

Appendices: Consumer perceptions of genome edited food (July 2021)

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Technical report

Methods

This research project combined a qualitative phase consisting of deliberative, reconvened workshops and an online community, and a quantitative nationally representative survey (England, Wales, Northern Ireland).

Qualitative phase

The qualitative phase consisted of four cohorts of 20 participants (80 people in total) who each attended two deliberative workshops. Between these workshops, they were invited to participate in an online community.

Workshop 1: January 11th – 16th 2021

A three-hour online session that focused on participant learning and started to explore how the participants felt about the concept of genome edited foods (see appendix 3 for discussion guide and slides). A pre-workshop paper questionnaire was conducted at the beginning of the workshop to capture participants starting levels of awareness and attitudes. There were also experts in attendance, who were able to answer participants questions as they arose, and also conducted a Q&A session during the workshop. Case studies were used to prompt participants to think about different factors affecting the acceptability of both genome editing and GM.

Online community: January 21st – February 4th 2021

The online community offered participants a reflection period and a chance to put some of their learning into practice. It aimed to test how well participants had understood and remembered the differences between genome editing and GM using a quiz. It also aimed to identify and correct any misunderstandings and provide answers to participants' questions as they considered the issues further. A summary of the activities can be found in appendix 4.

Workshop 2: February 6th – 11th 2021

This was another three-hour online session, that explored the key policy questions and delved into consumer views of genome edited food, particularly their concerns and views on potential public acceptability (see appendix 5 for discussion guide and slides). FSA colleagues presented information about food regulation and the possible directions for

regulation and labelling of genome edited foods in the UK. Discussing hypothetical situations, such as future labelling scenarios, can often be difficult for participants to engage with. For this reason, Ipsos MORI worked with Liminal Space to design a series of food, drinks and menus with mocked-up genome edited labelling. Each participant received a box containing a mix of these items, which they then looked at and discussed in small discussion groups. This aimed to bring labelling scenarios to life and stimulate discussion about participants priorities and concerns for labelling of genome edited products.

Sampling and recruitment

The core qualitative sample was 80 participants, divided between four regional cohorts (Midlands, Manchester/Leeds, Wales & Northern Ireland). A trusted recruitment partner used a screening questionnaire to select participants in each region (see appendix 2).

Quotas were set for age, gender, ethnicity, socio-economic group (SEG), education level, rural or urban residence, food label literacy, and household make-up. The full set of quotas and the final sample achieved can be found in appendix 1.

Participants were incentivised with £75 per workshop and £50 for the online community. The online community incentive was paid to participants who completed at least three activities, including the two activities that were conditional for receiving the incentive.

Quantitative stage

The aim of the quantitative survey was to test the prevalence of the findings from the qualitative phase, for example, awareness of genome editing in food.

The online survey was carried out among adults aged 16-75 in England, Wales and Northern Ireland. The survey sample was weighted by age, gender, region and working status to ensure that it was broadly representative of those online aged 16-75 in England, Wales and Northern Ireland. The fieldwork was carried out between 26th February and 2nd March 2021 and 2,066 responses were achieved. It is important to note that significant associations, and not causal effects, are reported.

As genome editing is a scientific technique that the general population may not be familiar with, respondents were shown the definitions (see page 5 of these appendices) of genome editing, as well as of GM and conventional breeding, to help them answer the questions. For the first set of questions respondents had not been given these definitions to allow us to measure their initial level of knowledge and perceptions of genome editing.

Questions asked before respondents had been given this information are marked throughout the report with “No definition given” in the base text. The full questionnaire can be found in appendix 6.

How to read this report

Interpreting quantitative and qualitative findings

This report draws together qualitative and quantitative findings, and so it is important to bear in mind that these findings should be interpreted in different ways:

Qualitative (deliberative workshops, the online community, the pre and post-workshop tracking questionnaire)

Qualitative research is illustrative, detailed, and exploratory. It offers insight into the perceptions, feelings, and behaviours of people. Owing to the often small sample size and purposive nature with which it is drawn, findings from this research are not generally considered to be representative of a wider population. Evidence in this report is based on participants' perceptions. It is important to remember that even though some perceptions may not be factually accurate, they represent “the truth” to the participants and, as such, are vital in understanding their attitudes and views.

In summary, qualitative research:

- Explores the range of attitudes and opinions of participants in detail.
- Provides insight into the key reasons underlying participants' views.
- Often leads to findings that are not statistically representative.
- Explores contradictory views and ambivalence.

Quantitative (survey)

Because the quantitative sample is representative of the England, Wales and Northern Ireland population, findings from the quantitative survey can be considered as representative of views of the wider population. The legislation surrounding the definition of a GMO that may be changed following the Defra consultation would apply in England only. However, as the FSA represents the three nations, consumer views in Wales and Northern Ireland are also valuable in case there are future developments in genome editing legislation there.

Quantitative survey results are presented as percentages. Where figures do not add up to 100%, this is the result of computer rounding or multiple responses. Where differences between percentages are reported, these are significant unless otherwise stated in the report.

Survey questions sometimes used a Likert scale. This is when the response options provide a scale to gauge strength of feeling; for example, 'very concerned', 'fairly concerned', 'not very concerned' and 'not at all concerned'.

When this has been the case, the report will sometimes refer to combined figures for each end of that scale. For example, those who answered 'very concerned' and those who answered 'fairly concerned' may be referred to as "those who were 'very' or 'fairly' concerned", and the findings grouped into one total percentage. It is important to note that due to computer rounding these total percentages may vary by one percentage point from the two individual group percentages added together. These percentages are still accurate.

Definitions used for this study

We refer to 'genome editing' or 'genome edited' throughout this report. Outside of this report, this is sometimes also referred to as 'gene editing' and sometimes abbreviated to 'GE'. This should not be confused with 'genetic engineering' which is a term some people use, often in the United States of America, to refer to the range of technologies that make changes to DNA.

We refer to 'GM' and 'GMO' in this report, which are abbreviations for 'genetic modification' or a 'genetically modified organism', respectively.

There is no one definition of genome editing used in the UK, either in legislation nor one that has been agreed by the UK government, and the FSA recognises that genome editing uses a spectrum of tools and can result in a range of modifications. The definition used for this project covers a specific sub-set of genome editing outcomes and was agreed between internal and external experts for the purpose of the consumer workshops in order to align with the parallel Defra consultation definition. The definition of genome editing used for this study therefore focuses specifically on genome editing in plants and animals that could also be achieved using traditional breeding (referred to as conventional breeding throughout this report).

It is important to note that the definitions used may have framed research participants' views during the research, especially where previous awareness was low and these definitions were the only ones that participants had encountered. This is particularly true where participants noted that genome editing usually produced changes that could have happened through natural mutations or conventional breeding methods.

Definitions used

- “Conventional Breeding” is a term that describes the range of techniques used for many years to genetically improve animals and plants. In animals it includes selective breeding and artificial insemination. In plant seeds, x-rays or chemicals are sometimes used to increase both the range and number of random mutations in the DNA.
- “Genome Editing” is a scientific technique used to create small specific changes to part of a living thing's DNA to improve its existing characteristics. These changes could also be achieved by Conventional Breeding.
- “Genetic Modification” is a scientific technique used to artificially insert DNA from one living thing into the DNA of another living thing, introducing a new or different characteristic. These changes could not be achieved by Conventional Breeding.

Under the definitions described above, genome editing differs from genetic modification (GM) in some key ways:

- GM introduces foreign genetic material from different organisms, whereas genome editing involves altering the original DNA of an organism, with no introduction of foreign genetic material.
- Genome edited foods are foods that contain, consist of, or are produced by organisms (such as crop plants or farmed livestock) in which the genetic material (DNA) has been altered in a way that could also have occurred naturally by mating, natural recombination, or traditional breeding methods such as selective breeding and chemical mutation.

- Changes introduced by genome editing are not easily traceable or detectable (without any foreign DNA introduction) and cannot be technically distinguished from those which have been bred by conventional farming practices.

Terminology used

Throughout this report we have referred to those who took part in the qualitative workshops and the online community as ‘participants’ or ‘workshop participants’. Those who completed the quantitative survey are referred to as ‘respondents’ or ‘survey respondents’.

