of those that had no prior information bar any pre-existing knowledge. For these individuals, labelling options were examined without being given additional

[22] The tendency of groups to drive towards consensus is a well established effect in the social psychology literature – e.g. Sherif 1936 & Asch 1956.
[23] Sheldon et al. 2009

information, with this provided to them only towards the end of research sessions.[24]

At the end of the sessions participants were offered the opportunity to take away FSA 'Bite' magazine (Issue 6 – GM: novel cuisine or unpalatable prospect?) and also provided with additional links.[25] These were offered as previous research has found that participants in research about GM can request to have further information once they have discussed it in a research context.[26] These pieces of information were chosen as they presented a mix of perspectives to GM food.

Stimulus

To explore consumer response to a variety of GM present and GM absent labelling options, a set of mocked up food labels were created – using a wide range of example food types across each label. A spread of food types were chosen to capture different factors that might impact on consumer labelling needs – for example, both animal and non-animal products, more and less processed foods, and foods likely to be perceived as more or less healthy.

Food types included for testing included:

- Ready Meals
- Chicken Breast
- Vegetable Oil
- Sausages
- Biscuits
- Milk
- Yogurt
- Bread

[24] See supplementary appendix for further details
[25] http://collections.europarchive.org/tna/20050822195541/ http://www.eatwell.gov.uk/healthissues/factsbehindissues/gmfood/
[26] Sheldon et al. 2009

- Cheese

Mocked up labels were created for each of the following labelling options, as appropriate:

GM present labelling options

- Contains GM Ingredients: for example, one label read 'contains genetically modified soya'. 2 versions of this labelling option were explored:
    - Within the ingredients list – GM content listed in parentheses following the relevant ingredient(s)
    - Footnoted at the bottom of the ingredients – GM content asterisked following the relevant ingredient, and GM content listed at the end of the ingredients list
- From animals fed GM feed: for example, 'from chickens fed GM feed'
- GMO used in production: in this research, 'produced using rennet from genetically modified organisms'

GM absent labelling options

- 'GM Free'
- 'Non-GM'
- 'All ingredients are non-GM'
- 'Produced with non-GM ingredients'
- From animals fed non-GM feed: for example, 'from chickens fed non-GM feed'

Telephone follow-up interviews

Short (ten to fifteen minute) telephone interviews were undertaken with a quarter of the sample (of both in-depth interviews and groups). These were conducted one to two weeks after the research session to understand if once away from the research session and after a period of reflection, the views that participants' had expressed were maintained. The *impact* of discussion about GM labelling was also explored – for example, to see whether this led any

participants to seek out further information after participating in the research. This proved a useful addition to the methodology, as it was noted that when spoken to after the discussion, the degree of concern could be somewhat reduced in certain individuals in contrast to what was discussed in the session[27]

2. Qualitative sample

The sample included 70 participants in total, with 20 participants in one to one sessions and 50 participants in group discussions.

Purposive sampling[28] was used to capture as wide a range of views and experiences as possible.

Participants were drawn from across the United Kingdom, with both in-depth interviews and group discussions conducted in each of Northern Ireland, (Londonderry and surrounds), Scotland (Edinburgh), England (London, Liverpool, Redditch and surrounds, Solihull and Yate) and Wales (Cardiff and surrounds). This included representation of those living in more rural locations.

The participants were drawn from across the range of socio-economic groups (SEG),[29] included a range of education levels and also included a range of ages from 18 – 65 yrs. Both genders were represented, with slightly higher sample representation of female participants to reflect females' typically higher level of responsibility for household shopping. In addition, participants held a spread of attitudes towards GM technology, as gauged via a simple

[27] See supplementary appendix, for further details regarding follow-up interviews.
[28] See http://srmo.sagepub.com/view/the-sage-dictionary-of-social-research-methods/n162.xml for explanation.
[29] SEG is a way of classifying the general population in terms of occupational status. See supplementary appendix for further details of how SEG was worked out for this project as well as reasons for use.

question posed by recruiters.[30] (Further sample details can be found in the supplementary appendix).

Outlined below is a breakdown of the sample of participants.

20 In-depth Interviews

Category	Status	In-depth Interviews: 20 total
Attitudes towards GM food	*Positive/Optimistic* *Undecided* *No Opinion/Indifferent* *Negative/Pessimistic*	4 5 7 4
Education	*Graduate or Postgraduate* *5+ GCSEs/A Levels* *<5 GCSEs*	7 7 6
Lifestage	*Single* *Married/cohabiting (no children)* *Young Family* *Older Family* *Empty Nesters*	4 4 4 4 4
Age	*18-25* *26-35* *36-45* *46-55* *56-65*	4 5 4 4 3
SEG	*(A)BC1* *C2DE*	10 10
Gender	*Male* *Female*	8 12
Location	*England* *Scotland* *Wales* *N. Ireland*	11 3 3 3
TOTAL		**20 total**

[30] This was designed to elicit participants' top of mind response to GM rather than considered attitudes.

10 Group Sessions as follows:

Group	1	2	3	4	5
Attitude towards GM	Undecided	No Opinion/ Indifferent	Positive/ Optimistic	Mixed Opinion	Negative
Education	Graduate or Postgraduate	5+ GCSEs/ A Levels/ O Levels	Graduate or Postgraduate	5+ GCSEs/ A Levels/ O Levels	5+ GCSEs/ A Levels/ O Levels
Age	36-56+	36-56+	18-35	18-35	36-56+
SEG	ABC1	ABC1	ABC1	C2DE	C2DE
Location	England – Yate	England – Liverpool	England – Redditch and surrounds	England – Redditch and surrounds	England – Liverpool

Group	6	7	8	9	10
Attitude towards GM	Undecided	No Opinion/ Indifferent	No Opinion/ Indifferent	Mixed Opinion	Undecided
Education	Up to GCSE/O Level standard	Up to GCSE/O Level standard	Up to GCSE/O Level standard	Graduate or Postgraduate	5+ GCSEs/ A Levels/ O Levels
Age	36-56+	18-35	18-35	36-56+	18-35
SEG	C2DE	C2DE	C2DE	ABC1	ABC1
Location	England – London	England – Yate	Scotland - Edinburgh	Wales - Cardiff	Northern Ireland – Londonderry

3. Qualitative recruitment

Participants were recruited to the sessions through a network of recruiters working across the four nations in the sample. The participants were asked a series of brief demographic and attitudinal questions before being invited to attend the sessions. The purpose of the questions was to ensure a wide spread of different types of participants - for example, a range of ages,

different socio-economic backgrounds, attitudes towards GM and education levels - and to reduce bias.

Participants were provided with information about the content of the sessions, how their responses would be used, and who would have access to their session data and personal details. All participants fully consented both verbally and in writing, and were given the opportunity to withdraw from the research at any stage.

In line with market research industry standards, participants were offered and given a monetary incentive for taking part in the research session.

4. Qualitative analysis

All interviews were recorded (with participant permission) and full transcriptions were prepared. Each moderator then worked through data independently, conducting analysis via a systematic and ongoing process of data reduction against their personal notes (taken at time of interview) and transcripts.

Tables were created against different elements of the research to help analyse the findings by coding the data into themes against the research objectives. From the above, core themes, with evidence and illustration, were identified from each interview and collated into summary notes of key findings (key issues, themes, concepts and participant quotes in respect of these).

The full research team then shared and contrasted individual research findings. From this, summary notes were developed to identify key findings across the full research sample. These were distilled into a draft presentation, which was then shared with the research team to ensure that findings were fairly represented.

The final presentation, containing all findings against the objectives outlined above (Section C, Research Aim), was shared with the FSA team. This report

builds on the presentation and includes comments and suggestions from the FSA team. The findings below demonstrate the range of opinions of the research sample, with participants' verbatims to demonstrate their points of view.

The aim of qualitative research is to define and describe the range of existent views and explore linkages between these, rather than to measure their extent across the population at large. Qualitative methods neither seek nor allow the development of data regarding the numbers or proportions of people holding a particular view or having a particular set of experiences.

The qualitative research phase took place from the 22nd May to 4th July 2012.

5. Quantitative research: Questionnaire development

A quantitative questionnaire was designed in collaboration with FSA based on the qualitative findings and previous research[31]. The draft questionnaire was piloted by Define with ten individuals in order to identify any areas of potential confusion amongst respondents. Based on the findings of the pilot the questionnaire was then refined for the main quantitative stage of research[32].

6. Quantitative research: Interviewing, sampling and method

A TNS face to face omnibus was used for the quantitative phase. An omnibus was chosen as it provides both a robust sample, which allows for analysis at a regional level as well as being cost effective for the number of questions required. A face to face approach was selected as this allowed respondents to be shown lists of lengthy responses and answer codes they could consider in written form. This was considered likely to be easier to understand than having these read to them as would be the case with a telephone interview.

[31] BSA 2008, Gaskell et al 2011, NCSR, 2010
[32] The questionnaire used can be found in the supplementary appendix.

The questionnaire was translated into Welsh to accommodate preferences for a Welsh language interview. These were conducted by showing the respondents the written questionnaire - these respondents were then asked to self complete with their responses.

A TNS omnibus was used with a sample size of 1000 interviews with added boost samples for Scotland (200 interviews), Wales (221 interviews) and Northern Ireland (176 interviews). 870 interviews were conducted in England. Overall 1467 interviews were completed. Locations for the sample were drawn from random across 143 different locations.[33]

All interviews were conducted via the TNS field team and in accordance with strict quality control procedures. Quotas (by sex, working status and presence of children) were set during interviewing to minimise any selection bias. Such bias is possible if participants differ from others in their sampling location who were not at home or unwilling to participate. The Omnibus used a weighting matrix based on gender, age (16-24, 25-34, 35-54, 55+), social class (ABC1, C2, DE) and grouped Registrar General's Regions (North, Midlands, South). In addition, England, Wales, Scotland and Northern Ireland weights were imposed to ensure further regional representation.

General GM food questions were asked of all adults when asking about labels used when buying food, but specific GM food label questions were only asked of those aware of GM. This meant that those unaware of GM were not asked the later questions in the questionnaire. The sample size at these later questions (that is those who were asked specific GM food questions) was 1050 interviews.

Analysis used significance testing at the 95% level and this is used to comment on differences in the report. Only differences at this level were

[33]Random Location Sampling was used to choose the sample. More information about the sampling methodology can be found in the supplementary appendix.

reported and commented on. The report comments on some of the differences that are statistically significant but not all. Those that are reported on are those for which themes emerged through the data, for example, age, SEG and regional differences.

As the quantitative analysis involved over a hundred statistical tests, some statistically significant results may have arisen at random. Even if there were no underlying relationships, we would expect about one in 20 statistical tests to appear to be significant at the 95% level. Furthermore, significance testing is strictly only applicable to random probability surveys, rather than to the random location sampling used in this study. Therefore, results reported as significant should be treated as only indicative of a difference.

As well as analysing the data at a total sample level, results for each question were also analysed by sub-groups taken from standard demographic analysis: gender, age, social class, presence of children and geographic area. These cross breaks were included in the data tables along with key questions in the survey itself.

A demographic profile of the weighted sample[34] is provided in the following table. Due to the weighting applied, the sample matches the UK population as in the National Readership Survey. For more information please see supplementary appendix M.

	%		%
Male	48	**AB**	19
Female	52	**C1**	31
18-24	15	**C2**	21
25-34	18	**DE**	28
35-44	18	**England**	83

[34] Results are weighted to the demographic profile of current JICPOPS data. Please see supplementary appendix for more information on the approach.

45-54	17	**Scotland**	9
55-64	14	**Wales**	5
65+	19	**Northern Ireland**	3
With Children	30	**Principal shopper**	78
No Children	70	**Not principal shopper**	22

The aim of quantitative research is to quantitatively measure the knowledge and attitudes of a population to understand the numbers or proportions of the population that have a particular view or attitude.

Quantitative fieldwork was conducted between 21 and 29 September 2012.

The research team for this project included Joceline Jones, Victoria Page, Caitlin Connors, Lucy Bush, Sarah Salisbury and Jacqui Banerjee (BDRC).

The findings of the both the qualitative and quantitative research can be found in the following two sections; firstly the qualitative findings followed by the quantitative findings.

V Detailed Qualitative Findings

1. Context: Attitude towards Food Labelling and GM

1.1 Current Usage of Food Labels

1.1.1 Overview

A range of interest in and usage of food labels was reported across this sample, from frequent users to those checking labels rarely. Frequent usage appeared to be linked to high interest in food quality and/or healthy eating and was more likely when buying foods for the first time. However, label usage was also reported as flexible and changeable depending on situation or food type. Participants reported that interest in healthy eating (for example, when losing weight), the influence of media coverage of food topics (for example, food scares or animal welfare issues) or buying for children could temporarily increase usage. Conversely, budget shopping, time pressure and habitual purchases was reported as decreasing label usage overall.

1.1.2 Individual Differences

A range of interest in and usage of food labels was reported across this sample. This included a proportion of individuals who reported to be using labels regularly to inform their food purchases – particularly when examining or purchasing new food items. Typically, within this sample these individuals tended to be higher SEG consumers and more likely to be female participants[35] or otherwise responsible for shopping for children. However, the strongest factor associated with frequent label usage in this group was

[35] As found in EdComs 2007.

concern with food quality or healthy eating.[36] In some cases, this included participants with specific health issues such as food allergies.[37]

> "I am quite influenced by healthy eating and dieting – so calorie content would influence me. If I see someone's got a low fat amount or it's recommended by Weight Watchers or someone, I'll give it a try."
>
> [ABC1, 18-25, Male]

> "Over the last 20 years, so much has changed in food so I do look at labels because they're sneaking things in all the time aren't they – like additives and things... it's horrific what they're doing to your food before you get it."
>
> [C2DE, 36-45, Group]

Label information of interest for this group included:

- Calorie information
- Nutritional content – such as fat, salt and sugar content
- 'Healthy' labelling or schemes – such as 'organic', 'free from', 'farm assured' or branded options such as 'healthy choice' logos
- Ingredients list information – to check for any allergy-producing ingredients or the inclusion of additives or preservatives
- For some, allergy information

Others, from across different demographics, reported more occasional use of food labels, stating that whilst they may not check labels on all or most of their shopping trips, they relied on some label information at certain times or in certain situations – as discussed in the section following.

> "I might check labels on something like meat – just to learn where it came from, or the fat content sometimes."
>
> [C2DE, 18-35, Group]

---

[36] Also found in Grunert 2010.

[37] Those with allergies have previously been shown to be particularly high label users, as was found in the sample. EdComs 2007.

The sample also included participants who used labels much more rarely, and were less interested in the information provided on-pack. This group tended to include those primarily focused on price and those for whom food quality and healthy eating were relatively low priority. These participants tended to be lower SEG and thus more limited in their food shopping choices by financial constraints.[38] Male participants were somewhat more likely to fall into this category.

> "We're pretty easy come, easy go – we'll try anything really, and it's just about what the children like."
>
> [C2DE, 36-45, Female]

> "I focus on price, mainly... I just ignored labels, I suppose."
>
> [C2DE, 26-35, Female]

No country-specific differences in label usage were noted amongst participants. Likewise, rural or urban status appeared to make little identifiable difference on usage overall, although there were indications that some of the most rural participants were less likely to be buying packaged foods – instead purchasing 'raw' materials such as meat and produce from local producers – and thus were somewhat less likely to encounter food labels.

1.1.3 Situational Factors and the Influence of Food Type

Across the three groups above, there were indications that usage of food labels could vary across time and situation. Participants noted a range of external, situational factors that could temporarily increase or decrease their label usage. Interest in quality and food labels also varied according to food type.

These factors are discussed as follows.

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[38] Previous research suggests price can be a priority food shopping consideration for lower SEG consumers e.g. Davies et al. 2010.

Situational Factors Increasing Label Usage

It was raised that when trying to choose healthier foods – for example, if trying to lose weight or be healthier – participants may temporarily increase their label usage; for example, they would be more likely to look at the fat or calorie content of foods.