Recruitment screener

Introduction:

Hello, my name is [Recruiter]. I am currently arranging a research project and would like to ask you some questions and, if you are eligible, invite you to participate.

I need to let you know some information before we go any further. I am working on behalf of Criteria Fieldwork, a research agency. They have been commissioned by Ipsos MORI to organise some research on their behalf. The research is about food purchasing.

The answers that you give to me today will be shared with Criteria Fieldwork and Ipsos MORI.

This exercise is purely a research project to help our clients develop their products and services, so anything you say during the research exercise itself or during this interview will remain confidential. You can access Criteria’s privacy notice on their website: www.criteria.co.uk.

You have the right to withdraw your consent to process the information you provide or object to our processing of your information. The research activity and this interview will be conducted in accordance with the Market Research Society Code of Conduct, and the information you provide will be treated in accordance with data protection law.

This interview is just to establish eligibility for the research project and will take around 5-10 minutes. The research project itself will comprise of X2 online workshops with some online tasks to be completed in between. Each workshop will last 3-hours and the online tasks will take a maximum of 2-hours to complete in total. Eligible participants will receive £200.00 for completing all of the tasks (£75.00 per workshop plus £50.00 for the online tasks).

During this interview I will need to ask specific questions about your ethnic background. This information will only be collected with your explicit consent and is being collected to ensure that the research is representative.

Q1. Are you happy to continue on this basis?

Single code only.

Yes	1	Continue
No	X	Thank and close

Q2. Do you or any members of your immediate family work in any of the following areas, either in a paid or unpaid capacity? Single code only

Journalism/ the media	X	Thank and close
Public relations (PR)	X	Thank and close
Market Research	X	Thank and close
Central or local government	X	Thank and close
Public health	X	Thank and close
Chef, dietician or nutritionist	X	Thank and close
No, none of these	7	Continue
Don't know	8	Continue

Q3a. How long ago did you last attend a market research group discussion/depth interview? Single code only

In the last 6 months	X	Thank and close
6 Months-3 years ago	2	Ask q3b
More than 3 years ago	3	Ask q3b
Never	4	Continue to q4

Q3B. What was each of those market research studies about?

Write in:	If on a similar subject as this one (i.e. about genetic modification or genome editing), close interview
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Q4. How would you describe your gender? Single code only

Male	1	At least x8 male
Female	2	At least x8 female
Other (write in):	3	
Prefer not to say	4	

Q5a. How old were you on your last birthday? Write in code and exact age.

Exact age:		
Under 18	X	Thank and close
18-30	2	Per workshop: at least x4
31-40	3	Per workshop: at least x4
41-50	4	Per workshop: at least x4
51-60	5	Per workshop: at least x4
61-64	6	Per workshop: at least x4
65+	7	Per workshop: at least x4

Q5b. How would you describe your ethnicity? Single code only

Workshops 1-2: at least x7 of minority ethnicities (code 2-13). Ensure a good mix of asian (code 6-10) and black (code 11-13) ethnicities.

Workshop 3 (wales): ideally at least x4 of minority ethnicities (code 2-13)

Workshop 4 (northern ireland): ideally at least x2 of minority ethnicities (code 2-13)

White British (English, Welsh, Scottish, Northern Irish, British)	1
White and Black Caribbean	2
White and Black African	3
White and Asian	4
Other Mixed / Multiple ethnic background. Please specify:_____	5
Indian	6
Pakistani	7
Bangladeshi	8
Chinese	9
Other Asian background. Please specify:_____	10
Black African	11
Black Caribbean	12
Other Black / African / Caribbean background. Please specify:_____	13
Non-British European. Please specify:_____	14
Other. Please specify:_____	15

Q6a. What is your current employment status? Single code only

In full-time employment	1	
In part-time employment	2	
Currently not in paid employment	3	
In full-time education/studying	4	
Look after the home / children	5	
Carer	6	
Retired	7	

Q6b. And could you tell me what it is you do for a living?

Position/rank/grade		
Industry/type of company		

Q6c. And could you tell me what the chief income earner does for a living (if not yourself)?

Position/rank/grade		Per workshop: at least x6 c2de
Industry/type of company		Per workshop: at least x6 c2de
Number in charge of		Per workshop: at least x6 c2de
Social Grade		Per workshop: at least x6 c2de

Q6d. What is the highest level of education you have achieved? Single code only

Per workshop:

At least x6 educated to below degree level (code 1-4)

At least x6 educated to undergraduate degree level or above (code 5-6)

Not finished high school	1
GCSE/ O-Level or equivalent	2
A-Level or equivalent	3
Trade or specialist school	4
Undergraduate degree	5
Postgraduate degree	6
Other (write in):	7

Q7a. Where do you currently live?

Workshop 1: all based in midlands

Workshop 2: all based in manchester/leeds

Workshop 3: all based in wales

Workshop 4: all based in northern ireland

Write in:	
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Q7b. How would you describe the area you live in? Single code only

Workshops 1-2: majority to live in an urban/ suburban area. At least x10 urban and at least x5 suburban

Workshops 3-4: majority to live in a rural area (code 3). At least x10 rural and at least x5 suburban.

Urban	1
Suburban	2
Rural	3

Q7c. Which of the following best describes the composition of your household?

Single code only

Per workshop:

At least x4 single households (codes 1-2)

At least x4 couple households (code 3)

At least x4 family households (codes 4-6)

I live by myself	1
I live with flatmates/ friends	2
I live with my partner/ spouse (no children)	3
I live with my partner/ spouse with children	4
I live with my child/children	5
I live with my parents	6
Other (write in):	7

Q8a. How would you describe your responsibility for the grocery shopping in your household? Single code only

I am solely/ mainly responsible	1	Continue
I am jointly responsible	2	Continue
Someone else is responsible	X	Thank and close

Q8b. When shopping for food, how much attention do you tend to pay to labelling and lists of ingredients etc.? Single code only

Per workshop: ensure a good mix of codes 1-3

I pay a lot of attention	1
I pay some attention	2
I pay very little attention	3

Q9a. Which of the following devices, if any, do you own & use regularly?

Smartphone	1	Continue
Laptop	2	Continue
Desktop PC	3	Continue
Tablet	4	Continue
None of the above	5	Refer to office

Recruiter note: if participant does not own a laptop, desktop pc or tablet, ipsos can arrange delivery of a tablet to their home (along with a wifi dongle if they need it). Please prioritise those who already own x1 of these devices where possible

Ask those who own a laptop/desktop pc only:

Q9b. Does your laptop/ desktop PC have a working microphone and camera (or webcam and headset you can plug in)?

Yes	1	Continue
No	X	Close

ASK ALL:

Q9c. Are you confident accessing a link which will be emailed to you and taking part in a video call using your laptop/ desktop/ tablet?

Yes	1	Continue
No	X	Close

Q10. We will audio or video record the interviews as part of the research. The recordings will be used only for internal analysis purposes. Are you happy for the audio / video recording to be used in such a way?

Yes	1	Continue
No	2	Refer to office

Q11. It may be necessary for Ipsos MORI to contact you by email or telephone after the research has taken place to follow up on ideas generated during the discussion. You would only be contacted if strictly necessary and only in connection with this research. Are you happy to agree to be re-contacted on this basis?