> "When I'm being good... you kind of look at the labels with regards to the fat content and calories... if I'm trying to lose a bit of weight or when you're on a bit of a health kick."
>
> [ABC1, 36-45, Female]

Participants also reported that they were more likely to check labels when buying for children – a situation which could raise interest in quality and health issues due to a perceived duty of care.

> "I guess I think parents with young children do tend to look more closely at these things."
>
> [ABC1, 46-55, Female]

> "With my little boy, we try to get sort of healthier food for him... as regards me and my partner, it's really whatever's there."
>
> [C2DE, 18-35, Group]

Participants also reported that *food scares* such as BSE and CSJ – or other food issues raised in the media, for example, animal welfare issues – could temporarily heighten a sense of concern about food quality. This could result in consumers avoiding certain foods (for example, beef), making different food choices (for example, 'free-range' eggs) or raising their sense of 'risk' around animal products. It appeared that this heightened sense of risk could lead them to seek higher quality products for this food type.

> "I don't buy caged hens because of the way they're treated and that... there was a TV programme about it... their legs were rotting away and all sorts, it was horrible."
>
> [C2DE, 18-35, Group]

Situational Factors Decreasing Label Usage

Participants across the three usage groups also reported that in certain situations they would be less likely to read food labels.

Situational factors that were claimed to impact on label use included *time pressure*[39]*, habitual purchases,* and *budget shopping* – when less money for food shopping is available, or when drawn in by certain price promotions.

For example, participants raised examples of situations in which they needed to quickly purchase food and would not invest the 'extra time' to check labels. Others noted that when they are 'just buying the same things as they always do' they would be less likely to check the food label than when considering or purchasing a new food item.

> "Sometimes I check the fat content or calories... but when I'm in a hurry I won't bother at all."
>
> [C2DE, 18-25, Female]

> "I think it tends to be with new products that I tend to look at the labels: things that I haven't really looked at before or am buying for the first time."
>
> [ABC1, 46-55, Female]

Influence of Food Type

Although food quality and concern about healthy eating appeared linked to participants' use of food labels, these priorities compete with a range of other factors such as price, brand, taste and convenience. Price in particular was raised as a dominant factor in many shopping situations, as participants raised that they were engaged in promotion-based or budget shopping.

[39]As raised in EdComs 2007.

Whether participants prioritised food quality also appeared strongly linked to food type – for example, choosing foods with perceived 'purer' ingredients or food processes, for example, organic, or minimising any perceived 'nasties' such as additives or 'cheap' ingredients.[40]

Participants reported the highest level of concern regarding quality and health when buying animal products – in particular, for fresh meats (for example, chicken breast), although quality concerns were also raised for processed meats or milk. This seemed to be linked to a perception that 'low quality' animal products are more 'risky'; participants noted negative connotations such as BSE/CSJ scares, animal welfare issues and more day-to-day concerns such as avoiding food poisoning.

> "If it's meat I would tend to try and buy a bit more expensive and make sure it's decent quality... you can get ill easier with salmonella and things."
>
> [ABC1, 18-35, Group]

> "Yeah. To me, meat, closely followed by dairy, is something that I would spend more on."
>
> [ABC1, 46-55, Female]

Concerns also extended into staple foods such as bread and milk – common food items consumed frequently and fed to children. Participants raised concerns that any negative impact of lower quality food items in this category may have more effect given higher-volume consumption. It was also raised that prioritising quality could be financially feasible for these food products, as 'higher quality' items tended to have relatively low cost difference than cheaper alternatives – for example, noting a minimal price difference between 'high quality' versus 'cheap' breads.

> "We use a lot of bread, so we wouldn't buy any cheap and nasty stuff."
>
> [C2DE, 18-35, Group]

[40] As noted in Davies et al. 2010.

Whilst there were reports of looking for healthier versions of ready meals with for example lower fats or salt, participants typically placed lower priority on quality and health when purchasing processed and treat foods such as biscuits and ready meals as these were considered less healthy. This was reported as leading to reduced usage of labels for this food category. Other competing priorities such as taste, convenience, favourites and price tended to take precedence[41].

1.1.4 Experience of Food Labels

Although the provision of food labels and the information they offered about products was considered useful when needed, a sense of *'information overload'* was also reported – particularly regarding back of the pack labelling.[42]

It was raised that labels could be difficult to read or understand, for example due to literacy issues or practical considerations such as small print.[43] Labels were sometimes seen as complicated with difficult or inconsistent language; for example, participants commented that packages for 'healthy' foods sometimes still indicated high sugar or salt levels.

> "I don't find them particularly easy to read; it's tiny writing and it's not [written] in a particularly clear way."
>
> [ABC1, 46-55, Female]

> "They've got so many different labels for so many different things it makes it hard to find what you need to find."
>
> [ABC1, 26-35, Male]

In response to this perceived complexity, participants indicated interest in simple solutions and short cuts such as the 'traffic light system' or other 'easy

[41] As found in BMRB 2008 and Grunert 2010.
[42] As raised in Davies et al. 2010.
[43] Found in EdComs 2007.

to read' logos – such as branded healthy labelling (e.g. 'lighter choices', 'fat free'), organic logos or 'free from' schemes.

1.2 Views on Genetic Modification

1.2.1 Overview

Across the sample, there were indications that GM still feels new and unknown for consumers, with attitudes towards it being fairly weakly held for a number of participants. GM food is a latent issue that participants are not currently engaged with and there was also low awareness and knowledge regarding current prevalence on the UK market. There were mixed expectations regarding the amount of GM food for sale, with a range of assumptions made – for example, that many foods contained GM or there was no GM on the market. There was also little awareness of the types of GM foods available.

Given current low knowledge levels, participants typically felt unable to make judgements about GM foods or tended towards negative assumptions – drawing parallels with more 'known' food technologies and practices. Participants thus drew 'top down' attitudes based on their more general attitudes to these technologies, and their sense that GM is 'unnatural', rather than forming 'bottom up' attitudes based on specific knowledge about GM itself. These top-down assumptions could lead to beliefs that GM food may be of lower quality, as well as to a range of health and safety concerns.

1.2.2 Overall Attitudes

As noted, the qualitative research sample was recruited to ensure representation of the following four attitudes to GM technology – drawing upon attitudes identified by previous research.[44] The sample was slightly biased towards those with neither Positive nor Negative opinions – to reflect

[44] See Sheldon et al. 2009 for more details.

the dominance of these views among the UK public.[45]. The four attitudes were:

- Negative – i.e., those raising concerns about potential 'unintended consequences' and risks (particularly health and safety issues) of GM foods. This group also tended to be more suspicious of the motivations of food producers.
- Undecided – i.e., those who felt that they lacked sufficient information about GM to form an opinion, or who saw both the potential 'benefits' and 'drawbacks'.
- No Opinion/Indifferent – i.e., participants for whom GM was not an issue or who were generally indifferent to the subject.
- Positive – i.e., individuals who generally focused on the potential benefits of GM for society.

In the sample, the most Positive participants tended to be more receptive to the potential benefits of GM and were largely more trusting of food producers, regulators, and scientific progress in general and therefore less concerned overall – although could have more concern with their own food purchases. Conversely, the most Negative participants tended to voice more concerns regarding potential safety issues and 'unintended consequences', and were more suspicious overall of the food industry – for example believing that brands were 'only out for profit' and thus could not be trusted to prioritise consumer safety and health.[46]

Undecided participants typically felt that they needed more information to take a firm view about GM and subsequently GM labelling. No Opinion/Indifferent participants tended to be less engaged with the issue of GM overall and tended not to consider this a priority issue – although discussion of the issue through the course of the sessions could increase their interest and concern.

[45]Brook Lyndhurst 2009; Sheldon et al. 2009; Clery & Bailey 2010;
[46]In line with findings from Sheldon et al. 2009 and Sciencewise 2011.

Across all four attitude types, there were also indications that attitudes were typically fairly undeveloped – subject more to instinctive, top-down responses to the issue of GM rather than specific knowledge and information about GM food technology.[47] This seemed to be due to relatively low awareness and knowledge levels regarding GM foods.

No differences within the sample were noted in GM opinions for rural versus more urban participants; nor did opinions noticeably differ across the four countries included in the sample.

1.2.3 Awareness and Knowledge of GM

This research suggested that although awareness of GM was relatively high, detailed knowledge was limited. Although there were examples of awareness, participants were on the whole unaware of the issue of GM feed, had low understanding of GM prevalence on the UK market, and had low knowledge regarding current legislation and requirements.

Awareness and understanding of GM discussed below is based on knowledge prior to being provided any additional information during research.

Awareness of GM and GM Foods

Across the sample, there was a range of knowledge levels regarding GM technology and GM foods; participants tended to be aware of GM, however, there were instances where respondents had not heard of the term. Participants raised in discussion the media coverage of GM through the late 1990s and early 2000s, although the details of this coverage were less top of mind. For example, participants raised that GM had been a 'controversial'

[47] As found in Clery and Bailey 2010

issue but could not remember specifics of 'pro' and 'anti' GM positions.[48] Awareness of previous GM crop trials was raised at times, but specifics had likewise been forgotten.

> "There hasn't been much publicity about it over the last few years … we haven't had any little lessons on television or in the newspapers, so we don't really know what it is apart from the information we picked up when they first mumbled about it 10 years ago."
>
> [C2DE, 56-65, Male]

> "When it was highlighted in the press... I guess that made me concerned at the time, but obviously not enough to make me search it out on the supermarket shelf; but I guess you know, what I don't see, I don't know about and I don't have to think about."
>
> [ABC1, 46-55, Female]

Although for some participants past media coverage had sparked a personal interest in the topic of GM, it was not a top of mind issue across the sample, and references to any recent media coverage were very low. For example, awareness of the recent media coverage that *had* taken place immediately prior to and during the research period – that is the media attention given to the Rothamsted GM wheat trials[49]was mentioned rarely by participants during research sessions. This perhaps suggests that when GM does reach national coverage it is of relatively low salience to those without specialist interest in the subject. However, this may in part be linked to the limited headline space it was given.

Accordingly, awareness across the sample regarding the current *prevalence* of GM foods on the UK market was limited. Participants typically reported confusion as to whether GM foods are currently available, with a range of expectations reported – from those believing that it had been banned from UK sale to those assuming it was likely to be widely available.

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[48] This level of knowledge consistent with findings of Costa-Font et al. 2008 and Gaskell et al. 2010.

[49] Further details about these trials can be found at http://www.rothamsted.ac.uk/Content.php?Section=AphidWheat.

> "I don't know how widespread it is to be honest – I've really got no idea."
>
> [C2DE, 56-65, Male]

There were also indications of general confusion regarding *what types of foods* tended to be GM. For example, participants sometimes assumed that GM animals were on the market. Awareness of common GM foods (such as soya, maize, sugar beet and rapeseed products) was limited.

> "I thought it was growing... like to make cucumbers straight and things like that."
>
> [C2DE, 46-55, Male]

> "I would imagine that tomato paste, tinned tomatoes – anything to do with tomatoes (might be GM). I mean that's fairly simple and therefore quite easy to modify against certain pests."
>
> [ABC1, 56-65, Male]

Across the sample, there were indications that once participants were made aware of the types of GM ingredients currently appearing on the market (for example, soya, sugar beet, maize and rapeseed) this could provide a degree of reassurance. For example, the fact that these items tended to appear in processed foods – and that GM produce and meat are not currently on the market, as consumers sometimes expected – tended to lower consumers' overall sense of risk given the lower priority of quality in these products.

> "If it was genetically modified... something you recognise, like with soya, I think you'd feel better about it."
>
> [ABC1, 18-35, Group, Redditch]

Participants in this research were typically unaware of the use of GM feed or GMO use in food production.[50]Prior to being shown any information, discussion around GM prevalence tended to focus on GM food ingredients only.

[50] As found in Clery & Bailey 2010 and GfK NOP 2010.

Knowledge Levels

A spread of levels of knowledge about GM and GM foods was seen across the sample. There was evidence of those who were highly knowledgeable about the subject – for example, those who were aware of the principles behind GM technology and how and why this is used, and who had opinions regarding potential benefits and drawbacks of GM foods.

> "I'm interested in science – I read Slashdot and stuff like that, that relates to the uses of technology to help..."
>
> [ABC1, 36-45, Male]

However, it was much more commonplace for participants to have a more basic understanding of GM, having been exposed (typically through media) to general information about GM technology and the potential benefits and drawbacks, and to state that they lacked the understanding to form strong opinions. This extended on occasion to a lack of understanding of what the initials 'GM' stood for.

Among this lower-knowledge segment of the sample, there were indications of confusion about how GM technology would affect the final product. The assumption that foods containing GM ingredients would somehow be qualitatively different than those without was raised by those less knowledgeable participants, with very low awareness overall that ingredients obtained from current GM crops are interchangeable with their non-GM counterparts.

> "What GM actually stands for is beyond me... that would be the first question I would ask."
>
> [C2DE, 18-35, Group]

1.2.4 Expectations of GM

Top Down Opinion Formation

In order to form opinions about GM and its potential impact, those participants with less knowledge tended to develop top down opinions based on more general attitudes to other food technologies. As evidenced in previous research,[51] participants tended to assume that GM was 'unnatural' in some way, which could raise the sense of risk associated with products using GM ingredients or GM in processing or feed.

Previous research on attitudes towards GM also suggests that these top-down attitudes can align with consumers' general attitudes towards science and technology – for example, with consumers drawing parallels between GM technology and cloning or other biotechnologies.[52]Findings suggest they may also draw on general attitudes to food and food processing.[53]

In this research, participants' views were typically formed based on the latter issue – as participants drew on opinions about *other modern food technologies and practices.* For example, participants assumed that GM 'ingredients' or 'processes' were similar to other perceived 'unnatural' processes such as the use of additives, chemical fertilisers or growth hormones. Cloning and other novel biotechnologies were less salient in this research context and were raised only rarely.

> "Does GM feed have hormones in it to make the animal bigger?"
> [ABC1, 46-55, Female]

> "I thought it was like – say you get a crop field and they sort of put chemicals on it to make it maybe better or sweeter or bigger."
> [C2DE, 18-35, Group]

Subsequent attitudes towards GM varied. Those more trusting and accepting of modern food technology (or for whom this was a low priority issue) tended

[51]For example, Gaskell et al. 2010 and Brook Lyndhurst 2009.
[52]Gaskell et al. 1999; Brook Lyndhurst 2009.
[53]Sheldon et al. 2009.

to raise fewer concerns about GM content in food products. However, for others this raised strong concerns.

Concerns

Participants' concerns based on their own knowledge, regarding foods containing GM, tended to centre on *health and safety* issues[54] in terms of both human and animal welfare. As GM was felt to be a fairly 'new' technology, doubts were raised regarding 'possible unknown side effects'. For humans, these included long-term issues such as cancer or other serious illnesses as well as more immediate health issues such as allergic reactions or food poisoning.

> "There's so many people dying of cancers – is it about what we're eating?"
>
> [C2DE, 36-45, Group]

Participants also raised concerns regarding animal welfare and health. This was linked to assumptions that animals fed GM feed may have been badly treated by food producers, or queries about the possible effects of GM feed on animal health – for example, concerns that GM feed may cause 'unnatural levels of growth' or even deformity.

> "It would seem unnatural, unnecessary – and again, it affects the welfare of the animal."
>
> [ABC1, 18-35, Group]

Although other concerns were raised, these seemed to be less significant overall, and tended to be raised by more knowledgeable participants only – such as those with specialist interest in science and technology, environmental issues, food processing technology, or GM food technology specifically.

[54] As found in Sheldon et al. 2009 and Sciencewise 2011.

For example, the issue of *environmental risks* of GM was noted– including issues of cross-contamination between GM and non-GM crops, or general risks to crop diversity. Concerns regarding *political and corporate issues* were also raised in discussion, such as: intellectual property rights to GM crops, potential negative impact on farmer's rights, or monopoly power of Monsanto.