Yes	1	Continue
No	2	Refer to office

Qualitative sample

Gender:

Gender	Cohort 1	Cohort 2	Cohort 3	Cohort 4	Total	Quota
Male	10	9	9	10	44	Min. 32
Female	11	11	11	11	49	Min. 32

Age:

Age	Cohort 1	Cohort 2	Cohort 3	Cohort 4	Total	Quota
18-34	7	4	8	8	33	Min. 16
35-54	7	8	4	7	28	Min. 16
55+	7	8	8	6	32	Min. 16

Ethnicity:

Ethnicity	Cohort 1	Cohort 2	Cohort 3	Cohort 4	Total	Quota
BAME	11	9	5	1	27	Min. 20

Living area:

Living area	Cohort 1	Cohort 2	Cohort 3	Cohort 4	Total	Quota
Urban	10	9	0	0	23	A good mix
Suburban	11	10	7	8	39	A good mix
Rural	0	1	14	13	31	A good mix

SEG grade:

SEG grade	Cohort 1	Cohort 2	Cohort 3	Cohort 4	Total	Quota
AB ,C1	12	10	10	11	50	Min. 24

C2, DE	9	10	10	10	43	Min. 24
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Level of Education:

Level of Education	Cohort 1	Cohort 2	Cohort 3	Cohort 4	Total	Quota
Undergraduate degree or higher	10	9	7	9	43	Min. 24
No degree	11	11	13	12	50	Min. 24

Household makeup:

Household makeup	Cohort 1	Cohort 2	Cohort 3	Cohort 4	Total	Quota
Single household	6	4	5	4	22	Min. 16
Couple household	5	7	6	10	34	Min. 16
Family household	10	9	9	7	37	Min. 16

Attention to labelling and food choices:

Attention to labelling and food choices	Cohort 1	Cohort 2	Cohort 3	Cohort 4	Total	Quota
Pay a lot of attention	7	7	7	7	30	A good mix
Pay some attention	9	11	7	8	42	A good mix
Pay very little attention	5	3	6	6	22	A good mix

Workshop 1 Materials

Discussion guide

Discussion guide for Workshop 1 (3hr evening event)

Objectives:

- Explore the extent to which consumers are already aware of genome edited and genetically modified food and the differences between these
- Explore the differences between genome edited and genetically modified food when these are explained
- Identify the boundaries of acceptability around genome edited and genetically modified food, and whether consumers find one more acceptable and why
- Identify initial areas of concern and the reasons for these concerns.

This is a guide to the discussion including the exercises we will use and the discussion's broad flow. Questions are prompts rather than specific questions to administer – each facilitator is likely to ask slightly different questions to follow and probe into the comments of participants. Specialists will also join in the general discussion where asked by participants or facilitator to come in.

Timing	Session	Question areas and materials
6pm	Arrival	Participants enter the 'zoom room' and any that have not already done so are asked to change their screen name to first name and initial of their surname.
6.05-6.15pm	Plenary 1: Overall introduction to the project	<p>Welcome and introduction</p> <p>Lead Moderator show slides 2-5</p> <p>Slide 2: Study overview: study sponsors i.e. Food Standards Agency and overarching aim: your views of and questions around genome edited food. Introduce project delivery team, client, experts/ observer and note takers.</p> <p>Slide 3: The ground rules. These lay out some of our expectations of you.</p> <p>Slide 4: What else is going on – talk through the entire research process, including the fact that we have x4 cohorts each doing two workshops, and everyone invited to participate in the online community in-between. We will say more about that at the end of the workshop.</p> <p>Slide 5: Housekeeping.</p>

6.15-6.30pm	Breakout 1: Intros, baseline knowledge and attitudes and discussion	<p>Moderator to introduce self and one fact about themselves. Also introduce note taker and indicate whether there is an expert/observer in the room. Remind participants that experts are here to answer any Qs they might have.</p> <p>Warm-up (5 mins) – Moderator to ask each person in the group to introduce themselves and to say one fact about themselves.</p> <p>Knowledge questionnaire (5 mins): Facilitator to ask participants to complete the paper questionnaire in their packs. Once they have completed these, can they email them back to Imogen.Drew@ipsos.com take a photo of them and send them back. Ask them to keep the paper copy safe until the next workshop.</p> <p>Moderator: “I have a few questions to ask before we go back into the plenary”</p> <ul style="list-style-type: none"> • When you hear the term genetically modified or GM food, what do you think of? • How much have you heard about the differences between genetically modified/GM food and genome edited food?
6.30-6.40pm	Plenary 2: Introduction to genome edited food	<p>Lead moderator show slides 7-12</p> <p>Slides 7-10: Talk through basic biological concepts (What is DNA, a cell and a gene and the timeline), also talk through who is involved (slide 10).</p> <p>Slide 11: An expert talks through the difference between genome editing and genetic modification, referencing traditional breeding methods in this.</p> <p>Slide 12: Video about genome editing and CRISPR.</p> <p>Link to video.</p>

6.40pm-7.05pm	Breakout 2: Plenary reflection (15mins) Concerns and Questions (10mins)	Plenary reflection (15 mins) Welcome back to the breakout room! There was quite a lot of information shared in that last presentation, so to begin with, we will discuss what we have just heard. How much of that information felt familiar to you? <ul style="list-style-type: none"> • What had you heard about before? • Where had you heard about that? (School, news, friends, reading?) Was there anything that particularly surprised anyone? <ul style="list-style-type: none"> • Why was that surprising? • Did anybody hear something that contradicted what they had assumed, or thought they already knew? What was the most interesting thing that you heard? <ul style="list-style-type: none"> • Why was that interesting to you? • What else do you want to know about that? Who was confused by any of that information? <ul style="list-style-type: none"> • What is confusing? • Anybody else confused by this? If needed, see if an expert can help. Concerns and Questions: (10 mins) Moderator show slide 14 and type concerns and questions into the relevant columns as they come up Thinking back to all of the information shared in the presentation and video, what are the main things that concern you? <ul style="list-style-type: none"> • Why does that concern you? What do you think might happen? Who may be affected? • Does anybody feel differently?
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		<p>Thinking back to all of the information shared in the presentation and video, what are you curious to know more about?</p> <ul style="list-style-type: none"> • What makes you curious about this/want to know more? • Does anybody feel differently?
7.05pm-7.20pm	Break (15 mins)	<p>Moderators send the concerns and questions slide to lead moderator BEFORE TAKING THEIR OWN BREAK. Lead moderator consult with experts around which questions they will answer in the Big Questions Q&A after the break.</p>
7.20pm-7.50pm	<p>Plenary</p> <p>Big questions (15mins)</p> <p>Case Studies (15 mins)</p>	<p>Big questions Q&A: (18 mins)</p> <p>Lead Moderator: The experts (recap names/experience), have had a chance to look over some of the key concerns and big questions that you all raised in your groups before the break. We may not be able to cover all questions that have been raised, but we have kept a record of them, and they may be answered at a later date on the online community or in the next workshop.</p> <p>Moderator reads each question and agreed expert responds.</p> <p>Case studies (12 mins total – 2 mins per slide)</p> <p>Lead Moderator: Now we are going to talk you through some examples of genome editing in practice as well as examples of genetic modification in practice. Feel free to note down any thoughts you have, as we will discuss these in the breakout rooms afterwards.</p> <p>Lead moderator presents slides 17-22</p>