> "I'm all for it as long as the patent system doesn't get abused."
> [ABC1, 36-45, Male]

Perceived Benefits

Among more knowledgeable participants, benefits were raised in general discussions about GM, prior to seeing any information. Additionally, participants were at times accepting (to varying degrees) of arguments about the potential 'benefits' of GM food technology presented during the research process.

Although a range of possible benefits were noted across the sample, the potential to increase food production (e.g., alleviating starvation or malnutrition) was most readily accepted as a potential benefit – and for more positive participants as a reasonable 'reason for use'. The potential to improve food quality or the safety of production, for example, by reducing the need for pesticides or fertilizers was also considered beneficial.

> "I can see that there's a lot of positive things that could come out of GM – like in terms of population growth and food choices and the starvation around the world."
> [ABC1,18-25, Male]

As suggested by previous research,[55] there was some indication that the provision of additional information - including benefits as well as potential risks – can alter consumer attitudes towards GM foods. Despite common

[55] For example, Lusk et al. 2005.

initial concerns raised about GM technology, providing a 'reason for use' could counter this negativity in certain cases.

2. Response to Current GM Labelling

2.1 Usage and Awareness of GM Labels

Overall, there was low awareness of any existing labelling of GM within the sample. The sample were typically not currently seeking information or labelling with regard to GM content and GM information is not currently a strong need. However, as detailed below, when the topic of GM and labelling is raised, for example within the research sessions, GM labelling this is seen as important in providing consumers with the right to choose.

Current Usage of GM Labels

Previous research is somewhat inconsistent regarding the percentage of the UK population currently checking for GM labelling information on-pack.[56]Responses across this sample indicated that *GM foods and labelling were not top of mind*. This appeared to be true regardless of overall label usage. Participants largely reported they were not proactively checking for GM labels when food shopping, with only one participant saying that they looked at GM labels previously.

Awareness

There were rare reports of past experiences with GM absent labelling schemes, primarily in reference to promotions by a supermarket of its own-label range being free from GM ingredients. Although those that reported awareness of this promotion claimed that it had a somewhat positive impact

[56] The FSA's research indicates that approximately 1/5 of consumers report seeking information about GM labelling on food, NCSR 2010.

on their perception of the store (perceived as more ethical and healthy), this was not reported as impacting on actual shopping behaviour.

> "In [the supermarket] about 15 years ago, all over their stores you'd see 'No GM."
>
> [C2DE, 36+, Group]

Experience of GM present labelling was also very limited in the sample, and those participants indicating they had seen GM present labelling (for example, on processed meals/treats such as biscuits and puddings) were usually unsure regarding exactly what label they had seen. There were also reports from participants who tentatively felt that they might have seen fresh GM produce (for example, cucumbers or tomatoes) or GM meat in the past, although such products have never been approved or marketed.

> "I think I've seen this on some vegetable items like tomatoes – 'may contain genetically modified'?"
>
> [ABC1, 18-25, Male]

2.2 Awareness and Expectations of Labelling Requirements

Consistent with previous research,[57] there was low or no awareness of current requirements regulating the market presence and labelling of products containing GM.

However, it was assumed in the main *that GM is a regulated issue*– specifically, that any GM-containing products would be labelled for consumer information. Participants typically reported that they felt that consumers have a 'right to know' if GM ingredients were present in their food.

> "I do think the consumer has a right to know what's in the products they're buying. As to how much of an impact it would have on them actually – making the choice to buy it or not – I don't know."
>
> [ABC1, 36-45, Female]

[57] E.g. European Commission 2010.

Participants perceived that labelling information per se had steadily increased in recent years; for example, in the form of 'traffic light' systems, allergy information and animal welfare information such as the red tractor scheme. This could contribute to the expectation that foods containing GM would be labelled.

> "If it is genetically modified or whatever, actually I'd imagine it would have to be labelled – the same way everything else has got a label nowadays, telling you exactly what it is."
>
> [C2DE, 18-25, Group]

Given the very low awareness in the sample of the use of GM animal feed and other GM production techniques, such as the use of genetically modified enzymes, discussions of labelling guidelines tended to focus on GM food ingredients only. Regulation or labelling around 'GM-free'-type products was also not top of mind in the sample.

2.3 Response to Current Labelling Requirements

During the research sessions, participants were shown a summary of current UK labelling requirements regarding GM content (See supplementary appendix).This was shown after exploring the label options so as not to unnecessarily influence response.

2.3.1 Loose and Prepared Foods

Although information about 'prepared and loose' food (for example, cooked foods made available in supermarkets or catering environments) was provided to participants, the focus tended to be on packaged foods. Although not prompted, the issue of GM labelling for cooked foods or catering in the sample was on occasion raised, for example, with reference to buying meat goods in farmer's markets or other direct-from-producer shopping.

2.3.2 GM Feed

Across the sample, there was broad surprise that labelling was not required to show where GM feed had been used.[58] As mentioned, animal products tended to raise the highest concerns and sense of 'risk' of the food products discussed; as such, participants appeared to have a stronger belief of a 'right to know' if GM feed has been used. As we will discuss, although GM is not detectable in the end product when GM feed has been used, participants tended to believe that GM feed was qualitatively different in some way and may affect the taste, nutrition or safety of the final food product, i.e. the food obtained from the animal as well as potentially impacting on the animal itself.

> "I think you should be told and that should be labelled – that they are fed on GM food. That would make me definitely switch over to organic and free range."
>
> [ABC1, 46-55, Female]

> "I'm surprised about the food for animals... I think that's terrible that they don't have to label it."
>
> [C2DE, 36-45, Group]

For others, regulations around GM feed were less of a concern. This tended to be individuals who were less interested in food quality and labelling issues overall, or who simply felt that the labelling of GM feed was a lower priority issue than the labelling of GM ingredients themselves.

2.3.3 GM Used in Food Production

This was again new information for participants in the sample. Those participants, who strongly prioritised food quality and/or health, or individuals with strong negative opinions about GM, typically considered that any use of GM in food production should be labelled. This was due to a belief that any use of GM should require labelling regardless of how this appeared, or because they found it difficult to understand how it could not still be present in

[58] Consistent with Sheldon et al. 2009 and GfK NOP 2010.

the final product. This response could be countered when costs were considered (See Section 4 for more detail).

> "Surely if it's been used in the production, then it's there in some sense or other... like if the product doesn't actually contain nuts, but it may contain traces because of everything else."
>
> [ABC1, 18-25, Group]

However, others accepted the current lack of labelling for GM production. This issue could be considered to be of lower priority overall than the labelling of GM ingredients or the labelling of products using GM feed. In addition, it was raised that the issue was felt to be more complicated and difficult to understand, which led to reduced engagement with the topic.[59]

2.3.4 Tolerance Levels

Across the sample, participants reported a somewhat mixed response to the current accepted tolerance level, that is, <0.9% of accidental or adventitious GM material.

For the most part, the threshold of 0.9%was accepted as a 'reasonable' level at which to require GM labelling and did not raise concerns. Participants tended to draw on their understanding (or perceived understanding) of tolerance levels in other labelling systems, for example, suggesting that perhaps foods labelled as organic may have some small amount of non-organic material present.

> "I think that's fair enough – if you've got a little chicken running around a field, you don't know – he might pick up a random seed and you can't avoid that... or when you mix the crops... 1% is not a lot, is it?"
>
> [C2DE, 18-35, Group]

[59] This mixed response regarding GM production labelling is consistent with previous findings by Sheldon et al. 2009.

However, a core of the most concerned consumers expressed concern in response to this tolerance level. It was on occasion raised that they felt the tolerance level should be lowered (with 0.9% feeling 'too high' or a significant amount of GM content) or eliminated completely (with any product which cannot guarantee 100% absence requiring labelling as GM present in some way).

> "I think if there's GM being used, then it's GM, it should be labelled. I know 0.9% is a very small amount... but if it's 0.9% of, you know – a large amount of material – it could be a lot of feed and stuff in that food source."
>
> [C2DE, 26-35, Female]

Response from Follow Ups

These views were typically maintained in follow-up questioning; however, there were indications of less concern about tolerance levels at point of follow up than in initial research.

2.3.5 Voluntary GM Absent Schemes

The current voluntary status of 'GM Free'-type schemes – in which requirements recommend rather than require certain criteria for 'GM Free' status – was of lower interest in the sample. GM absent labelling was typically felt to be 'nice to have' rather than mandatory consumer information; as such, these schemes raised less concern overall.

However, there was a degree of surprise regarding the current lack of regulation for these schemes among more concerned participants – those already prioritising quality issues or those with strong negative opinions regarding GM. Some issues were raised regarding potential inconsistencies in labelling across brands or products. A need for regulation in this area was raised although for the sample overall this was not a priority issue.

> "I'm a bit unhappy that it seems to suggest because terms such as non-GM and GM-free are voluntary, then the usage is inconsistent, which seems odd. I think those terms should be legally defined and

although they don't have to use it, if they are going to, there should be criteria that they should meet."

[ABC1, 18-25, Female]

Response from Follow Ups

Lack of regulation of voluntary free schemes was typically not mentioned by participants in follow ups and does not appear to be a key issue overall.

3. Response to Label Options

The participants were shown a range of mocked up label options to indicate GM absent and GM present. The following section discusses response to these labels. Participants were asked what they perceived the likely response to the labels would be, for example the potential impact when shopping. It should be noted that the impact that respondents' state is a *claimed* impact of the label options, that is, what they *say* they might do if they saw the label on a product. This research, however, cannot provide information on *actual* impact on purchase.

3.1 Summary of Responses

3.1.1 Overview

There was interest in GM labelling across the sample. Current label users with an established interest in food quality or strongly negative GM opinions were most likely to want GM information to be labelled, although others still felt it was their and others' 'right to know'. Although socio-demographic factors such as gender and SEG did not appear linked with responses to GM labelling amongst participants, there were indications that these were associated with overall label usage and interest in quality. The greatest *claimed* impact on the shopping behaviour appeared to be amongst those in the sample who frequently used labels to guide their shopping behaviour. As found with current shopping behaviour, the degree of importance placed on GM labelling was also dependent on food type as well as other factors.

3.1.2 Interest in GM Labelling and Labelling Opinions

A range of factors were identified through the research as being linked to participant interest in and response to GM labelling, including: individual variables (level of label usage and GM opinions), the food type under discussion, and other external factors.

These are discussed as follows.

Individual Differences

Current label usage and interest in food quality appeared to be strongly associated with participant interest in GM labelling specifically – and of the claimed impact of any GM labelling provided.

Although socio-demographic variables such as age, gender and SEG did not appear to be linked to responses to GM in the first instance, there were indications that these were potentially associated with overall label usage and interest in quality. Within this sample, female participants appeared more likely to be checking labels overall, due to an interest in health, nutrition or weight management. They were also typically more likely to be purchasing food for small children, which could also result in higher prioritisation of food quality over other factors. Conversely, lower-SEG participants were less likely to indicate quality as a key shopping priority over competing factors such as price; budget shopping tended to decrease attention to labelling overall.

Overall, the core of most concerned consumers in the sample – frequent label users and/or those most negative towards GM – were more likely to want GM labelling to be provided on-pack and to report that they would use these labels to help determine their food purchases. Participants in this group were also

more likely to suggest they may pay a price premium, depending on budget, to avoid food with GM ingredients or GM feed[60].

> "I think if you really want something, you'll go and buy it whether it's a bit more expensive or not if you really want it. Because GM is in the end product, I would - definitely."
>
> [C2DE, 36-45, Group]

Participants who reported using labels occasionally and/or those without strong negative views towards GM typically still claimed that labelling about GM should be provided for themselves and others; however, they reported a mixed response regarding the claimed impact of GM labelling on their purchase decisions. There were suggestions that these could be used to help them determine GM content and avoid foods containing GM when buying food products. However, others in the sample did not necessarily feel that GM labelling would strongly impact on their purchase decisions. Instead, other factors such as price, taste and brand would take priority.

> "If I'm buying biscuits, I would focus on price or promotion and possibly kind of brand and quality of ingredients... GM would come below those."
>
> [C2DE, 36-45, Group]

Nonetheless, this group could imagine certain instances in which they may want to avoid GM foods or would prefer to buy GM absent products – for example, if prioritising health and quality issues, or if they became more concerned about GM – and therefore labelling was considered useful.

Those who reported using labels more rarely, and/or those more positive towards GM overall, considered that they would be unlikely to use them to alter their purchases when shopping. However, there were indications, even amongst this sample group, that provision of GM labelling would be

[60] Lusk et al. 2005 and GfK NOP 2010 also indicate some consumer willingness to pay a price differential to avoid GM foods.

reassuring. Participants also felt they or others had a 'right to know' regarding GM content.

> "I do think the consumer has a right to know what's in the products they're buying..."
>
> [ABC1, 36-45, Female]

Among participants that were undecided about GM or considered they needed more information, there was hesitation about whether labelling should be introduced without further information, as it was difficult for them to form a response solely to the labelling information offered. However, on balance it was considered that some form of labelling should be in place to help them determine GM content and avoid choosing foods containing GM if they so wish.

Those who tended to make negative assumptions about the possible impact of GM generally defaulted to stating that they wanted the labelling.

Response from Follow Ups

Despite interest in additional information expressed during research sessions, participants not included in the core group of most concerned users typically reported that they had not checked for GM present labels when making food purchases following research discussions.

Within the sample, there appeared to be no evidence of strong links between participants' reported general knowledge levels about GM and their attitudes towards GM and labelling.[61] Rather, knowledge levels seemed more associated with opinion *strength*, with those holding strong opinions being more likely overall to have sought independent information about GM technology or GM foods – either because it was a particular issue of concern (for those most negative) or because they found the topic engaging and worthwhile (for those more positive).

[61] As suggested previously in the literature, e.g. Brook Lyndhurst 2009.

As elsewhere in this research, there was no appreciable association between participant location (in terms of either rural/urban status or country) and attitudes towards GM labelling.

Food Type

Across the sample, the level of interest in and concern about GM labels varied according to the type of food under discussion. This was consistent with the types of foods that participants already tend to pay more attention to in terms of labelling and quality, as discussed previously in Section 1.1.2.

Overall, participants expressed more interest in GM labelling – and reported they were more likely to alter their shopping choices when purchasing foods based on GM content – for animal products,[62] frequent staples (for example, milk and bread) and perceived 'healthy' products (for example, any labelled 'healthy choice'- type foods or products such as yogurts).

> "If I saw something which was meat which had been modified by something, then I'd think probably a little bit different, because vegetables and all that, they can't really cause you any harm if they were off or out of date or something like that; but when you get to meat...."
>
> [C2DE, 46-55, Female]

Participants were less likely to report a need for GM labelling or be concerned about the potential impact of GM content for more 'processed' foods (for example, ready meals) or perceived 'unhealthy' treats (for example, biscuits). Although it was assumed that if on-pack GM labelling information is offered it should appear across the full range of food types, the expected impact of labelling on these types of products was considerably lower.

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[62] Lusk et al. 2005 has previously indicated that GM meat products tend to be the least desired GM foods.

3.1.3 General Response to Label Options Tested

Assumed Reason for Labelling

Discussion about GM labelling in the research tended to raise questions amongst the sample. Labelling, by its general nature, provides information to potentially allow consumers to make a choice about something they would like to avoid or seek out in a food product. There was an assumption made that, without prior knowledge (and with underlying concerns) that the act of labelling GM was potentially indicating that GM was something to 'watch out for'. Assumptions were raised in discussion that the introduction of mandatory labelling requirements may be in response to emerging evidence about GM harms.

> "I think the fact that they're being labelled implies that they are not good for you."
>
> [ABC1, 36+, Group]

However, it was raised by participants that FSA or supermarkets would not allow food on shelves if they were not safe.

> "If it was going to be harmful, they wouldn't put in on the shelves, would they? Surely not."
>
> [ABC1, 18-35, Group]

Knowledge and Awareness

As mentioned previously, for those with very low knowledge levels, the use of 'GM' as shorthand for 'genetically modified' across the labelling options also caused confusion at times. At times, participants indicated that they would not understand what the letters 'GM' meant without provision of further context or information.

Beyond this, the perceived lack of information about GM and current participant confusion indicated that consumers may need supporting

information[63] to provide clarity and reduce any misunderstandings about GM ingredients or animal feed if labelling becomes more widespread.

Format Considerations

It was also raised that the GM information could be missed amongst other information on food packages, as it was likely to be fairly small. This raised concerns amongst those wishing to avoid GM or conversely led others to believe they would just 'miss' the information and make the purchase. For both GM present and GM absent label options, there were suggestions for a 'stand out logo,' so that interested consumers could more readily assess GM status.

> "I think on all products, probably, if they are GM, some kind of wee logo would be good for everybody."
>
> [C2DE, 26-35, Female]

In addition, it was raised that a labelling system that could cover all or some labels would be beneficial. For example, a system to indicate both whether GM is present (regardless of how) or absent. For example, a suggestion of a 'traffic light' system for GM information, in which presence of GM ingredients would warrant a 'red' label, use of animal feed (and/or, potentially, GM production) would be noted in 'amber', and GM absent foods appearing as 'green' was raised.

> "I think it could be on the front [of the pack]... something clear, like the traffic light system – they should do that with GM as well because if you don't want it, then you should know that it's there.
>
> [ABC1, 18-35, Group]

3.1.4 Overall Response to GM Present Labelling Options

Need for GM Present Labelling

[63]See Section 5 for more details regarding information needs.

Indicating the presence of GM was considered important across the sample, especially for certain audiences– although, as discussed, the expected impact of GM present labelling was variable. Given the sample's latent concerns about GM, indicating presence was felt to fulfil the requirement of the consumer 'right to know', especially regarding the presence of GM ingredients and the use of GM animal feed.

There were indications that low understanding of how GM technology works and why it is used can lead to negative assumptions about foods containing GM. Across GM present label options, participants expressed beliefs that GM was similar to – or, almost synonymous with – known 'low quality' production processes. For example, participants drew parallels between GM and the use of additives (E numbers) or the insertion or addition of other chemicals (crop dusting, fertilisers, or hormones). This could lead to negative expectations in terms of human health, animal welfare, food quality and taste.

> "I'm upset by artificial additives and in a way, that's what GM is, isn't really? It's an artificial additive."
>
> [C2DE, 56-65, Male]

> "I just had a vision of like a plane going over sort of a crop and spraying a load of chemicals."
>
> [C2DE, 18-35, Group]

> "With them putting 'this food has got GM' ... it's more like a health warning."
>
> [ABC1, 36-45, Female]

Claimed Impact of GM Present Labelling Options

The claimed likely impact of GM present label options varied, with a spread of responses noted across the sample. The most concerned participants claimed they would switch brands or products if they noticed GM ingredients or GM

feed labelling[64], in order to avoid perceived 'low quality' products and any expected health or safety risk. It was also raised in discussion that they could be willing to pay a price premium, depending on budget, to avoid products using GM ingredients or GM feed.

However, the expected impact of GM labelling on food purchases was felt to be lower for those not currently prioritising food quality issues; these participants felt that labelling would not alter their purchasing priorities or become more important to them than factors such as price, taste or favourite brands. Those not currently using labels also expected that they might not notice GM feed or ingredients labelling and therefore claimed that the impact would be low.

It was also raised in discussion that GM present labelling may result in negative perceptions on brands or on food regulators – particularly with reference to GM feed labelling.

3.1.5 Response to Tested GM Present Label Options

Participants explored three options for labelling GM presence. Responses to each individual label are discussed below:

(a) Contains GM ingredients, e.g. 'Contains genetically modified soya'

Understanding and implications

Participants typically understood this label option to indicate that *at least some of the product's ingredients* had been genetically modified. It was questioned on occasion, however, what the balance of products might be, for example, 'how much GM' was in the product as a whole.

[64]Although 'GM feed labelling' is used for the sake of brevity throughout this report, this is intended to mean 'labelling to show the use of GM feed'.

However, participants reported that the *implications* of this label were not always clear to them, with a range of positive or negative assumptions made as indicated above. Whilst it was raised in discussion by more informed or 'Positive/open' individuals that the presence of GM ingredients was perceived to have no real impact on food, others made more negative assumptions.

Health and safety concerns were also sometimes raised – for example, the potential for long-term complex illnesses (such as cancer) or more immediate health issues (such as food poisoning, physical illness or allergic reactions).

> "You've got this kind of scientific Frankenstein thing that: what is it going to do to us in the long term? We don't know ..."
>
> [C2DE, 56-65, Male]

Although on the whole participants expected that foods with GM ingredients would taste the same as those with non-GM ingredients, there was an occasional expectation that these may taste 'different' in some way. At times, participants assumed that GM 'additives' might have been introduced to improve the food's taste, whereas others thought that as a 'lower quality' product it might have a poorer taste.

> "They have got stuff added to them to make them tasty..."
>
> [ABC1, 36-45, Female]

Perceived need for GM ingredients label option

Overall, participants considered that GM ingredients *should* be labelled on foods available in the UK market. This was based on a general perception that the consumer should have a 'right to know' regarding GM presence in food products or, for more concerned consumers, linked to a wish to be able to avoid GM foods. However, as discussed previously, the impact of this label on purchasing decisions may be low overall, with the exception of those consumers already prioritising quality issues.

There were, however, participants – typically lower SEG or budget shoppers with low existing label usage, or those who were more undecided about GM –

who raised in discussion that GM ingredients should not be a priority issue for labelling.

The reasons for this stance varied, including: a desire to avoid exacerbating any current 'information overload' of food labels; the belief that any potential GM harms are unlikely or too 'unknown' to cause concern; or the sense that this is lower priority than other issues (for example, established health harms such as trans-saturated fats).

> "I'm not sure if it should be labelled – I'm a bit on the fence really... you can't expect everything to be labelled...."
>
> [ABC1, 18-35, Group]

Response from Follow Ups

Participants views on consumers' 'right to know' regarding the use of GM ingredients were largely maintained upon follow up questioning.

Format preferences

Between the two options of this label that were tested – that is, footnoted or within an ingredients list[65] – the footnoted placement of GM ingredients information was preferred overall. Participants felt this placement made the information easier to scan for and locate, and they considered it would be more helpful to have an accessible 'summary' of GM ingredients.

> "I'd prefer the asterisk because it cuts down on the repetition and enables you to get a better picture of what is [in the food], rather than being confused by a lot of brackets."
>
> [ABC1, 56-65, Male]

(b) From animals fed GM feed, e.g. 'From chickens fed GM feed'

Understanding and implications

The language of this label option was considered clear by participants – although, again, the *implications* of GM feed labelling were felt to be less

[65] Both formats are acceptable under current legislation.

straightforward as participants tended to know little or nothing about the use of GM feed.

In the absence of further information, participants raised a number of assumptions, for example, that GM feed may be used to 'bulk up' and fatten animals, or to 'unnaturally' speed their growth. This raised concerns that GM feed lowered animal welfare or food quality, or that foods containing animal products fed GM feed could somehow negatively impact on human health.

> "It means they've been fed something to change the process – and to me I would automatically think – that's not natural and not healthy... It was fed a certain type of food to make them perhaps more fat or produce more meat or something, so they could then make more money off that particular thing."
>
> [C2DE, 46-55, Group]

As a result of the above, it was also assumed that animal products using GM feed would be 'lower quality' in terms of taste or nutritional content. For example, participants at times drew parallels with the difference in taste between eggs from caged hens versus organic or free-range hens. This could lead to expectations that GM-fed animal products would be cheaper, due to assumptions that GM feed would be less expensive for producers to use, or that it allowed producers to raise animals more quickly. This also raised negatives within discussion about producers that might use this, for example, assumptions that they would be less concerned about animal welfare.

> "It's basically food done on the cheap... it just reinforces that they're cutting corners basically and the quality might not be there."
>
> [ABC1, 36-45, Group]

> "Possibly I'd feel a bit negative about the company – for ethical and environmental reasons I'd wonder if it was necessary that they were doing that.... because if you don't need to and it's just about making more money – maybe I'd feel a bit funny about it."
>
> [ABC1, 18-25, Female]

There were also indications that if GM-feed labelling was to be introduced in the future, it may generate a negative response towards food regulators due

to a perceived ‘right to know’ and frustrations that they had not been told previously.

However, those less negative towards GM technology also raised positive expectations. For example, participants at times reported beliefs that GM feed might be used to improve the nutritional content or taste of animal products.

> “Maybe it’s we’ve put vitamin A in here and it will boost your metabolism.”
>
> [C2DE, 36-45, Female]

Response to additional information

After exploring responses to GM feed labelling, participants were provided with additional information about GM feed (as required) and reasons for its use (see supplementary appendix).

Provision of additional information about GM feed did help to reassure (although not always). For example, explaining that GM feed does not differ from non-GM alternatives and is not used to ‘modify’ or ‘alter’ the animal itself helped to reduce concerns about its effects on animal health. The idea that GM feed is used in part due to a shortage of non-GM feed available also provided a ‘reason for use’ that was largely accepted by the sample.

> “It actually makes me more relaxed about it... if I see something with GM I won’t automatically put it down... if it’s necessary, if there’s not enough of certain things [like non-GM feed] and it has to be done to get food out there...”
>
> [C2DE, 18-25, Female]

However, for other participants (including the core of most concerned participants) a sense of risk persisted despite the provision of explanatory information. In the context of high-concern foods such as animal products, these participants wanted ‘strong proof’ that no animal or human health issues are indicated. Participants at times also raised concerns regarding the motivations of food producers or a general distrust of scientists, although concerns tended to be more linked to a sense of ‘unknown’ danger than a belief that consumers would be intentionally deceived.

> "It's something we don't really know about; we don't know the health implications, we don't know what the long term effects are and how it's affecting nature and that sort of thing, do we? None of us do."
>
> [C2DE, 36+, Group]

> "I'm typical of the average person in Wales and, you know, we don't trust scientists, ok?"
>
> [C2DE, 46+, Male]

Perceived need for GM feed label option

Due to the negative perceptions regarding health, safety and quality, there was a strong feeling across the sample that consumers have a 'right to know' if GM feed is used in any animal food products. This was typically true across participants in the sample, even for those participants who did not feel they would alter their shopping behaviour based on GM feed labelling at present.

Although consumers could theoretically purchase organic-only products if wishing to avoid GM feed, when explored with part of the sample, this tended to be rejected as a 'proxy' alternative to GM feed labelling. Participants typically felt that regulators would be failing to meet their duty to consumers if they did not label this directly.

> "No – I think the term organic has been widely abused, and it doesn't automatically imply or not imply a connection with genetic modification."
>
> [ABC1, 56-65, Male]

Although participants generally felt that it should be labelled, there were participants who were less concerned overall with labelling the use of GM feed. These included either those who were less likely to be reading labels or were more open or indifferent to GM.

It may be useful to note that participants' GM labelling requirements may alter if GM feed labelling was to become commonplace, appearing across the majority of animal products or range of brands. Whilst there was a degree of recognition of this, participants did not always understand that this could be

the result if labelling was mandatory, given the high usage rates of GM feed for animal products in the UK market. Those that did consider the issue of high prevalence raised in discussion that it might be simpler to label *non-GM feed*, obviating the need to label foods in which GM feed *had* been used.

> "If we all had access to this information and realised it's everywhere, then it makes more sense to be able to allow labels to say GM-free if they can prove they are... otherwise, it's going to be across the board in everything, which is very disappointing."
>
> [ABC1, 36+, Group]

Response from Follow-Ups

Those expressing the view that GM feed should be labelled on the whole maintained this view in follow-up discussions, although participants did sometimes reconsider upon later reflection and felt that it was not as essential as they originally claimed. The latter were typically lower-frequency label users and/or those without strong negative opinions about GM whom felt that expected impact of GM feed labelling would be minimal for them personally – and thus of lower priority overall. Participants who felt that GM feed should not be labelled maintained this view at follow up.

(c) GM used in food production: 'Produced using rennet from genetically modified organisms'

Understanding and implications

At first glance, this label option tended to confuse participants, with indications that further information might be needed to help understand it. This was for a number of reasons. The language, especially the use of the word 'organisms,' was perceived as fairly 'scientific' and difficult to understand. Understanding of 'rennet' was also limited, including how it was used to make cheese.

> "I think you'd have to go away and look it up, because it doesn't explain what it actually is."
>
> [ABC1, 18-35, Group]

> "I don't understand actually. A genetically modified organism – what is that? Is it something grown in a Petri dish?"
>
> [ABC1, 46-55, Female]

Due to participant confusion around GM production, and the language used on this label, participants raised on occasion the fact that they found it difficult to understand whether the final product actually contained GM, and if so, what percentage of the product was GM.

The word ‘organisms’ also on occasion raised an expectation that something had been ‘added’ to the food and was still detectable in some way – similar to the use of living ‘organisms’ or cultures in yogurt.

> “This says organisms... so is it living? I might want to know a little more about that.”
>
> [ABC1, 36-45, Male]

Although this label option did raise health and safety doubts for a core of the most concerned participants, there were typically fewer negative assumptions about products labelled in this way than for the other GM labels. This seemed to be due both to a sense that the label was too complex to understand – and thus too complex to worry about – and a general expectation that any negative effect of GM may be ‘diluted’ or absent if used in production only. However, it was raised at times that GM production may have some negative impact on product quality or taste.

Response to additional information

The confusion above was initially noted in the pilot phase of research; for the main stage research, additional information was developed to share with participants (see supplementary appendix). The additional information helped increase understanding about how GM is used in this way but there was still a degree of confusion and lack of understanding.

From the additional information, conclusions were sometimes drawn that products labelled in this way might signify some animal welfare benefit – that is, that producers had used GM rennet to avoid harming calves. Others expected that cheese using GM rennet might present a vegetarian alternative.

> "That actually sounds a lot better – especially for vegetarians, and obviously for the animal itself."
>
> [ABC1, 36-45, Female]

Perceived need for a GM in production label option

There was relatively low interest in this label option. Lack of understanding tended to reduce interest in the labelling of foods that used GM production. Once additional information was provided, this tended to alleviate any concerns – or, as above, produce some expectations of positive benefit.

Furthermore, a proportion of the sample actively preferred that GM production remain un-labelled. Typically low label users who already felt on-pack information to be overwhelming or too time-consuming to consult, these participants felt GM production labelling to be unnecessary. This response was compounded by the language used for the example tested; it was raised that this presented 'scientific detail' rather than useful consumer information.

> "I don't think they need to do that – it would be a waste of money for them."
>
> [C2DE, 36-45, Female]

However, as elsewhere in this research, a core of most concerned participants did express interest in GM production labelling – again, contending that consumers had a right to know regarding any use of GM in food. In addition, there were those that were 'unsure' if GM was still present in the product, and who reported would want to see it labelled.

> "It's the stuff of nightmares – I wouldn't buy it."
>
> [C2DE, 36+, Group]

> "There's got to be a difference, ok? And some people are quite delicate in their little insides and surely it must affect them, and they [should] have the choice then.
>
> [C2DE, 36-45, Female]

Response from Follow - Ups

Production was rarely raised without prompting in follow-up interviewing, suggesting this is lower priority overall for consumers. Responses expressed during initial research sessions were maintained during follow up interviewing.

3.1.6 Overall Response to GM Absent Labelling Options

Understanding and implications

Most of the GM absent label options tested with the sample were understood as offering similar (or identical) information – although participants felt that they differed in terms of tone and clarity.

There was an assumption across the sample that GM absent labelling signalled the *complete* absence of GM – including GM ingredients, animal products derived from GM feed or (in some cases) the use of GM processing. However, as participants were generally unaware of GM feed and GM processing, they tended not to make assumptions about these until provided with information about them.