7.50pm-8.45pm	Breakout 3 Case study clarifications (5mins) Acceptability (30mins) Differentiating between GE/GM (20mins)	Case study clarifications (5mins) <p>You will find in your pack that you have all of the case studies presented on some cards. Please take them out and have a look over them.</p> <p>In a moment you are going to do a short individual activity about your own opinions on these case studies, so for the time being please hold your opinions about them to yourself. However, we will spend a few minutes now making sure you all feel that you understand the case studies.</p> <ul style="list-style-type: none"> • Are any of these case studies unclear or confusing? • If they ask if it's genome editing or genetic modification, inform them that we'll come to that later. <p>Acceptability ranking (25 mins)</p> <p>I'd like you to take 5 minutes to place them in a line in order from the MOST acceptable to the LEAST acceptable in your own opinion. This may be on the basis of the type of change that was made, the reason why it was made, the type of benefits that it aimed to achieve or something completely different!</p> <p>Wait 5 mins and try to pause any discussion about their thought process <u>until after</u> they have done this, so that they don't influence each other too much. (If they want to change their mind during the discussion or place two cards in the same place that is</p>	Case Study A: <ul style="list-style-type: none"> • Background: Artificial insemination is a common breeding method in dairy farms. Sperm is collected from male cows and manually introduced to females by the farmer. Collected semen is sometimes stored and transported/shipped to other farms. • Q: Any thoughts on issues around animal welfare and selective breeding? For example, extremely high production of milk leading to painful conditions, according to some reports (Click here to see a report). For example, producing so much milk can use up nutrition they need themselves, leading to hunger, exhaustion and metabolism issues, they may lose strength, are susceptible to infections and mastitis which is a very painful inflammation of the
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		<p>fine, but also a good probing opportunity! Ask them why they made the original decision and then why they changed their mind.)</p> <p>Great, now can each person tell me which card they placed at the LEAST acceptable end of your scale?</p> <ul style="list-style-type: none"> • Ask in each participant in turn • Why did you put it there? What makes it the least acceptable to you? • Did anybody put this case study in the MORE acceptable end of their scale? Why? <p>What other cards were not very acceptable?</p> <ul style="list-style-type: none"> • Can just ask the group rather than each participant • How far down the scale did you place it and why? • Anybody feel differently? Why? • Is there anything else you'd want to know about this case study in order to assess its acceptability to you? <p>Now, can each person tell me which card they put at the MOST acceptable end of their scale?</p> <ul style="list-style-type: none"> • Ask in each participant in turn • Why did you put it there? What makes it the most acceptable to you? • Did anybody put this case study in the least acceptable end of their scale? Why? <p>What other cards were more acceptable than others?</p> <ul style="list-style-type: none"> • Can just ask the group • How far up the scale did you place it and why? 	<p>udders. Similar issues with farmed chickens, bred too large to stand up, and pugs who are prone to breathing problems.</p> <p>Case Study B:</p> <ul style="list-style-type: none"> • PRRSV financial impact: In 2013 the total cost of the disease in Europe was 1.5billion Euros. • PRRSV animal welfare impact: Impacts pigs differently depending on age. In older pigs it can cause fever, vomiting, stillbirths and resulting distress for the pigs. In young pigs it can cause fever, pneumonia & increased mortality. • Q: What do you think about the significance of these impacts vs the idea of interfering with 'natural' pig DNA? <p>Case Study C:</p>
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		<ul style="list-style-type: none"> • Anybody feel differently? Why? • Is there anything else you'd want to know about this case study in order to assess its acceptability to you? <p>Differentiating between genome editing and genetic modification (20 mins)</p> <p>Thinking back to the presentation earlier, can you tell me if you think any of these case studies are genome editing, and if any are genetic modification? I'll go through them in turn now:</p> <ul style="list-style-type: none"> • Ask for each case study letter • Does this case study involve either genome editing or genetic modification, or neither? • Why do you say that? • Does everyone agree? <p>Show slide 11 (summary of the difference between genome editing and modification)</p> <p>Great, so the case studies that are genetic modification are: C, and D. This is because genes from another organism were added by scientists to their own DNA, as you can see in the description of the process on the card.</p> <ul style="list-style-type: none"> • Discuss any particular case studies where participants got it wrong. • Is it clear now why this is genetic modification, and not genome editing? If not – what is unclear? 	<ul style="list-style-type: none"> • Background: The producer Del Monte have large laboratories for research and development, with specific farms and testing sites. This is how they have developed this new pineapple. • Enzymes are proteins that cause necessary chemical reactions within the cells of organisms. • Q: What do you think about the relationship between 'designer food' and food waste of wonky fruit and veg? • Q: Such foods are likely to be more expensive than the alternatives (traditional pineapples), hence may only be accessible to those who can afford them. Thoughts? <p>Case Study D:</p> <ul style="list-style-type: none"> • Background: The fish are raised in land based farms
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		<p>The case studies that are genome edited are B, E and F. This is because their existing DNA has been changed in some way, but no new genes taken from another organism have been introduced. In fact, while the change was made by humans, this could have happened over time through natural mutations or breeding.</p> <ul style="list-style-type: none"> • Discuss any particular case studies where participants got it wrong. • Is it clear now why this is genome editing, and not genetic modification? If not – what is unclear? <p>Case study A was neither. Whilst the genes of two different organisms have been intentionally combined in order to create a breed of cow with specific traits, this has been done over time by having these animals reproduce together. Now that you understand the difference between genome editing and genetic modification, do you find one more acceptable than the other and why? (5 mins)</p>	<p>rather than sea-cages. The land based farms are tightly controlled so no need for antibiotics, require less feed, and physically distanced from wild fish populations.</p> <ul style="list-style-type: none"> • Benefits: Cheaper access to health benefits of salmon. If consumer demand is there salmon can be produced faster and reduce pressure to overfish. • Impact on ecosystem: Although unlikely, if these fish got into the wild they could have a significant impact on ecosystem (increased competition). They are sterile (cannot breed), so cannot pass their modified DNA on. • Hormones: There is some consumer concern about consuming fish with increased growth hormones, (for example, possible link to
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			<p>cancer) although this has been deemed safe by the United States Food and Drug Administration (FDA) and these concerns are not shown in evidence.</p> <ul style="list-style-type: none"> • Q: Would you feel any differently about eating this salmon compared to the current salmon available in the supermarket? What if it was much cheaper than current salmon? • Q: Any views on the potential positive impact on overfishing? <p>Case Study E:</p> <ul style="list-style-type: none"> • Background: 1 in 100 people have coeliac disease and has a big impact on quality of life. There is no cure, only managed by following a gluten free diet for life – which can be very challenging.
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			<ul style="list-style-type: none"> • Baking differences: Due to the complexity of the wheat genome, wheat that is gluten free does not result in the same baking quality. So precise methods were needed to keep the gluten but remove the part of gluten that triggers the autoimmune reaction. • Q: What do you think about the significance of these impacts vs the idea of interfering with 'natural' wheat DNA? <p>Case Study F :</p> <ul style="list-style-type: none"> • Background: Estimated 30% of all cocoa produced in West Africa is destroyed by disease. Climate change is exacerbating disease problems, so this is expected to keep increasing – big impact on farmers.
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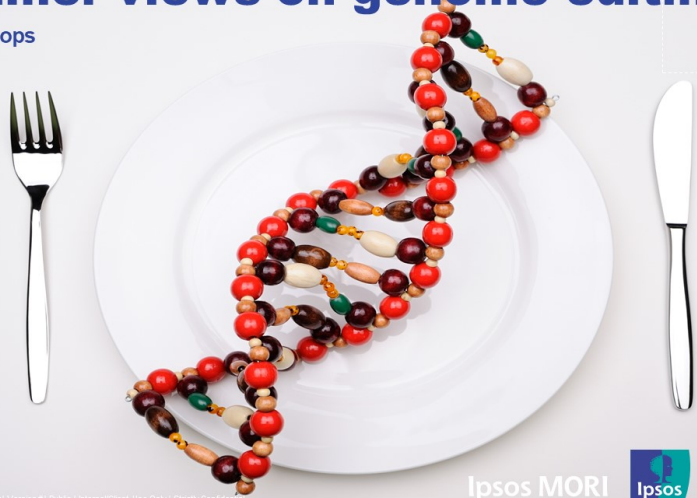
			<ul style="list-style-type: none"> • Scientists predict that cocoa could go extinct across the world in less than 40 years • Q: What do you think about the possibility of chocolate, coffee and bananas becoming much harder/expensive to by due to the impact of climate change/ disease? • Q: If this is successful, what do you think about the idea that most or all chocolate available to you is made with this altered cocoa?
8.45pm-9pm	Plenary Wrap up	Lead moderator thanks participants. Breakout room moderators each reflect back the key discussion points from their group (2 mins max per group): <ul style="list-style-type: none"> • How accurate were we when distinguishing genome editing from genetic modification? • Were there any particularly confusing things, or common misunderstandings? 	

		<ul style="list-style-type: none"> • Which case studies were most and least acceptable? Why? • And was genome editing or genetic modification seen as any more acceptable than the other? Why? • Lead moderator introduces the online community and informs them that they will be send log in details and instructions via email (5 mins) 	
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Slides

Consumer views on genome editing

Public workshops



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The Food Standards Agency (FSA) wants to better understand consumer (public) views on genome edited food

We are interested in your **thoughts, views, concerns** and **questions!**



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Ground rules...



1. Listen **respectfully**, without interrupting.
2. Listen actively and with an ear to **understanding others'** views. (Don't just think about what you are going to say while someone else is talking.)
3. **Any question is a good question.**
4. Criticise ideas, **not individuals**.
5. Commit **to learning**, not debating. Comment in order to share information, not to persuade.
6. Stay on topic and **try to be concise**.
7. **Avoid** blame, speculation, and inflammatory language.
8. Allow everyone the **chance to speak**.
9. **Avoid assumptions** about any member of the group or generalisations about social groups. Do not ask individuals to speak for their (perceived) social group.
10. **Be patient** with other participants and the team – we have a lot of information to get through.
11. Feel free to share your thoughts about this event with **friends and family**.
12. If posting **about this event on social media** please do not share any detail of the discussions.