> "They can't say it's [GM free, if it has used GM feed] – that would be false advertising."
>
> [C2DE, 18-25, Female]

Participants were also asked if they felt this label could be used in cases of *historical use* of GM feed – e.g., if the animal had been fed GM feed when younger, but this had stopped for some specified time prior to slaughter or prior to collection of milk or eggs. Participants tended to feel that this label would *not* be appropriate in such cases, and should only be used when animals had been fed no GM feed at any point in the life cycle. However, less concerned and more positive participants suggested that this could potentially be appropriate; for example, if the animal had been fed non-GM feed for the majority of its life.

> "No – it would need to be fool-proof. It would need to be all or nothing."
>
> [C2DE, 18-35, Group]

> "Whatever its natural life span is, as long as the majority of it's been free, it is free really isn't it?"
>
> [ABC1, 26-35, Male]

There were also indications that GM absent labels, when noticed by participants, may raise other assumptions about the food. For example, within discussion, GM absent labels created an assumption that these foods would not only be free of GM but would also be more 'natural' or of higher than standard quality – with participants drawing parallels with organic or other 'quality' labelling (for example, free range labels). These labels were viewed as reflecting positively on a brand and the producer's priorities, for example signalling that producers valued animal welfare and food quality.

> "If I saw 'non-GM' I would think it was more natural – natural and organic were the first things I thought of."
>
> [ABC1, 18-25, Female]

Need for labelling GM absent labelling

Overall, participants saw less of a need for these types of labels, and considered GM absent labelling to be a 'selling point' rather than providing important product information.

> "I think that would be more of a selling point from the maker of the product... could put it on there in order to sell more."
>
> [ABC1, 46-55, Male]

That said, those in the sample more interested in GM content welcomed the idea of 'absent' labelling to help avoid the purchase of foods containing GM, especially if many products were to be labelled GM and it might become more difficult to find those that are not.

Claimed impact of GM absent labelling options

The claimed impact of this label option varied according to existing consumer priorities. As expected, those in the most concerned sample segment indicated that they may use GM absent labels to avoid GM in food products, depending on price differences. However, others with a more general interest in food quality also indicated that they may be drawn to foods with GM absent

labelling. For example, they may potentially choose these over similar alternatives, or pay extra for 'GM free'-type products if their budgets allowed. Those participants not currently prioritising food quality over other food factors expected that GM absent labels would have little impact.

There were also indications from the sample that GM absent labelling may imply that foods not labelled in this way would contain GM,[66] for example, if a certain vegetable oil was labelled 'GM Free' then there would be an assumption that those not labelled would contain GM.

> "If it's not saying that it's GM free – therefore you would assume that there is GM products in it."
>
> [C2DE, 26-35, Female]

GM absent labelling could then cause confusion given participants' low understanding of current regulations, as shoppers might look for 'GM free'-type labels on products which are not legally eligible for them. For instance, participants noted that if 'GM-free'-type labelling became more common, they might look for these labels on high-concern foods such as animal products. However, animal products are currently not eligible for 'GM free' labelling given this could incorrectly imply the availability of genetically modified meat in the UK food market. Given low consumer understanding of current regulations, unlabelled meat products might be misunderstood as containing GM.

> "If I saw [GM absent labelling], I would think, 'Oh, so something or other must be GM.' Is there a way to flag that up, that maybe some products just aren't genetically modified? If they were to put that on chickens: 'No chickens are genetically modified.'"
>
> [ABC1, 18-25, Male]

3.1.7 Response to Tested GM Absent Labels

[66] As noted in Sheldon et al. 2009.

Participants discussed five options for labelling absence of GM. More detail on responses to each individual label is discussed below:

(a) 'GM Free'

Understanding and implications

As well as being clearly understood, the short, straightforward nature of this label option was seen as a positive by participants – although concerns were raised that as it is a relatively short phrase it may be difficult to see on-pack if not highlighted via a standout logo.

Of all GM absent label options, 'GM Free' most strongly suggested 100% without GM.

> "This means 100% everything, including feed... I would assume that this would be a nice, just a very simple guarantee that, 'Right, that's it, there is nothing in here that's GM.'
>
> [ABC1, 36+, Group]

Participants also reported that the use of the word 'free' in this label resonated with a range of 'healthy' label options – for example, 'free from,' 'fat free' and so on. It was also raised in discussion that products labelled in this way could be better for you (more nutritious or higher quality), tastier, more natural and/or fresher than other products on the market. Similar to organic labelling, there were expectations that 'GM free' products were somehow 'more natural'.

> "The term free just sounds nicer – and it makes you feel happier... you think of all them hippies running through a field, free and happy."
>
> [ABC1, 18-35, Group]

> "I think by saying GM-free... I mean I'm going back two years, when we had some colourant-free or things like that: it was perceived to be something better than not, so my perception would be it would be a plus point rather than a negative."
>
> [ABC1, 36+, Group]

> "Well, the word 'free is'... I pay attention to things like free from additives and free range and stuff like that."
>
> [C2DE, 18-35, Group]

> "It's 100% natural – not been tampered with – No additives, better for you, fresher, natural."
>
> [ABC1, 18-25, Group]

However, there were also other responses from more informed participants, who expected that products labelled in this way would be similar to standard quality.

Perceived need for 'GM Free' label

Of the GM absent labelling options tested, it was considered that this label would provide an easy short cut for those wishing to avoid foods with GM in them- either via GM ingredients, processing or feed.

(b) 'All ingredients are non-GM'

Understanding and implications

This label option was largely considered by the sample to be clear and straightforward. Although longer in length, reference to 'ingredients' in this option was typically considered to offer specific and understandable information, which was somewhat appreciated by participants. It was also typically perceived as a more 'factual' statement rather than a 'brand selling point.'

> "It's because it's got the word 'ingredients in it'... it looks more formal than what the other did."
>
> [C2DE, 18-35, Group]

> "Some of the other labels give you that clouded... smoke screen, whereas here... all the cards are on the table."
>
> [ABC1, 18-25, Group]

Participant's understanding of the implications of this label option were somewhat mixed regarding the inclusion of GM feed or GM processing. Without prior knowledge of GM feed or production, it was understood that this label signified that no GM had been used at all. Once GM feed was known about, then it was questioned whether this was included or not under this label.

> "There's no way of you slipping anything in if it says that."
> [C2DE, 36+, Group]

> "I would assume from that that I could not assume that the cow has not been fed GM. That doesn't convince me as much."
> [ABC1, 46-55, Female]

In comparison with 'GM Free', the more formal tone of this option tended to result in lower expectations overall regarding higher than standard quality or positive health benefits.

Perceived need for 'All ingredients are non-GM' label

For those seeking an easy way to determine GM content in food – and particularly for those seeking to avoid purchasing foods containing GM –this label was considered potentially helpful as per 'GM Free'.

(c) 'Non-GM'

Understanding and implications

Overall, participants understood this label option to mean the same as 'GM-Free'; that is, that there is no GM present in the product.

However, 'Non-GM' as a standalone phrase felt less intuitive overall and was on occasion harder for participants to work out in contrast to 'GM-Free'. In addition, the lack of the term 'free' meant it had less stand out and meaning for participants.

> "It doesn't make sense... non-genetically-modified... it should be NOT GM shouldn't it? It sounds more like an abbreviation..."
> [ABC1, 36+, Group]

Although, as per other absent labels, it was raised that foods labelled in this way would be 'healthier', participants also reported negative connotations for this label option.

> "There's no positive, is there... with GM-free ...it's a positive statement, where non-GM, it's a bit of a negative before you've even begun."

[ABC1, 36-46, Female]

For example, resonance with labels such as 'non fat' led to queries whether foods labelled 'Non-GM' may have less or poorer taste overall. Others felt that the label implied that something useful had potentially been taken out of the food, such as an additive, leading to concerns that the product would have a poorer shelf life.

Perceived need for 'Non-GM' label

Interest in this labelling option was low; 'GM Free' and 'All ingredients are non-GM' were considered more effective in conveying GM absence.

(d) 'Produced with non-GM ingredients'

Understanding and implications

Although participants typically understood this label option as offering similar information as other GM absent options, it was raised that this was less clear than other labels. The word 'produced' coupled with 'Non-GM' meant that participants were not always clear whether foods displaying this label option may still contain GM in some way. This was at times interpreted as indicating that GM could still be present – for example, that no GM production methods had been used but that the food itself could still contain GM ingredients. Alternatively, other participants suggested that perhaps the food contained *only some* non-GM ingredients.

> "I don't know if that's the case, but I would think that if it's produced with non-GM ingredients, they couldn't have fed the animals with GM feed."
>
> [ABC1, 46-55, Male]

> "It can be a bit long-winded – couldn't it just say GM-free?"
>
> [ABC1, 18-35, Group]

> "It's trying to tell you that there's none in there – but in your head you're thinking there might be."
>
> [ABC1, 18-25, Group]

> "It could be two ingredients out of ten that are non-GM and you could still say it was produced with non-GM ingredients."
>
> [C2DE, 46-55, Group]

This label raised little participant expectation of benefit and fewer assumptions overall regarding product quality or taste.

Perceived need for 'Produced with non-GM ingredients' label

Due to lack of clarity compared to other labelling options, participants tended to express lower interest in this labelling option.

(e) 'From animals fed non-GM feed'

Understanding and implications

As per the 'From animals fed GM feed' label, this labelling option typically presented a new issue for participant consideration when seen for the first time. However, given that this suggests that GM feed is not present, this label raised fewer questions and concerns overall.

Consistent with responses to other GM absent labelling, participants tended to assume that this label indicated the product was in some way 'higher quality', or more 'natural.' This perception was typically raised in the context of animal feed issues – potentially due to higher concerns about quality with regard to animal products, as previously discussed (Section 1.1.2). There was evidence of some alignment of products labelled in this way with 'organic' or other 'healthier' products, with participants at times assuming that animals had been 'grass fed' or better treated.

> "It would mean that the pig has been fed – I don't know – lovely dinners and had lovely grass and has been well looked after and had a very natural habitat... going back to organic... he was nurtured, he was looked after, he was fed lovely food and it's all natural."
>
> [ABC1, 36-45, Female]

An expectation of a difference in taste was also raised on occasion, as participants drew parallels with experienced taste differences between eggs from caged or free-range hens.

> "It means that the animals you're eating haven't been fed on anything harmful – and I think that's the same when you buy organic meat – because you don't want all those chemicals to be thrown in their feed, like steroids and all that."
>
> [C2DE, 26+, Group]

Likewise, participants typically reported that they might make positive assumptions about brands and food producers if viewing this type of label – assuming that they prioritised animal welfare issues and could be 'higher quality' producers.

> "I would almost think it's the better of the products – 'Oh, that's an added bonus."
>
> [ABC1, 18-25, Male]

However, other participants understood that it indicated only that the product did not contain any products from animals fed with GM feed, rather than providing any additional information about animal welfare, feed or meat quality.

> "It wouldn't make a difference because there's so many other horrible practices with the raising of meat and chickens and vegetables that I would, you know; I don't think that eating a GM-fed thing, it might be healthier for me so I'm not going to just discount GM-fed food."
>
> [ABC1, 46-55, Male]

Perceived need for label

Although participants indicated no pre-existing need for this label at present, once informed of the GM feed issue there was a perception that this could be a helpful label option, for those wishing to avoid it.

However, there were indications within the sample for information about GM feed to be communicated via a more inclusive 'GM Free'-type label rather than specified separately. This was expected to make it easier for concerned participants to identify preferred products, rather than searching for ingredient and feed information separately.

Response from Follow –Ups

The 'GM Free' labelling option was mentioned without prompting amongst the follow ups, as was 'All ingredients are Non-GM' – with participants expressing positivity towards both options, although 'GM-Free' seemed to have the most standout and recall overall. It was also reiterated that 'Non GM' was less straightforward and that 'Produced with non-GM ingredients' was more confusing overall.

4. Claimed Impact of Costs on Consumer Requirements[67]

After the participants had discussed labelling options, the sample were provided with information outlining the cost implications of GM labelling to industry and manufacturing (see supplementary appendix) in order to understand if this information had any reported impact in terms of what they considered important to label.

Despite the information being provided and the moderator explaining what this information meant as required, participants typically found it difficult to understand the cost implications for manufacturers in introducing a new labelling system. Rather, they typically considered changing labels would not be *that* costly to achieve, or suggested that government could simply restructure its spending priorities as necessary. Overall, providing the sample with cost information had fairly low impact on what was considered important to label and it was generally considered that costs to regulators or manufacturers should not be used as a reason to not label. Further it was generally suggested that although labelling should be provided, any costs of labelling should not be passed on to the consumer.

[67] It should be noted that the research aimed to provide a balance of information that was useful but not overwhelming within the research. Whilst increased food costs were discussed in relation to this information, this research did not for example, provide participants with examples of how much a product may go up in cost if it was to be labelled with GM information. There are therefore some limitations as to what this research can indicate in terms of response to costs and need for labelling.

> "If the City Council stopped digging up roads and putting in unnecessary street furniture, they could pay for all of this for the whole of the UK. [Costs] positively should not be part of it."
>
> [ABC1, 56-65, Male]

The cost information provided also raised negativity and frustration at times. Firstly around raised product prices – for example, that they should have to pay more to get 'GM-free' products which they thought they were already buying. Secondly, due to a perception that 'costs' were being used as a rationale to not introduce labelling or to circumvent consumer 'right to know'.

> "It's well established isn't it... it's been for about 15 years now [that GM feed has been used]... I think it's unfair to put the cost on the consumer."
>
> [C2DE, 36+, Group]

For those that understood that product costs may increase, there was a split in opinion in terms of how this impacted on the decision to label. There were claims from certain participants – typically those most concerned about GM – that it was still important to label the products and that they would pay more to avoid GM content in foods.

> "They're going to have to introduce it, but we've happily said that we – that for those concerned – we'd pay more anyway."
>
> [ABC1, 18-35, Group]

However, some other participants who understood the likely product cost implications of labelling thought that labelling was not worth increased consumer costs.. This was in particular for labels related to GMO used in production, and also regarding GM feed. This was more likely to be true for participants whom did not hold strongly negative views on GM and were not prioritising food quality issues currently, or for participants prioritising price over other purchasing factors. This tended to be, but was not limited to, lower SEG research participants.

> "If it was going to drive up prices I definitely wouldn't be in favour of it."

[ABC1, 26-35, Female]

> "You think – is it really worth spending all that? Because it will cost, you know, millions of pounds surely to get all the packaging restructured..."
> [ABC1, 18-35, Group]

5. Information Needs

5.1 Perceived Information Needs

Information about GM foods was requested by participants and also welcomed when provided during research, particularly when the labels options were viewed and discussed. Once prompted to consider GM, participants were largely easy to engage on the issue and found the topic of GM food to be of interest.[68]

There was a common perception – except among those that had taken a specialist interest in GM and technology issues – that there was limited information about GM technology being 'pushed' in the public domain (for example, in popular television and print media). It was raised that if new labels were introduced, then further information should be available to help them make informed decisions about food choice. This research indicates that this could help to reduce any concerns that they may have.

> "I know I came in here thinking that there was an association that GM was like a lower grade of product, but now I wouldn't make that assumption anymore; I wouldn't think, 'Oh, that's probably a cheap product,' or whatever."
> [ABC1, 18-25, Male]

However, the degree of interest in additional information within the sample was largely dependent on the level of concern about GM foods and participants' existing engagement with food labelling. Those most concerned about health issues were more likely to search for information and advice on

[68] As found in Sciencewise 2011.

the topic independently compared to those less concerned, who are unlikely to be proactive in searching for information on this subject. Overall, only a few participants took away the additional information made available during the research process.

> "No, I don't think that people need more information. If they go into too much detail, I don't think we'd eat anything!"
>
> [C2DE, 36-45, Female]

Response from Follow –Ups

Despite indicating interest in research sessions, only limited numbers of participants reported having sought further information about GM.

5.2 Information Content Requirements

A number of different areas of content were raised as being helpful to know more about. These included: a simple definition explaining what GM foods are; details of how and why GM is used in food; information about health risks; and potential benefits and drawbacks of the technology.