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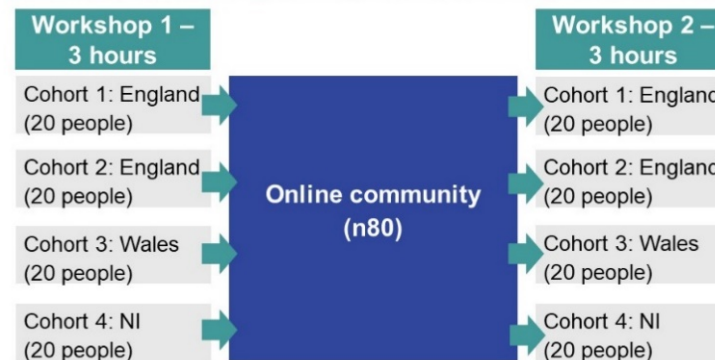
Ipsos MORI



The project and who is involved



Workshops with the general public across England, Wales and Northern Ireland



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Housekeeping

- Keep distractions to a minimum (i.e. mobile phones)
- Take a break if you need to (i.e. to use the bathroom, or to attend to anything urgent)
- We will have an official break for 15 minutes

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What is DNA?

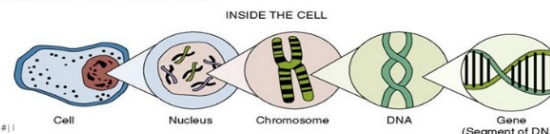


- **DNA** contains **instructions** for an organism's **growth**, and **its development**
- These instructions are coded in a **sequence of 4 bases**, known as **A, T, C and G** in a **specific order**
- **An organism's DNA** and **environment** combined act as a set of instructions to cells.

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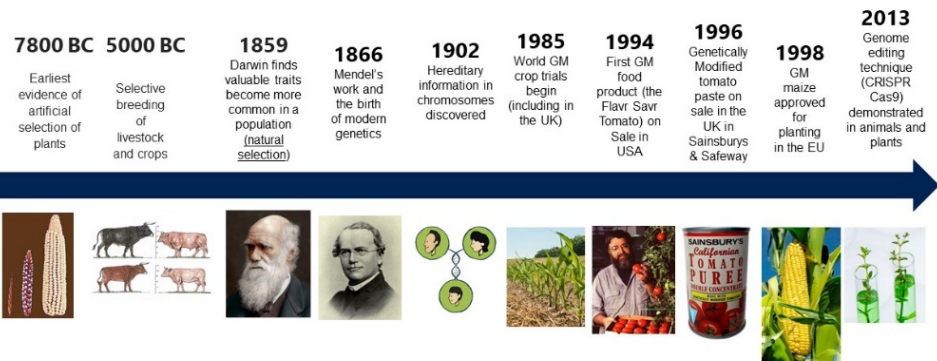
What is a genome and what is a gene?

- Living things are made up of **cells**. Plants and animals have many different cells with each cell type having their specialised functions
- **DNA** is often found contained **within the nucleus** of the cell
- **A genome** is the **complete set of the DNA code**, which is in each cell
- **Genes** refer only to the **sections of DNA code** (in the genome) that hold instructions to **make proteins** – it is these protein that serve the specialised function for the cell

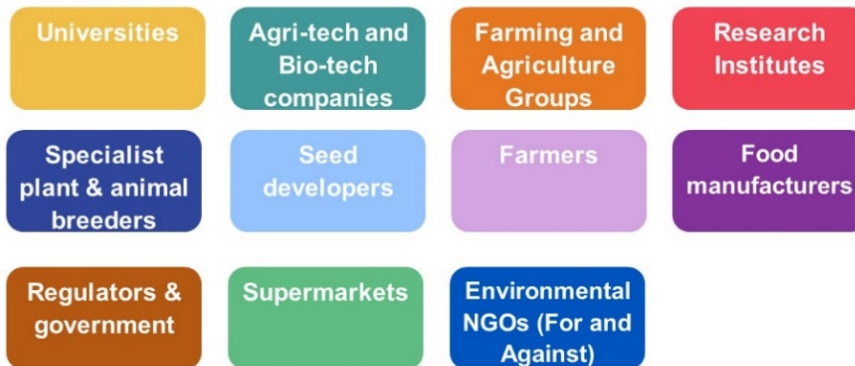


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Genetic discoveries / Technologies



Who is involved?



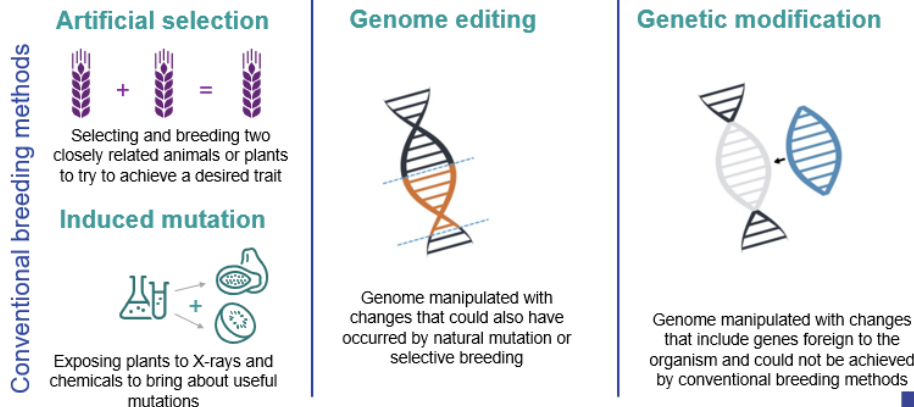
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Genetics for food improvement



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Breakout Session 2



© Ipsos | 20-01-2019 | Ipsos London Data Dialogue Workshop 11 (Draft 1) | Internal Use Only



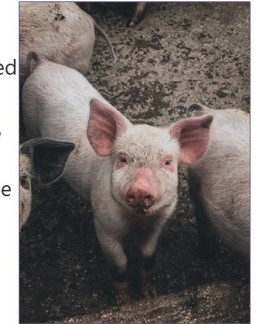
Case study A Holstein Friesian dairy cow

- **What was done?**
 - Dairy cow breeders intentionally combined two breeds: Holstein dairy cattle and black and white cattle.
 - This is done on a huge scale by individual breeders in order to increase profitability.
 - This resulting breed now produce far more milk than other cattle and make up 90% of all US dairy cows.
- **How was it done?**
 - Cows from each breed were selected to reproduce, then over many years, offspring with the desired traits were selected to breed using artificial insemination.
 - Because of artificial insemination, a single bull with these traits can father 50,000 female calves around the world!
 - Dairy breeders use genetic tracking to predict the traits of a bull's offspring.
 - Some studies indicate that the rapid increase in milk production achieved by this method has caused more cows to suffer from painful side effects – e.g. mastitis.



Case study B Disease resistant pigs

- **What was done?**
 - PRRSV is a common viral disease that kills many farmed pigs, especially piglets. The disease causes significant suffering for the pigs, reducing animal welfare, and causing a damaging financial impact for farmers.
 - Vaccines are available but are very limited in effectiveness.
 - Scientists changed a small section of the pig's DNA so that they were completely resistant to the virus.
- **How was it done?**
 - Scientists identified a specific protein in the pigs cells that allowed the virus to enter the cell.
 - They removed a precise part of the gene which produced that protein so that the protein no longer let the virus into the pig's cell.
 - The rest of that gene and the protein remained unchanged, resulting in healthier pigs with better welfare.
 - The meat is not currently available for sale on the market.



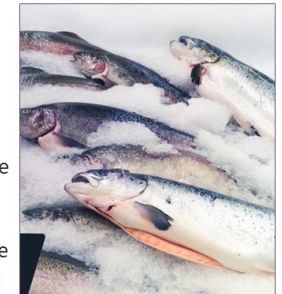
Case study C Pink pineapples

- **What was done?**
 - Fruit producer Del Monte have produced a new pineapple that is pink and tastes juicier, sweeter and less acidic than a traditional pineapple.
 - Branded as 'PinkGlow Pineapples' and marketed as 'Instagram-worthy' due to its appearance.
 - Currently available to buy in the US for \$49 each (£36).
- **How was it done?**
 - Lycopene is the natural chemical that makes red or pink colouring in tomatoes, watermelon and grapefruit. Pineapples also contain lycopene, but they also contain a chemical called beta-carotene which makes them yellow instead.
 - Del Monte introduced a gene from tangerine DNA that increases the amount of lycopene, as well as changing the pineapple's existing genes to reduce the enzyme that produces beta-carotene.



Case study D Faster growing Salmon

- **What was done?**
 - Naturally, Atlantic Salmon grow for just a part of the year. These salmon were adapted to grow all year round, reaching market size in half the time.
 - This method is cheaper to produce far more salmon than conventional methods. If popular with consumers this method could help reduce overfishing of wild salmon even as demand continues increasing.
 - These salmon are equally as healthy but could be more affordable for consumers.
- **How was it done?**
 - This new salmon was developed by introducing some specific genes from two other fish: a gene from a Pacific Chinook Salmon that regulates growth hormones, and a 'promoter' gene from an Ocean Pout, which turns certain other genes on or off
 - Together, these new genes meant the salmon had the high appetite and relevant hormones needed for growing 'switched on' all year round, rather than just for part of the year. There are legal and political challenges to this product caused by concerns that if they escaped to the wild they may threaten wild fish populations.



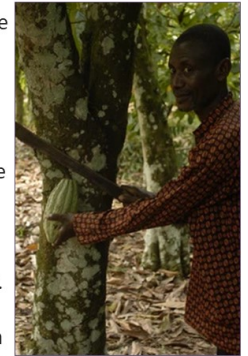
Case study E Coeliac-safe whole grain bread

- **What was done?**
 - Coeliac disease is an autoimmune disease that makes the immune system attack itself when gluten (found in wheat) is eaten. The disease causes damage to the lining of the gut, meaning that the body cannot properly absorb nutrients from food.
 - Gluten is in many products, so it can be hard to avoid it.
 - Scientists have produced a type of wheat that contains gluten but does not trigger the autoimmune reaction in coeliac sufferers.
- **How was it done?**
 - Wheat that is coeliac-safe while still suitable for baking bread is challenging, because the gluten is what causes bread dough to be stretchy enough. This means conventional breeding alone is not a precise enough method.
 - The autoimmune reaction was found to be caused by specific parts of the gluten called gliadins. Scientists have used CRISPR-Cas9 to delete these gliadins within the wheat's DNA, while keeping the rest of the gluten intact.
 - This product is not yet available to consumers.



Case study F Disease resistant chocolate (climate change)

- **What was done?**
 - Cocoa plants are sensitive to drought and crop disease. The plant may be extinct by 2080 because climate change is making the crop even more susceptible to disease.
 - Cocoa is one of the most important sources of income in Ghana, so the country's GDP and the livelihoods of thousands of small scale farmers could soon be badly damaged.
 - Many other globally popular foods face this threat, including coffee and bananas. This may impact the GDP of developing countries that export them.
- **How was it done?**
 - Cocoa pods grow on trees, which are very slow to breed. Therefore selective breeding will be too slow to achieve changes in time to beat these climate change effects.
 - Researchers removed a specific gene that suppresses the plant's disease response. In the testing stage, the new plants are showing strong disease resistance and are grow fast. The researchers hope to have the resilient crop available for farmers in West Africa in 5-10 years depending on barriers bringing to market.



Online community

Quiz questions

1. Which genetic technology, if any, is the following text describing?

Genes from one organism have been added to the DNA of another organism to achieve a new trait

- a. Genome editing
- b. Genetic modification
- c. Selective breeding
- d. None of these
- e. Don't know

2. Which genetic technology, if any, is the following text describing?

Scientists have changed a specific part of an organism's own genetic code to make an existing trait stronger, but they have not added any new genes to the DNA.

- a. Genome editing
- b. Genetic modification
- c. Selective breeding
- d. None of these
- e. Don't know

3. Which genetic technology, if any, is the following text describing?

Scientists have removed a part of the organism's genetic code, so that an existing trait of the organism no longer works.

- a. Genome editing
- b. Genetic modification
- c. Selective breeding
- d. None of these
- e. Don't know

4. Which genetic technology, if any, is the following text describing?

Farmers have bred two similar plants for their specific genetic characteristics, to create a new type of plant.

- a. Genome editing
- b. Genetic modification
- c. Selective breeding

- d. None of these
- e. Don't know

5. Is the following statement true, or false?

Some genome editing can achieve changes that could have happened through natural mutation or breeding over a longer time.

- a. True
- b. False
- c. Don't know

6. Is the following statement true, or false?

There are currently genome edited foods available in the UK.

- a. True
- b. False
- c. Don't know

7. Is the following statement true, or false?

There are currently genetically modified foods available in the UK.

- a. True
- b. False
- c. Don't know

8. To what extent are you concerned or unconcerned about genome edited food?

- a. Not at all concerned
- b. Not very concerned
- c. Fairly concerned
- d. Very concerned
- e. Don't know

9. To what extent are you concerned or unconcerned about genetically modified food?

- a. Not at all concerned
- b. Not very concerned
- c. Fairly concerned
- d. Very concerned
- e. Don't know

News articles

Please have a look at this news article.

Please click 'Add Markerboard Reply' below, and then click on the picture of a pin. Then you can then place green and red pins on the article by dragging the pin icon to the part of the article you wish to comment on.

- **Please use the green pins** to highlight parts of the article that you **agree with** the most in the article. Please add a comment to each pin to explain why.
- **Please use red pins** to mark parts of the article that you **disagree with**. Please add a comment to each pin to explain why.

Click the article below to zoom in and place the pins.

Search

UK edition

The Guardian

Gene editing

Gene editing of crops and livestock may soon be permitted in England

Fiona Harvey Environment correspondent

Thu 7 Jan 2021 06:00 GMT

Gene editing of crops and livestock may soon be permitted in England for the first time under a **consultation launched by the government** on Thursday.

Ministers said **changing the current strict rules**, which originate from the EU and make gene editing for crops and livestock **almost impossible**, would bring widespread benefits to consumers and farmers, including healthier food, environmental improvements and better animal welfare.

But some environmental and animal welfare groups raised concerns that loosening the rules could lead to lower animal welfare, for instance if the technology was used to promote faster growth over animal health, or to enable livestock to be kept in crowded conditions.

Gene editing involves cutting and splicing sections of DNA within a single genome to bring about changes that were previously possible only through lengthy selective breeding of plants and animals. This is a different process from genetic modification, which involves introducing DNA from one species into another, and which will continue to be subject to a near-total ban.

George Eustice, the secretary of state for environment, food and rural affairs, said: "Gene editing has the ability to **harness the genetic resources** that mother nature has provided, in order to tackle the challenges of our age. This includes breeding crops that perform better, reducing costs to farmers and impacts on the environment, and helping us all adapt to the challenges of climate change."

But in 2018 the European court of justice controversially ruled that **gene editing was essentially the same as genetic modification** and should be subject to the same tight rules. GM crops are subject to a near-total ban in the EU, though a few have received permits.



Through gene editing, crops could be developed that require fewer pesticides or fertilisers, or which have enhanced nutritional properties. For instance, tomatoes that can lower blood pressure have recently been **licensed for sale in Japan**. Animal genes could also be edited in ways that would allow the breeding of livestock that was **resistant to key diseases**, which would reduce the need for antibiotics and so the likelihood of **developing resistant superbugs**.

However, Peter Stevenson, chief policy adviser at the campaigning group Compassion in World **Farming**, said the ways in which livestock had been bred for profitable traits in the past suggested the development of gene editing would be harmful to animals. He pointed to genetic selection for broiler chickens, whereby the fast growth rates gave rise to leg abnormalities and lameness, and in laying hens, selecting for high egg production caused osteoporosis, leaving the hens vulnerable to bone fractures.