Primarily, a simple explanation of what GM foods are was considered important to help participants define and understand the technology. Ideally, this would include facts to dispel and address commonly held misunderstandings amongst consumers about GM content in food, such as the idea that GM feed is used to alter animals, or that GM represents a chemical additive to foods.

> "Information to get people to know what it actually does... rather than anything else people understand that it is. Before I came here, I thought it was chemicals going over food and stuff and now I realise it isn't."
>
> [C2DE, 46-55,Group]

Participants also indicated interest in additional information describing how and why GM is currently used. This contextual detail may help to legitimise the use of GM in some cases and alleviate concerns for participants. For

example, the issue of GM feed was typically new to participants and therefore they had many questions as to reasons why this would be used and the potential impact this might have. As discussed,[69]explaining that GM feed does not differ from non-GM equivalents and providing a 'reason for use' could alleviate any initial negativity.

The sample was also interested in information about potential health risks, to both humans and animals, and any evidence regarding known impact. Typically, reassurance that no significant impact on human health had been discovered was not considered sufficient; participants indicated that they wanted more detailed description of current evidence and research in the area.

> "Well I don't know if there are any health implications and what they are, so at the moment it just seems that there probably is and they're covering their backs."
>
> [ABC1, 36-45, Female]

> "Information about what research they've done into effects."
>
> [ABC1, 36+, Group]

Finally, a list of benefits and drawbacks of GM foods was also suggested as helpful by the sample. As noted previously, the information provided in this research included a balanced summary of potential benefits and drawbacks of GM (see supplementary appendix), and was received positively by participants. Participants perceived this list as fairly neutral, allowing them to weigh the evidence and form their own opinions.

> "If [information] was like unbiased...you can't just have them saying which is better; you need to make that decision for yourself."
>
> [C2DE, 18-35, Group]

[69]See supplementary appendix for more information.

5.3 Information Channels and Sources

Channels

Participants suggested a range of channels and welcomed opportunities to access further information about GM.

For proactive participants, searching on-line was likely to be the main approach. For example, participants would simply search for 'GM,' 'GM foods' or 'GM health and safety'.

> "I think if I looked or I heard something about it, my reaction would be to Google it."
>
> [C2DE, 18-35, Group]

There was also a degree of interest in information being made available in supermarkets. Expectations in terms of how this would work were around leaflets or posters being made available that would highlight key information of interest (as discussed in Section 5.2).

> "Well how about leaflets in stores? You know, just have a leaflet stand for GM foods there."
>
> [C2DE, 36+, Group]

Source

Previous research suggests that consumers find it difficult to identify appropriate providers of trusted, neutral information about GM foods.[70]Although not tested extensively in this research, there were indications that the FSA were welcomed as a potential source of additional information.

[70]e.g. Sheldon et al. 2009.

Mention of the FSA was fairly low and at present this was not a top of mind source for participants; however, once prompted participants expected the FSA to be independent, offering objective and factual information. This compared to perceptions of large food manufacturers and brands, which participants typically expected may be more biased about the type of information they gave to consumers.

> "The FSA look after peoples' welfare so they'd have good and bad information... none of that bias, you know, like the manufacturer or retailer."
>
> [ABC1, 18-35, Group]

There were expectations that FSA may provide information via their website (which would potentially require signposting to prompt visit) or as a provider of information to be distributed via other sources, for example websites.

Supermarkets themselves were also raised as a channel to impart this type of information – typically representing a more trusted body than food producers themselves. Participants also felt that they may take more notice of information provided in the shopping environment.

However, participants expected that ideally information would be provided via an independent body and then distributed via this channel, rather than having information created by supermarkets themselves.

VI Detailed Quantitative Findings

Detailed below are the key findings from the omnibus study. The findings are discussed and tables are used to show the relevant data[71] [72]. For more information on the methodology used please see 'method and sample'.

1. Awareness and Knowledge of GM

1.1 Awareness of GM

Respondents were asked if they had ever heard of the use of genetic modification (or GM) in food or food production. Nearly three-quarters (74%) of respondents claimed they had heard of the use of genetic modification in food or food production before the research interview.

When examining results by demographic groups, GM awareness by age and social class showed some differences:

- 16-24 year olds were significantly less likely to have heard of the use of genetic modification (or GM) in food or food production compared to their older counterparts (aged 25 years or older).

[71] Within the tables net figures are shown. A net figure is calculated by adding the percentage results together for two findings. This tool is used to help summarise research findings for example by grouping all positive findings together or all negative findings together. Netting of survey results is also used to group information types together, for example 'net mentions of nutritional information'. Where net results are used these have been noted.

[72] The age of respondents are grouped into ten year age bands in the data tables, i.e. 16-24;25-34;35-44;45-54;55-64;65+. In this report, however, there are also instances where there is grouped reporting of ages, e.g. 45-64 years. These are net figures and were done when significantly different figures were typically not seen for 10 year age bands separately or significant differences were seen for larger groups of ages. Similarly the Social Economic Grade (SEG) findings are also reported in two ways; either by single SEGs, i.e. AB; C1;C2;DE or by groupings, i.e. ABC1; C2DE. Where the SEG findings have been grouped these are net figures, as significantly different figures were typically not seen for single SEGs separately or were seen across larger groups of SEG.

- Those aged 45-64 years[73] were significantly more likely than some other age groups to be have heard of the use of GM in food or food production.
- SEG[74] ABC1 were significantly more likely to have heard of the use of GM compared to C2DE. Specifically, SEG DE were least likely to have heard of the use of GM.

Table 1 below shows the level of GM awareness amongst different age groups and social classes. There were no significant differences in GM awareness between those who had children and those without children and male respondents versus female respondents, therefore these results are not shown.

[73] Some of the significant differences discussed in the report have been calculated separately in addition to those shown in the data tables.
[74]SEG refers to Social Economic Grade as used in the qualitative sample. SEG is a way of classifying the general population in terms of occupational status. See supplementary appendix for further details of how SEG was worked out for this project as well as reasons for use.

Table 1
Proportion who have ever heard of the use of genetic modification in food or food production

Age							
	Total	16-24	25-34	35-44	45-54	55-64	65+
Un-weighted base	*1467*	*191*	*247*	*248*	*213*	*193*	*375*
Weighted base	*1467*	*215*	*261*	*260*	*250*	*205*	*276*
Proportion Aware	74%	57%*	72%	78%	83%**	89%***	68%
SEG							
	Total	AB	C1	C2	DE	ABC1	C2DE
Un-weighted base	*1467*	*221*	*340*	*313*	*593*	*561*	*906*
Weighted base	*1467*	*286*	*461*	*302*	*418*	*746*	*721*
Proportion Aware	74%	90%*	84%*	67%**	59%	86%*	62%

Base: All adults. N=1467(weighted and unweighted base)

Age

**denotes a statistically significant lower result than all other ages*

*** denotes a statistically significant higher result than 16-24, 25-34, 65+*

****denotes a statistically significant higher result than 16-24, 25-34, 35-54, 65+*

SEG

**denotes a statistically higher result than C2 and DE*

*** denotes a statistically higher result than DE*

There was also some country and regional variation in GM awareness, as shown in Table 2 below.

Specifically:

- Awareness in England and Wales was significantly higher than in Northern Ireland

- Awareness in the North West and the South West[75] (83% for each), were significantly higher than the national awareness figure of 74%.

Table 2

Proportion who have ever heard of the use of genetic modification in food or food production by country

		Country			
	Total	England	Scotland	Wales	Northern Ireland
Un-weighted base	*1467*	*870*	*200*	*221*	*176*
Weighted base	*1467*	*1218*	*132*	*73*	*44*
Proportion Aware	74%	75%	70%	76%	65%*

Base: All adults. N=1467(weighted and unweighted base)
**denotes a statistically significant lower result than England and Wales*

1.2 Knowledge of Use of GM in Food and Food Production

Respondents, who have ever heard of the use of GM in food or food production or don't know[76]were asked how knowledgeable they felt about the use of genetic modification in food or food production. Claimed knowledge was measured via a range of responses, i.e. a good knowledge, a reasonable basic knowledge, a little but patchy knowledge or know very little or nothing.

As found in the qualitative phase, 'good' knowledge levels were relatively low for this sample, with just under one-tenth (8%) claiming 'good knowledge'. A further 31% claimed they were reasonably knowledgeable about the use of GM in food or food production. 60% said that they knew 'a little' or 'very little or nothing' about GM in food or food production. This is shown in Table 3.

[75]Numbers here are at 112 (North West) and 84 respondents (South West).
[76]This group of respondents are referenced throughout the subsequent sections. This base refers to those that claimed they had heard of the use of genetic modification (or GM) in food or food production or that they didn't know. This is also referred to as those 'who had heard of the use of GM'.

Table 3

Proportion by level of knowledge about the use of genetic modification (GM) in food or food production

Level of knowledge	Proportion
I know very little or nothing	28%
I know a little about it but my knowledge is very patchy	32%
Little knowledge (net)[77]	**60%**
I have a reasonable, basic knowledge	31%
I have a good knowledge	8%
Good/ reasonable knowledge (net)[78]	**38%**
Don't know	2%

Base: All who have ever heard of the use of genetic modification in food or food production or don't know. N=1111 (weighted base)

Some differences between demographic groups were found amongst those who had heard of the use of GM where the following groups had the least knowledge, demonstrated by lower levels of good or reasonable knowledge:

- Of those aged over 64 years, 31% claimed they had a 'good' or 'reasonable, basic' knowledge. This was significantly below those aged 45-64 years (42% for 45-54 years and 48% for 55-64 years).
- 28% of those from social classes DE, claimed to have a 'good' or 'reasonable, basic' knowledge. This was significantly below all other social class groups (AB: 42%, C1:39% and C2:45%).
- 32% of those with children[79] claimed they had a 'good' or 'reasonable, basic' knowledge compared with those without children (41%).
- 19% of respondents from Scotland reported having a 'good' or 'reasonable, basic' knowledge. This was significantly below those in England (41%) and Wales (35%).

[77] The figure for 'Little knowledge' (net) is the total of the 'I know very little or nothing' and 'I know a little but my knowledge is patchy' answers.
[78]The figure for 'Good/reasonable knowledge' (net) is the total of the 'I have reasonable, basic knowledge' and 'I have good knowledge' answers.
[79] This is a net figure of those with all ages of children

1.3 Involvement with GM

Respondents who have ever heard of the use of GM in food or food production or don't know were asked if they had talked to anyone about the use of GM in food or food production. They were also asked if they had searched for information about GM in food and food production and how frequently they did so. Levels of frequency were measured using the following scale: Frequently, occasionally, only once or twice or never.

Around a third (35%) reported to have talked about GM with others 'at all'[80] and just under a quarter (23%) claimed to have searched for information about it 'at all'. Only a minority of these actions were reported to be regular however, where 5% claimed they frequently talked about GM and 4% claiming they frequently searched for GM information.

This is shown in Table 4 below:

[80] 'At all' refers to those that have either talked about GM or searched for information (as indicated) frequently, occasionally or only once or twice.

Table 4

Proportion showing involvement in GM in food or food production

	Talked with anyone about the use of genetic modification or GM, in food or food production	Searched for information about genetic modification, or GM, in food or food production (all GM aware)
Yes – frequently	5%	4%
Yes – occasionally	17%	11%
Yes – only once or twice	14%	8%
No, never	63%	76%
Don't know	1%	1%
Yes (net)[81]	**35%**	**23%**
Frequently/ occasionally (net)[82]	**21%**	**15%**
Infrequent/ never (net)[83]	**77%**	**84%**

Base: All who have ever heard of the use of genetic modification in food or food production or don't know. N=1111 (weighted base)

Amongst those who had heard of the use of GM, men were significantly more likely than women to claim to have discussed GM 'at all' (39% versus 31%), as were social grades ABC1 (41%) compared to C2DE (27%).

The youngest age group (16-24 years) were the most likely to search for information 'at all' (37%) compared to other age groups, although this was only significantly higher than 35-44 year olds (22%), 55-64 year olds (23%) and 65+ year olds (10%).

Additionally those who reported to know more about the use of GM[84] were significantly more likely to have talked to anyone about GM or searched for

[81]The figure for 'Yes (net)' is the total of 'Yes- frequently', 'Yes – occasionally' and 'Yes- only once or twice' answers.
[82] The figure for 'Frequently/occasionally' (net) is a combination of 'Yes-frequently' and 'Yes – occasionally' answers.
[83] The figure for 'Infrequent/Never' net is a total of 'Yes – only once or twice' and 'No, never' answers.
[84] Those who knew more about GM are respondents who had heard of use of GM in food or food production and also have a good or reasonable, basic knowledge of it.

information about GM than those who had little or no knowledge[85] within this sample:

- 54% of question respondents that have 'good' or 'reasonable, basic' knowledge reported that they had talked with anyone 'at all' about the use of GM. While 24% of those who had 'little' or 'no knowledge' had talked to anyone about GM 'at all'.
- 40% of question respondents that reported 'good' or 'reasonable, basic' knowledge claimed that they had searched for information about GM 'at all'. While 12% of those who had 'little' or 'no knowledge' had searched for information about GM 'at all'.

2. Current Labelling Behaviour (including use of GM labelling)

All respondents (regardless of whether have ever heard of the use of GM or don't know) were asked about the types of information they usually look for when purchasing food for the first time. Spontaneous answers are provided below in Table 5.

The quantitative findings show that in terms of the information that these respondents usually look for, information about GM content was only spontaneously mentioned by 2% of the sample.

Besides the most looked for information of price (37%), the most popular information looked for was nutritional information (a net of 37%) with fat and sugar being the most mentioned.

[85] Those that know little or nothing about GM were those respondents who had heard of use of GM in food or food production and also 'know very little or nothing' or 'know a little about it but their knowledge is patchy'. It excludes those that stated 'don't know'.

Table 5

Proportion spontaneously mentioning specific information looked for when purchasing food for the first time

Type of Information	Proportion
Nutritional information	
The amount of fat	25%
The amount of sugar	19%
The amount of salt	17%
Calories	12%
The amount of saturated fat	10%
The amount of carbohydrates	6%
The amount of protein	5%
Nutritional information (net)	***37%***
Information about ingredients	
List of ingredients	12%
Additives	8%
Allergy information	3%
Suitable for vegetarian/ vegan diet	2%
Information about GM content	2%
Organic labelling	2%
Information about ingredients (net)	***22%***
Nutrition or ingredients (net)	***49%***
General information	
Price	37%
Best before/ use by date	19%
Country of origin	7%
Animal welfare/ free range	6%
Name of food/ brand	6%
Cooking/ storage instructions	5%
Health claims	4%
Fair trade	3%
General information (net)	**52%**
Any information (net)	***76%***
Nothing	***1%***
Don't know	***23%***

Base: All adults. N=1467(weighted and unweighted base)
All other answers 1% or less not shown

Given the low number of respondents spontaneously reporting to look for information about GM content when purchasing food for the first time (N= 27),

it is not possible to robustly comment on which demographic groups were most likely to look at this information.

In addition to asking respondents about the information they looked for spontaneously, they were also provided with a list of example information found on food labels and asked which were most important to them. Respondents could choose up to three pieces of information that they considered important. The first, second (including first mentions) and all mentions are shown in Table 6 below.

When examining results by 'all mentions' (that is, mentioned either first, second or third) very clearly, price (60%) best before/use by dates (51%) and nutritional information (30%) were the most important to respondents.

Differences by social class for important information mentioned were:

- Nutritional information was mentioned most by ABC1 respondents at 35% significantly higher than 24% of C2DE respondents.
- Calorie information was mentioned most by ABC1 respondents at 23% significantly higher than 14% of C2DE.

Information about GM content was amongst the lowest priority with 4% choosing it as a top three important piece of information. Again, given the low number of respondents (N=57), for whom information about GM was important, demographic differences are difficult to detect.

Table 6

Proportion selecting specific information found on food labels 1st, 1st/2nd and all mentions

Information found on food labels	1st mentions	1st/ 2nd mentions	All mentions
Price	35%	52%	60%
Best before/ use by date	17%	35%	51%
Nutritional information	19%	25%	30%
List of ingredients	6%	13%	21%
Calories	5%	14%	19%
Cooking/ storage instructions	4%	9%	14%
Country of origin	2%	7%	11%
Name of food/ brand	2%	5%	11%
Animal welfare/ free range	2%	5%	10%
Information about genetic modification	**1%**	**2%**	**4%**
Organic labelling	1%	3%	4%
Something else	1%	1%	1%
Don't know	7%	7%	7%

Base: All adults. N=1467(weighted and unweighted base)

3. Understanding of GM

Respondents who had ever heard of the use of GM or don't know were shown a range of statements about availability of GM foods and were asked to what extent they thought each were true or false. As in the qualitative research, there were mixed views about what was available or not.

There was some belief that, in the UK, GM foods are widely on sale (54%)[86], currently being grown (66%) and used for animal feed (54%). However, as found in the qualitative phase, for all these statements there was also a large degree of uncertainty, with those unable to express an opinion ranging from 28% to 40% across the statements tested. As this data is based around those who claim to have heard of the use of GM, the degree of uncertainty

[86]Figures in this section related to 'true' are net figures i.e. the total of definitely true and probably true answers.

amongst the general population maybe even higher. Details of the numbers are shown in Table 7 below.

Table 7

Proportion of respondents thinking a statement about GM is true or false

	GM foods are widely on sale in the UK	GM crops are currently being grown by farmers in the UK	Farmers in the UK use animal feed that contains ingredients from GM plants
Definitely true	17%	26%	13%
Probably true	38%	41%	41%
True (net)[87]	**54%**	**66%**	**54%**
Not sure	31%	28%	40%
Probably false	11%	5%	5%
Definitely false	4%	1%	1%
False (net)[88]	**15%**	**6%**	**6%**

Base: All who have ever heard of the use of genetic modification in food or food production or don't know. N=1111 (weighted base)

There was a significant difference by gender where 71% of males who had heard of the use of GM believed it true that GM crops are currently being grown by farmers in the UK compared with 62% of females who believe this is true.

There were some significant differences by age and social class in levels of belief for these statements for this sample:

- 65% of 16-34 year olds believed that the statement 'GM foods are widely on sale in the UK' is true. This is compared to 54% of 35-64 year olds.

[87]The figure for 'True' (net) is the total of the definitely true and probably true answers.
[88] The figure for 'False' (net) is the total of the probably false and definitely false answers.

- In contrast 59% of 16-34 year olds thought that the statement 'GM crops are currently being grown by farmers in the UK' is true. This is compared to 69% of 35-64 year olds who thought this.
- 69% of those from social grades ABC1 were also more likely to think the statement 'GM crops are currently being grown by farmers in the UK' is true. This is compared to 61% of those from social grades DE.

4. GM Labelling

4.1 Importance of Specific GM Present and Absent Labels

In order to understand what types of GM present information or labelling were considered important, respondents who had heard of the use of GM were asked how important it was that it was written on the label if a) 'The food itself is from a genetically modified plant', b) 'One or more ingredients in the food are from a genetically modified plant' and c) 'The food product is from animals that have been fed genetically modified plants'.

Around two in three of those who had heard of the use of GM agreed that they thought it important (very or quite) that each scenario was written on the label:

- 68% thought it was important (very or quite) that it is written on the label if 'The food itself is from a genetically modified plant'
- 67% thought it was important (very or quite) that it is written on the label if 'One or more ingredients in the food are from a genetically modified plant'
- 67% thought it was important (very or quite) that it is written on the label if 'The food product (e.g. meat, milk, eggs) is from animals that have been fed genetically modified plants'

For all statements above, 12% thought it was not important.

It is interesting to note that where the genetically modified product enters the food chain makes no difference in the level of importance. Whether the produce being directly consumed is genetically modified, if it forms part of the

ingredients or whether the food product is from animals that have been fed genetically modified plants is no different in the eyes of consumers surveyed aware of GM in food or food production. Table 8 below shows the spread of responses.

Table 8
Proportion by level of importance of each type of information being written on a label

	The food itself is from a genetically modified plant	One or more ingredients in the food are from a genetically modified plant	The food product, e.g. meat, milk, eggs, is from animals that have been fed genetically modified plants
Very important	41%	39%	40%
Quite important	27%	28%	27%
Important (very/ quite) – (net)[89]	**68%**	**67%**	**67%**
I have no feelings either way	20%	21%	21%
Not very important	8%	8%	8%
Not at all important	4%	4%	4%
Not important (not very/ not at all) – (net)[90]	**12%**	**12%**	**12%**

Base: All who have ever heard of the use of genetic modification in food or food production, or don't know. N=1111 (weighted base)

Although the qualitative research noted that knowledge was not always an indication of interest in different types of GM labelling, within the quantitative research, knowledge of GM appeared to be a potential contributing factor for this sample:

- 77% of those who claimed 'good' or 'reasonable, basic' knowledge of GM thought it was important (very or quite) that it is written on the label if 'The

[89] The figure for 'important' (net) is the total of very and quite important answers.
[90] The figure for 'not important' (net) is the total of not very and not at all important answers.

food itself is from a genetically modified plant' (significantly higher than 64% of those who had little or no knowledge and thought it important)

- 76% of those who claimed 'good' or 'reasonable, basic' knowledge of GM thought it was important (very or quite) that it is written on the label if 'One or more ingredients in the food are from a genetically modified plant' (significantly higher than 63% of those who had little or no knowledge and thought it important)
- 76% of those who claimed 'good or reasonable, basic' knowledge of GM thought it was important (very or quite) that it is written on the label if 'The food product, e.g. meat, milk, eggs, is from animals that have been fed genetically modified plants' (significantly higher than 63% of those who had little or no knowledge and thought it important).

There were also some differences in terms of whether each scenario was important (very or quite) to be written on the label by demographic groups and country amongst those who had heard of the use of GM:

- 70% of those aged 35-64 considered it important that it is written on the label if 'One or more ingredients are from a genetically modified plant'. This was significantly higher than 62% of 16-34 year olds who considered it important. This is shown in Table 9 below.

Table 9

Proportion of those that consider it important (very or quite) of each type of information being written on a label by age

	All heard of use of GM or don't know	16-34 years	35-64 years
Un-weighted base	*1050*	*274*	*528*
Weighted base	*1111*	*318*	*596*
The food itself is from a genetically modified plant	68%	65%	70%
One or more ingredients in the food are from a genetically modified plant	67%	62%	70%*
The food product, e.g. meat, milk, eggs, is from animals that have been fed genetically modified plants	67%	65%	70%

Base: All who have ever heard of the use of genetic modification in food or food production, or don't know. N=1111 (weighted base)

**denotes a significantly higher result than corresponding 16-34 years*

- In terms of differences by country, respondents from Northern Ireland considered it important to be written on the label to a greater extent compared to other countries with 81% claiming it was important (very or quite) to label if the food itself was 'From a genetically modified plant'. 69% of respondents in England also claimed it was important. Respondents in Northern Ireland and England were significantly more likely to say it was important than the 55% of respondents in Scotland. This is shown in Table 10 below.

Table 10

Proportion of those that consider it important (very or quite) of each type of information being written on a label by country

	All heard of use of GM or don't know	England	Scotland	Wales	Northern Ireland
Un-weighted base	*1050*	*644*	*131*	*167*	*108*
Weighted base	*1111*	*931*	*93*	*58*	*29*
The food itself is from a genetically modified plant	68%	69%*	55%	65%	81%**
One or more ingredients in the food are from a genetically modified plant	67%	68%*	57%	66%	76%*
The food product, e.g. meat, milk, eggs, is from animals that have been fed genetically modified plants	67%	68%*	54%	64%	76%***

Base: All who have ever heard of the use of genetic modification in food or food production, or don't know. N=1111 (weighted base)

** Denotes significantly higher result than Scotland*

*** Denotes significantly higher result than all other countries*

**** Denotes significantly higher result than Scotland and Wales*

There were no significant differences in opinion by SEG when looking at net importance.

4.2 GM Absent Expectations

Respondents who had ever heard of the use of GM in food or food production or don't know were asked to consider how important certain criteria were if a food was described as 'GM Free' or 'Free from GM'. Around two in three perceived the following criteria as very or quite important:

- 68% claimed it very or quite important that 'The food contains no traces of GM ingredients, even at very low levels'
- 69% claimed it very or quite important that 'It contains no ingredients from GM plants'
- 69% claimed it very or quite important that 'For items like meat, milk, or eggs, the food is from animals that have not been fed GM plants'

For all statements above, 12% thought it was not important.

The spread of responses are shown in Table 11 below.

Table 11

Level of importance of each criterion *if product labelled 'GM Free' or 'Free from GM'*

	The food contains no traces of GM ingredients even at very low levels	The food contains no ingredients from GM plants	For items like meat, milk or eggs, the food is from animals that have not been fed GM plants
Very important	45%	49%	47%
Quite important	23%	20%	23%
Important (very/ quite)–(net)[91]	**68%**	**69%**	**69%**
I have no feelings either way	20%	19%	19%
Not very important	7%	8%	8%
Not at all important	4%	4%	4%
Not important (not very/ not at all)–(net)[92]	**12%**	**12%**	**12%**

Base: All who have ever heard of the use of genetic modification in food or food production, or don't know. N=1111 (weighted base)

[91] The figure for 'important' (net) is the total of very important and quite important answers.

[92] The figure for 'not important' (net) is the total of not very important and not at all important answers.

Of this sample, levels of net importance were also heightened for those who knew more about GM[93] than those who did not. The proportions saying each were important are constant across the three criterion, therefore responses are highly correlated where a respondent has often given the same level of importance to each of the three criterion.

- 74% of those who knew more about GM felt it very or quite important that 'The food contains no traces of GM ingredients, even at very low levels' compared to 66% of those who had little or no knowledge of GM
- 77% of those who knew more about GM felt it very or quite important that 'It contains no ingredients from GM plants' compared to 66% of those who had little or no knowledge of GM
- 77% of those who knew more about GM felt 'It very or quite important that for items like meat, milk, or eggs, the food is from animals that have not been fed GM plants' compared to 66% of those who had little or no knowledge of GM.

[93] Respondents that have 'good' or 'reasonable, basic' knowledge levels

Table 12

Level of importance of each criterion *if product labelled 'GM Free' or 'Free from GM'* by those with good or reasonable knowledge levels of GM and those with little or no knowledge of GM

	All heard of use of GM or don't know	Good/ reasonable knowledge levels of GM	Little or no knowledge of GM
Un-weighted base	*1050*	*342*	*688*
Weighted base	*1111*	*426*	*664*
The food contains no traces of GM ingredients even at very low levels	68%	74%*	66%
The food contains no ingredients from GM plants	69%	77%*	66%
For items like meat, milk or eggs, the food is from animals that have not been fed GM plants	69%	77%*	66%

Base: all who have ever heard of the use of genetic modification in food or food production, or don't know. N=1111 (weighted base)

**denotes significantly higher than 'know little or no knowledge' of GM*

Although the majority of respondents who had heard of the use of GM thought that if a product is labelled as 'GM Free' or 'Free from GM' that each criteria was important (very or quite) those aged 16-34 years were less likely to find these criteria as important compared to 35-64 year olds, as shown in Table 13.

Table 13

Level of net importance of each criterion *if product labelled 'GM Free' or 'Free from GM'*

	Unweighted base	*Weighted base*	**The food contains no traces of GM ingredients even at very low levels**	**The food contains no ingredients from GM plants**	**For items like meat, milk or eggs, the food is from animals that have not been fed GM plants**
16-34 (very or quite important)	*274*	*318*	63%	65%	65%
35-64 (very or quite important)	*528*	*596*	72%*	74%*	73%*

Base: All who have ever heard of the use of genetic modification in food or food production, or don't know

** Denotes significantly higher result than 16-34 year olds*

4.3 'GM Free' Scenarios

In the survey, respondents who had heard of the use of GM were given three different scenarios and asked whether in each case it was appropriate for a food like milk or eggs to be labelled as 'GM free'. These scenarios included; 'The farmer gave GM feed to his animals when they were younger but not in the last few months before the milk or eggs were collected', 'A farmer has not fed his animals GM feed but does not know whether they were fed GM feed by a previous owner' and finally 'The animals have not eaten GM feed but they have been treated with a vaccine or a medicine that was produced using genetic modification'.

For all three scenarios a higher proportion of these respondents reported that the food should not be labelled as 'GM free' in these instances.

- 60% of respondents reported that a food could not be labelled as 'GM free' if 'The farmer gave feed to his animals when they were younger but not in

the last few months before the milk or eggs were collected'. This compared to 24% of respondents agreeing that in this scenario the food could be labelled as GM free.

- 55% thought that a food could not be labelled as GM free if 'A farmer has not fed his animals GM feed, but does not know whether they were fed GM by a previous owner'. This compared to 29% of respondents agreeing that in this scenario the food could be labelled as GM free.
- 53% thought that a food could not be labelled as GM free if 'The animals have not eaten GM feed, but they have been treated with a vaccine or medicine that was produced using genetic modification'. This compared to 30% of respondents agreeing that in this scenario the food could be labelled as GM free.

Results are detailed in Table 14 below.

Table 14
Proportion for each response to scenarios about GM free labelling

	The farmer gave GM feed to his animals when they were younger but not in the last few months before the milk or eggs were collected	A farmer has not fed his animals GM feed but does not know whether they were fed GM feed by a previous owner	The animals have not eaten GM feed but they have been treated with a vaccine or medicine that was produced using genetic modification
Yes, that could be labelled as GM free	24%	29%	30%
No, that should not be labelled as GM free	60%	55%	53%
I am not sure	16%	16%	17%

Base: all who have ever heard of the use of genetic modification in food or food production, or don't know. N=1111 (weighted base)

Differences were found for those who knew more about GM ('good' or 'reasonable, basic' knowledge) and those who did not for this sample, where

there was greater level of disagreement for each scenario amongst those with knowledge of GM:

- The GM Feed switch: 68% of those who knew more about GM did not think it should be labelled GM free versus 56% of those who know little or nothing
- Lack of clarity from previous owners: 64% of those knew more about GM thought it should not be labelled as GM free versus 51% of those who know little or nothing
- Use of vaccine: 61% of those who knew more about GM thought it should not be labelled as GM free versus 49% of those who know little or nothing

There were no significant differences by gender or SEG for the proportions saying each could be labelled as GM free. However more 16-34 year olds that had heard of the use of GM than those aged over 34 felt that a food could be labelled as 'GM free' for the vaccine scenario (37% compared to 28%). This was the only significant difference by these broad age bands.

Although no significant differences were detected amongst respondents by SEG for the proportions who thought each one could be labelled as GM free, there were significant differences by SEG for the proportions who thought that it should not be labelled as GM free. A significantly greater proportion of ABs thought that should not be labelled as GM free for two of the options:

- GM Feed switch: 69% of ABs did not think it should be labelled GM free compared to 56% of C2s and 55% of DEs
- Lack of clarity from previous owners: 63% of ABs did not think it should be labelled GM free compared to 50% of DEs

5. Claimed Impact on Purchase

As in the qualitative phase, the quantitative research also asked respondents about the potential affect on the decision to buy product if it had either a 'GM Free' or 'Contained GM' label. Quantitative research can only provide an

indication of claimed impact, that is, what people *say* they might do if they saw a label. It cannot, however, provide measurement of actual impact of a label.

Those who had heard of the use of GM were asked what the affect would be on their decision to buy a product for the first time (all other factors being equal) if the label said it 'contained GM'. A similar question was also asked about affect on purchasing behaviour if the label described the product as 'GM free'. Results are described in the Table 15 on the following page.

In summary, and further supporting the findings from the qualitative phase, a proportion of these respondents claimed that a label stating 'contained GM' may have some impact on purchase, with 49% of respondents claiming they would be (much or a little) less likely to buy a product if it were labelled in this way.

The quantitative findings also indicate that a product with a 'GM free' label may encourage purchase, with 41% of question respondents claiming that they would be (much or a little) more likely to buy a product if it were labelled in this way.