Breeding animals resistant to diseases would only encourage farmers to stock them more intensively, he added, leading to **overcrowding** and lower animal welfare. "This is pushing us down the industrial farming route," he warned. "It is entrenching an antiquated system of farming that we would do better to abandon."

Gareth Morgan, head of farming at the Soil Association, said: "We question the speed with which the government is using Brexit to pursue a deregulatory agenda in this area. It is vital that citizens and farmers who do not wish to eat or grow gene-edited crops or animals are offered adequate protection."

Link: [Gene editing of crops and livestock may soon be permitted in England](#)

Are you ready for Frankenstein food? Government consults public on future of gene editing to improve crops and livestock

- The consultation will consider whether gene edited produce should be available
- Gene edited crops would need to be nutritionally superior to normal produce
- It is different to genetic modification in that it just speeds up selective breeding
- The consultation will run for ten weeks from January 7 to March 17

By RYAN MORRISON FOR MAILONLINE

PUBLISHED: 00:00, 7 January 2021 | UPDATED: 12:21, 7 January 2021

Frankenstein foods created by editing genes in crops and livestock could be on the plate in future as the government opens a consultation into uses of the technology.

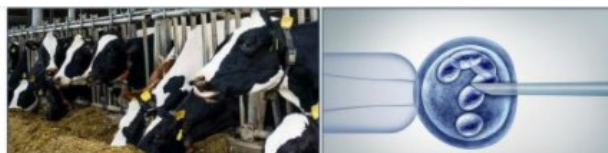
Gene editing is a process that enables changes to the traits of plants and animals more quickly than traditional selective breeding - which has been used for centuries.

It is different from genetic modification (GM), in which DNA from one species is introduced to a different one.

A 2018 EU ruling regulated gene edited food as stringently as it did for GM organisms, but the government have proposed pulling back from that.

Environment Secretary George Eustice says the current rules have stifled the technology's potential and has opened the topic up for public consultation.

Under the plans being put out for consultation, the rules could be changed in England to allow gene editing research to be used to produce beneficial crops and livestock, with strong health and safety rules in place, officials said.



The Government said gene editing makes the same kind of changes to plants and animals that occur naturally and through traditional breeding.

They said that the consultation would gather information to make sure it was safe and that food and environmental standards are not relaxed.

Lindsay Duncan, World Animal Protection farming campaigns manager said they were concerned editing genes of farm animals for more profitable traits would be used as an excuse to cram more animals together on factory farms.

'The industry already selectively breeds chickens that grow too fast and consistently puts profits before animal welfare,' Duncan said.

'We don't need gene editing to improve animal welfare we need to end factory farming, reduce meat consumption and farm animals in a more sustainable and humane way.'

Speaking to the online Oxford Farming Conference, Mr Eustice will say: 'Gene editing has the ability to harness the genetic resources that mother nature has provided in order to tackle the challenges of our age.'

'This includes breeding crops that perform better, reducing costs to farmers and impacts on the environment, and helping us all adapt to climate change.'

'Its potential was blocked by a European Court of Justice ruling in 2018 which is flawed and stifling to scientific progress.'

'Now that we have left the EU, we are free to make coherent policy decisions based on science and evidence. That begins with this consultation.'

Link: [Are you ready for Frankenstein food? Government consults public on future of gene editing to improve crops and livestock](#)

Science & Environment



Consultation launched over gene edited food in England

By Claire Marshall

Environment correspondent, BBC News

The UK government has launched a consultation on using gene editing to modify livestock and food crops in England.

Gene editing alters the DNA of organisms and, until now, its use had been tightly restricted under EU law.

Environment Secretary George Eustice said the approach could be used to develop crops that are more resistant to disease and extreme weather.

He said it could also lead to the production of healthier food, but some are opposed to the technology.

Critics say it creates entirely new organisms, and maintain that stringent regulation is vital.

The Environment Secretary said the technology mimicked the natural breeding process, speeding up what farmers have done for centuries by picking the strongest and healthiest animals or plants to breed from.

Mr Eustice said that gene editing raised far fewer ethical or biological concerns than other forms of genetic engineering. He said the organisms created by gene editing could have been created naturally and so "respected the laws of nature".



Prof Katherine Denby, from the University of York, described genome editing as a "powerful tool" that could help tackle a range of challenges in the UK and food system.

She said: "Its impact depends on how it is used, what specific changes are made in what organism. But its precision and speed have the ability to transform the development of new crop and animal breeds, and help drive more sustainable food production."

The Soil Association (SA) said it welcomed technological innovation, but that Brexit shouldn't be used "to pursue a deregulatory agenda".

Gareth Morgan, head of farming and land use policy at the SA, said: "Gene editing is a sticking plaster - diverting vital investment and attention from farmer-driven action and research which could be yielding results, right now."

Dr Adrian Ely, reader in technology and sustainability at the University of Sussex, said that allowing gene editing in the UK "would require us to open up indiscriminately to GE (gene edited) food imports from around the world".

He said: "Claims about gene editing's benefits for the UK's nature and the environment are subject to numerous assumptions and uncertainties. We need to take the time to consider these carefully, rather than accepting them without interrogation."

Link: [Consultation launched over gene edited food in England](#)

What's in your cupboard

This is a summary of the key questions within the activity that have been referred to in the body of the report.

How much attention do you pay to the labelling?

- a) I pay a lot of attention
- b) I pay some attention
- c) I pay very little attention

What in particular do you pay attention to when you look at a product label?

- a) Allergy information
- b) Country of origin
- c) Nice label design
- d) Use by date
- e) Convenience (for example, short cooking time)
- f) Ingredients
- g) Nutrition info (for example, calories, fibre, protein)
- h) Vegan/vegetarian info
- i) Animal welfare assurances (for example, free range)
- j) Environmental impact assurances (for example, sustainably grown)
- k) Organic info
- l) Information for restricted diets (i.e. Kosher, Halal)
- m) Price
- n) A familiar or trusted brand
- o) Other (please specify)

Now please go and have a look in your food cupboard or your fridge, for something that you brought home in the last couple of weeks.

Please take a photo of the label and click 'add image' below to upload it here.

- Is there anything on the label that you hadn't noticed before?
- Is there anything that you think is missing, that you would like to be included on this label?
- Is there any information on this label that you don't fully understand?

Finding genome editing information online

This is a summary of the key questions within the activity that have been referred to in the body of the report.

Before we start, how interested are you in finding out new information about genome editing?

- a) Very interested
- b) Fairly interested
- c) Not very interested
- d) Not at all interested

Please select the specific things that you find interesting about the subject of genome editing (select all that apply):

- a) The science of how genome editing works
- b) UK genome edited food regulation, and how that may change
- c) Political debates about genome editing

- d) Genome edited food regulation in other countries
- e) Potential benefits and risks for consumers
- f) Potential benefits and risks for the UK economy
- g) Potential benefits and risks for crops and livestock
- h) Potential benefits and risks to the environment
- i) When and where genome edited foods may become available to consumers in the UK
- j) Something else (please specify)

How confident do you feel in finding accurate and unbiased information about genome editing and food online?

Accurate = all of the facts included are correct and truthful.

Unbiased = the information is written from a neutral point of view and is not trying to convince you of either a negative or positive opinion on the topic.

- a) Very confident
- b) Fairly confident
- c) Not very confident
- d) Not at all confident

OK, now please take 5-10 minutes to search for some information that you find interesting or useful about genome edited food. When you find an article that you find interesting or useful, you can paste the web page's URL in the text box below.

- **What words** did you search for when looking for this information?
- How easy or difficult was it to find this information?
- Thinking about the reliability of this information, how much do you trust that it is not biased?
- Do you feel that this article includes all of the important points about the topic?

Workshop 2 Materials

Discussion guide

Discussion guide for Workshop 2 (3 hour event)

Objectives:

- Explore what consumer concerns are regarding genome edited food, now that they understand what it is, and why they hold these concerns
- Explore consumers reactions to a policy change that would separate genome edited food from GM food (i.e. the de-regulation of genome edited food which would mean it would not have to be labelled so)
- Explore how willing consumers would be to purchase and consume genome edited food if this were the case
- Explore consumer expectations regarding the regulation of genome edited food, as well as which policy approaches would be most likely to improve consumer acceptability of genome edited food and under which circumstances might consumers trust that it is safe.