The proportion of respondents claiming that a label would have no real impact varied between the two types of label. 45% of respondents that have heard of the use of GM claimed that they would be just as likely to buy a product with a 'GM free' label. This was compared to 37% who claimed they would be just as likely to buy a product with a 'contained GM' label.

There was some divergence between males and females within this sample, although the overall pattern of decisions was fairly similar. 32% of females that had heard of the use of GM claimed they would be 'just as likely to buy a product' that had a 'contained GM' label. This was lower than males, where 42% claimed they would be just as likely to buy a product labelled in this way. Females that had heard of the use of GM also claimed they were (much or a little) 'less likely to purchase' a product with a 'contained GM' label than males (54% versus 44%). In line with this, females claimed to be 'much more likely'

to purchase a product with 'GM free' labelling compared to males in this sample (23% much more likely versus 17%) and were less likely to respond with 'just as likely to purchase a product' (41%) than males (50%) as shown in Table 16 below.

Table 15

Proportion of responses of the affect on the decision to purchase product (1st time purchase) with 'contained GM'/ 'GM free' label

	Label 'contained GM'	Label said 'GM free'
I would be much more likely to buy it	2%	20%
I would be a little more likely to buy it	4%	21%
More likely(net)[94]	**7%**	**41%**
I would be just as likely to buy it	37%	45%
I would be a little less likely to buy it	25%	4%
I would be much less likely to buy it	24%	3%
Less likely (net)[95]	**49%**	**7%**
Don't know	7%	7%

Base: all who have ever heard of the use of genetic modification in food or food production, or don't know. N=1111 (weighted base)

[94] The figure 'more likely' (net) is the total of I would be much more likely to buy it and I would be a little more likely to buy it answers.

[95] The figure 'less likely' (net) is the total of I would be a little less likely to buy it and I would be much less likely to buy it answers.

Table 16

Proportion of responses of the affect on decision to purchase product (1st time purchase) with 'contained GM'/ 'GM free' label by gender

	Label 'contained GM' Male	Label 'contained GM' Female	Label said 'GM free' Male	Label said 'GM free' Female
Un-weighted base	*480*	*570*	*480*	*570*
Weighted base	*544*	*567*	*544*	*567*
Much more likely	3%	2%	17%	23%*
A little more likely	5%	4%	22%	21%
More likely (net)	**7%**	**6%**	**39%**	**44%**
Just as likely	42%**	32%	50%**	41%
A little less likely	23%	27%	2%	6%
A lot less likely	21%	28%	3%	3%
Less likely (net)	**44%**	**54%***	**5%**	**9%***
Don't know	7%	7%	7%	6%

Base: All who have ever heard of the use of genetic modification in food or food production, or don't know. N=1111 (weighted base)

** Denotes a significantly higher result for females*

*** Denotes a significantly higher result for males*

Likelihood to purchase a product with 'GM free' labelling was also higher amongst those who knew more about GM ('good' or 'reasonable, basic' knowledge) (51%) for all who had heard of the use of GM. Likelihood to purchase a product with a 'contained GM' label was higher for this group – 57% of those who knew more about GM were less likely to purchase with a 'contained GM' label.

More English and Northern Irish respondents conveyed they would be (much or a little) less likely to purchase a product with a 'contained GM' label and (much or a little) more likely to purchase a product with a 'GM-free' label, compared to question respondents in Scotland. Results are detailed in the following table.

Table 17

Proportion of responses of affect on decision to purchase product (1st time purchase) with 'contained GM'/ 'GM free' label by country

	All heard of use of GM or don't know	England	Scotland	Wales	Northern Ireland
Un-weighted base	*1050*	*644*	*131*	*167*	*108*
Weighted base	*1111*	*931*	*93*	*58*	*29*
	Impact on purchase if 'contains GM'				
More likely (net)	7%	7%	3%*	1%**	9%
Just as likely	37%	35%	55%***	45%****	39%
Less likely (net)	49%	50%	37%**	44%	51%
Don't know	7%	7%	6%	9%	1%
	Impact on purchase if 'GM Free'				
More likely (net)	41%	43%	24%**	35%	44%
Just as likely	45%	43%	62%****	52%****	51%
Less likely (net)	7%	7%	8%	4%	4%
Don't know	7%	7%	6%	9%	1%

Base: All who have ever heard of the use of genetic modification in food or food production, or don't know. N=1111 (weighted base)

*Denotes significantly lower result than Northern Ireland

** Denotes significantly lower result than Northern Ireland and England

*** Denotes significantly higher result than Northern Ireland and England

**** Denotes significantly higher result than England

VII Conclusions

These conclusions are drawn from both the qualitative and quantitative research findings. The conclusions largely draw from the qualitative research which formed the main part of the research, but also show where the quantitative findings support these findings or otherwise.

Current Awareness and Knowledge of Genetic Modification

1. Overall the research showed that there were fairly high levels of awareness of genetic modification in food or food production. The qualitative research showed that participants tended to be aware of genetic modification, largely from past media coverage. The quantitative findings also supported this level of awareness showing that 74% of the sample claimed to have heard of the use of genetic modification in food or food production.

2. However, there are indications from the research that *knowledge* of GM technology is limited. The qualitative research found although there were participants who were fairly knowledgeable, in the main participants' understanding of GM technology was fairly basic, with limited knowledge around what it is, what is currently available, where it is used (including animal feed) and the implications for use in food. Although the quantitative research did not seek to understand the details of claimed knowledge, it appears to support this low level of understanding. Only 8% of those who had heard of the use of GM or don't know claimed to have good knowledge of the use of genetic modification in food or food production.

3. The qualitative research also showed that assumptions could be made about GM in the absence of further information. These assumptions tended to be based on attitudes towards modern food technologies and practices and tended to tip towards negativity in relation to impact on food quality and safety.

Current Use of Labels Including GM

4. Both qualitative and quantitative research findings indicated that the sample were, to a greater or lesser extent, using a range of labels and information when shopping for food. This included nutritional and ingredients information. However, they do not appear to be currently seeking pack information in relation to GM food. Specifically, the qualitative research found that participants were not typically seeking GM information, for example on labels, when shopping for food. This was reflected in the quantitative findings which found that only 2% of the total sample spontaneously mentioned they looked for information about GM content when purchasing food for the first time. When respondents were prompted with a range of different types of information that are found on food labels and asked what was important to them, only 4% mentioned GM information as one of their 3 important pieces of information. In light of this, labelling of GM food appears to be currently *not a top of mind topic* for the respondents in this research sample; which may indicate that, at present, many consumers have low spontaneous needs with regards to GM labelling.

5. That said the qualitative research found that there was currently a general expectation that any GM-containing products would be labelled for consumer information. Further, drawing attention to the presence of GM within food production and the suggestion of a potential role for GM labelling appears to prompt an expectation that GM foods would be labelled in some way for a proportion of the sample.

Response to Current Labelling Requirements

6. Findings from the qualitative research indicated that participants were somewhat surprised that GM feed was not currently required to be labelled when used. However, the lack of requirement to label GM use in production was less concerning overall. The current tolerance level

generated a mixed response with participants broadly suggesting it was acceptable, although it was also considered too high by others.

Consumers' Ideal Labelling Solution

7. Across the qualitative sample, participants were divided between those who felt the ideal labelling solution should be to highlight GM presence or GM absence. However, information regarding GM presence was generally considered more important in the first instance – meeting participants' perceived 'right to know' that GM components exist in foods being purchased. This expectation appears to be generated in part by familiarity with other labelling systems for 'concerning' ingredients, for example additives labelling.

8. GM absent labelling, however, was also considered useful for certain types of shoppers. From the qualitative research, this was seen as an easier way to determine GM content and/or avoid GM foods rather than looking separately for presence of GM ingredients or the use of GM feed or processing.

9. Within the qualitative research, it was also raised that a single labelling system that combined both GM presence and GM absence, for example via a "traffic light" approach, could be useful. It was discussed that this may be more straightforward to use rather than determining GM content via a range of individual GM present and GM absent labelling options.

10. Discussion of the 'cost' of labelling within the qualitative research, either in manufacture or to the consumer, was more difficult for participants to understand but generally it prompted participants to claim that GM should be labelled and that they should not have to bear any cost involved. When understood that it could increase prices, for those less interested in GM and/or GM labelling, it did reduce demands for labelling; these respondents felt that it was not necessarily worth bearing additional costs. Others, however, claimed they might pay a price premium to avoid GM.

GM Present Label Options

11. Although there were participants that were less interested, it was generally considered, in the qualitative research, that *GM ingredients* should be labelled either to help decision making or more broadly as providing information that a consumer had a 'right to know'. The qualitative research indicated that there was an overall preference for this information to be footnoted within the ingredients list. Concerns were raised, however, as to the implications of GM ingredients on the food, for example on the quality and safety of the food. The quantitative research also found that approximately two thirds of those who had heard of the use of GM[96] (67%) considered that it was either very or quite important to write on the label if 'One or more ingredients in the food are from a genetically modified plant'.

12. The qualitative research found that although the *GM feed label* option was understood, a lack of knowledge about GM feed meant that a number of assumptions, mainly negative, were raised in relation to the potential impact on the animal being fed GM feed. Although again there were participants who were less interested, it was largely considered in the qualitative research that GM feed should be labelled – again to guide purchases or as providing information that consumers had a 'right to know'. The quantitative findings also showed that approximately two thirds of those who had heard of the use of GM (67%) considered it very or quite important to write on the label if 'The food product (e.g. meat, milk or eggs) is from animals that have been fed genetically modified plants'.

[96] The sample here refers to those in the sample who have ever heard of the use of genetic modification in food or food production or don't know, N = 1111 (weighted base). This is also the case for other references to the sample in the subsequent points.

13. *GM used in food production* type labelling was explored in the qualitative phase only. The label option tested, that is, 'Produced using rennet from genetically modified organisms' was typically confusing for participants. The qualitative research findings also showed that GM used in food production was considered less important to label, as either it was considered overwhelming information or that GM used in food production was likely to have less impact overall on the food. That said there were frequent label users and/or those with strong GM concerns who did consider this should be labelled.

GM Absent Label Options

14. As mentioned the qualitative findings suggested that GM absent labelling might be useful information for those interested to avoid GM. Provision of an easy to read logo was suggested to help more readily identify products with no GM.

15. Of the GM absent label options researched within the qualitative phase, 'GM Free' and 'All ingredients are non-GM' were considered most clear and straightforward to identify products which did not have GM.

16. Other label options researched to signify an absence of GM were considered either less straightforward or unnecessary.

17. There are, however also indications from the qualitative findings, which are largely reinforced from the quantitative research, that GM absent labelling, for example, 'GM Free', may result in a range of consumer expectations, that are worth consideration:

    I. In the qualitative research, there were assumptions that a product labelled as 'GM Free' would not allow for *any* tolerance threshold (such as the 0.9% tolerance level that was generally accepted for mandatory GM labelling). The quantitative research supported this assumption showing that just over two thirds of the those who had

heard of the use of GM (68%) considered that it was very or quite important that a food labelled as 'GM Free' or 'Free from GM' contained no traces of GM ingredients, even at very low levels.

II. The qualitative research also found that there were expectations that a 'GM Free' label would indicate that the animal had never been fed GM feed. The quantitative research again supported this, showing that around two thirds of those who had heard of the use of GM (69%) considered it to be very or quite important for a product labelled 'GM Free' or 'Free from GM' that 'For items like meat, milk or eggs, the food is from animals that have not been fed GM plants'. Just under two thirds of GM aware respondents (60%) also claimed that it should not be labelled as 'GM Free' if 'The farmer gave GM feed to the animals when they were younger but not in the last few months before the milk or eggs were collected'.

III. The quantitative research also looked at two scenarios; one where the farmer did not know whether the animal had been previously fed GM feed by a previous owner and the other where the animal had been treated with a vaccine or a medicine that was produced using genetic modification. In both these circumstances, just over half of the quantitative sample considered that it should not be labelled 'GM free' (55% and 53% respectively).

18. Findings from the qualitative research also suggest that, depending on the wording used, 'absent' labels, for example 'GM Free' may raise positive connotations in relation to product quality.

19. In addition from the qualitative research, there are indications that consumers may assume that any products not labelled with a GM absent label may in some way contain GM.

Claimed Impact of Labelling

20. Labelling can be understood as a means of providing information for people who wish to make informed shopping choices. Labelling may be seen as necessary – for example, on the basis of a health issue that may be relevant to any given number of consumers – or beneficial – for example, when product quality is of importance, as in the case of organic products. There are indications from the qualitative research that the act of labelling GM can implicitly suggest that GM is potentially negative (and has therefore labelling has become necessary). It appears that this assumption could be further exacerbated by lower levels of knowledge of GM, suggesting that the introduction of any new labelling information may raise concern, at least in the first instance.

21. The findings suggest that labelling GM on foods may impact on shopping behaviour for a section of the public, who claim that this information might impact on their food choices. This is the case for labelling regarding both ingredients and the use of GM feed, and in some cases processing (qualitative findings only).

22. The qualitative research findings suggest that those more likely to take an interest in GM labelling are those who already claim to use labels (due to quality or health concerns) and/or who have greater concerns about GM foods.

23. There was a common expectation that GM presence labelling would be provided across all food products. However, there are suggestions, from the qualitative findings , that the impact of such labelling is likely to be more pronounced for some food categories, particularly animal products as well as some staple foods, where concerns about food quality and any potential negative effects of GM tended to be more prevalent. There are also indications from the qualitative findings that other factors, however, may also impact on final choices. For example, price or brand preference may take priority or other decision making factors might come into play depending on the individual circumstance.

24. Although this research cannot measure actual impact of labelling, looking at the claimed responses in the research suggests that *GM present* labelling could potentially reduce likelihood of purchase from those that notice it and are interested. The qualitative research found that those most concerned, as identified above, claimed if noticed it might impact on their shopping choices, for example reducing their propensity to purchase. The quantitative sample also showed it potentially having impact, with around half of respondents who had heard of the use of GM claiming they would be a little or much less likely to buy a product with a label that said 'contained GM' (49%).

25. The research suggests also that *GM absent* labelling could potentially increase propensity to purchase, again from those most interested in quality and that notice it. Qualitative findings suggest that this is also likely to be for people interested in avoiding GM content. This was reflected in the quantitative findings where 41% of the sample claimed a 'GM Free' label would make them a little or more likely to buy a product, although around the same proportion claimed they would be just as likely to buy it (45%).

Information Needs

26. Information needs were only explored within the qualitative phase directly, although there are indications from the quantitative phase about previous access to information.

27. The quantitative findings showed that only a proportion of the sample (those who had heard of use of GM or don't know) had previously searched for information with regard to GM (23%) across a range of frequency. This potentially indicates that currently levels of interest in GM are fairly low amongst the general public.

28. Within the qualitative sample, there was limited interest in further information, indicating the *current* need for additional information to complement existing labelling practices as fairly low.

29. However, research indicates that additional information may be required if new labelling is introduced – particularly regarding any introduction of GM animal feed labelling, which was an area of higher concern and frequent misunderstanding.

30. Indications are that consumer information needs to include additional details regarding:

    a) What GM is;
    b) Why and how it is used (including GM feed);
    c) Potential health and safety implications (or proof of safety) for both human and animal health;
    d) Potential benefits and drawbacks of use of GM and GM feed.

31. Supporting information may also help mitigate or address assumptions that arise from GM labelling, such as beliefs that:

    a) Foods with GM ingredients are poorer quality – for example, made of cheaper ingredients, signifying lower interest in animal welfare or non-standard feed practices, and so on;
    b) GM foods have had extra chemicals 'added' or 'injected' in some way – for example, the use of chemical additives or hormones;
    c) GM animal feed intentionally or unintentionally alters animals in some ways – for example, accelerated growth patterns, fattening, or deformity;
    d) Foods making claims about absence of GM are of higher than standard quality with associated health, nutrition and/or taste benefits.

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