This is a guide to the discussion including the exercises we will use and the discussion's broad flow. Questions are prompts rather than specific questions to administer – each facilitator is likely to ask slightly different questions to follow and probe into the comments of participants. Specialists will also join in the general discussion where asked by participants or facilitator to come in.

NB: Participants will be put into different groups to those they were in for workshop 1 for the break-out room discussions.

Timing	Session	Question areas and materials
6pm	Arrival	Participants enter the 'zoom room' and any that have not already done so are asked to change their screen name to first name and initial of their surname.

	(5 mins) As participants arrive in the waiting room, they will be allocated into break-out rooms	
6.05-6.10pm	Plenary 1: Quick introduction and reminder of what we have done so far. (5 mins)	Welcome and Introduction Lead Moderator show slides “You should all have the box of workshop materials with you. This contains some exciting products which you’ll discuss later on. However, it’s really important that you do not eat or drink anything in there yet. Please listen to your moderator, who will discuss some important information about these products with you before you eat or drink them” Slide 2: Reminder of why we are here (FSA’s big question) and who is in the workshop Slide 3: The ground rules. These lay out some of our expectations of you. Slide 4: Housekeeping. Slide 5: A reminder of what we learnt about in workshop 1 (the difference between genome editing and GM and conventional breeding methods), as well as reviewing some case studies looking at different methods in different situations.
6.10-6.25pm	Breakout 1: Reflections on	Moderator to introduce themselves and do a quick round of introductions (as we will have new groups)

	<p>workshop 1 and the online community</p> <p>(15 mins)</p> <p>Check that you have 5 participants and continue to monitor this throughout.</p>	<ul style="list-style-type: none"> • What was the most interesting thing you learnt in the first workshop and why? • How did you find the online community activities? <ul style="list-style-type: none"> • Did any of them make you feel differently about genome editing? (If so which one(s) and why?) • Has anything (else) since the first workshop made you feel differently about genome edited food? <ul style="list-style-type: none"> • If yes, what and why? • Have you spoken to people you know about genome editing since the first workshop? <ul style="list-style-type: none"> • What did you/they say about it?
6.25-6.45pm	<p>Breakout 2: Key concerns regarding genome editing</p> <p>(20 mins)</p>	<p>Moderator: “We’re going to move on now and discuss how you feel about genome edited food.”</p> <ul style="list-style-type: none"> • To what extent do you agree or disagree that genome editing is comparable to conventional breeding? Why/Why not? <p>If needed as challenge:</p> <p>Arguments for:</p> <p>1) Small or single points edits, or changes, introduced by genome editing can be identical to those occurring naturally or achieved through conventional breeding but can be made more quickly and precisely.</p>

		<p>2) Changes made by GE can only be identified by computer analysis if the person looking for this change had been told that the change had been made by GE. Otherwise it is not easily distinguishable from conventional methods.</p> <p>Arguments against:</p> <p>3) However, just because these changes COULD have happened naturally, it does not mean they would have, and some people argue that it is not natural and is unnecessary human intervention.</p> <p>4) Crops developed using precise techniques like genome editing may have less natural variation, due to the way they are produced, compared to some conventional breeding methods.</p> <ul style="list-style-type: none"> • What concerns, if any, do you have about genome edited food now that you know more? <ul style="list-style-type: none"> • What reassurances would you need to make you less concerned? • Social impact prompts: If genome edited products became common place and therefore cheaper than non -genome-edited alternatives – it may mean that it costs more to avoid genome edited products. At the same time, genome editing could be used to create a luxury or very beneficial food that is expensive and therefore only affordable to those with higher incomes. What do you think about this potential impact on inequality? • Political impact prompts: Do you have any concern about political influences on the regulation or public acceptance of genome edited foods in the UK? • Economic impact prompts: There are also potential economic impacts of genome editing, for example who will make more or less profits due to changes in food production in the UK? • Environmental impact prompts: If some genome -edited crops become more profitable it might lead to more monocultures (growing one type of crop at a time in
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		<p>a specific field, which can be associated with destroying soil nutrients which also means that farmers have to use harmful chemicals to protect the crops from further damage). However, crops may also be edited to be less reliant on harmful chemicals... - How do you feel about this?</p> <ul style="list-style-type: none"> • Safety impact prompts: Because this technology is still fairly new, some people argue that there unknown risks and also could be unintended consequences - How do you feel about this? • If participants mention risks associated with using the technology : Have you thought about how similar risks apply to conventional breeding techniques? (Moderator to refer to lists above). <ul style="list-style-type: none"> • Concerning animals, what assurances would you need to make you less concerned? • Concerning plants, what assurances would you need to make you less concerned? • Modertaor to establish whether concerns are more about animal welfare than they are about genome editing per se.
6.45-6.55pm	Plenary 2: An introduction to food regulation and labelling (10 mins)	<p>Presentation from Sabrina Roberts (FSA) on regulation and labelling of GM food</p> <p>Slide 7: Genetically modified food regulation and labelling</p> <p>Slide 8: Genome edited food regulation and labelling</p>
BREAK	6.55-7.05pm	

7.05-7.30pm	Break-out 3: Reflections on regulation and labelling of genome edited food (25 mins)	Moderators: “Welcome back, we’re going to reflect on the information in the presentation we had just before the break”. <ul style="list-style-type: none"> • First of all, does anyone have any questions about any of the information in that presentation? • How concerned or unconcerned would you be about the more relaxed regulation of genome edited food, compared to genetically modified foods? • If genome edited food is regulated in a different way (to genetically modified food), this could mean that it is <i>not</i> labelled as genome edited or containing genome edited ingredients. How do you feel about this? <ul style="list-style-type: none"> • How concerned or unconcerned would you be if genome edited food was not labelled?
7.30-7.55pm	Break-out 4: Labelling (25 mins)	Labelling warm up (5 mins only) Moderator: “Now we are going to discuss food labelling.” MODERATOR: quickly reflect on ‘What’s in your cupboard’ findings: <ul style="list-style-type: none"> • Some of you may have taken part in the activity online called ‘What’s in your cupboard’. In that activity many people said they noticed something on the label of a product from their cupboard that they hadn’t before – for some the country of origin wasn’t what they had assumed, or some surprising ingredients such as sweet potato in a yogurt. There were also some things on the labels that people said they didn’t really understand, such as terms like ‘homogenised’ E numbers, or vague stickers such as ‘FAD free’ or ‘British Lion quality’.

		<ul style="list-style-type: none"> • How much attention do you think you generally pay to the labelling of food and drink products that you buy? <ul style="list-style-type: none"> • How likely are you to spot that a product is labelled as genetically modified? <p>Show slide 12: GM products on sale in the UK.</p> <p>How many of the items on the screen have each of you eaten? All of them are available in the UK.</p> <ul style="list-style-type: none"> • Did you know that all of these contain genetically modified ingredients? • Did you notice this information on the label? • Is anyone surprised by this? Why/why not? <p>Box opening! (20 mins)</p> <p>In a minute we are going to have a look at what everyone received in their box!</p> <p>Before we do, I have some important points to clarify:</p> <ul style="list-style-type: none"> • Do not eat or drink these just yet. First we will discuss them and the labelling. After that, I will need to confirm some important information about the ingredients with you. • The items in the box include different approaches to labelling, which we have created for this workshop. It's very important that we are transparent here: not all the labelling options we will look at today are examples of what might happen in the UK. However, we want to reflect on what matters most to you, and therefore have included a range of labelling types.
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		<ul style="list-style-type: none"> • Labelling of food is split across various government departments. The FSA look at food safety labelling. Defra look at Food standards- labelling, composition, warnings and organic food. DHSC look at nutrition, health claims and supplement labelling. Any labelling proposals would involve cross government working <p>Moderator to refer to their own list of products (to generate from the product matrix). Take a minute to check you are clear on what you are doing next.</p> <p>Show slide 13: Please take 3 minutes to look at the products and menus in your box alone, but do not eat or drink them yet.</p> <ul style="list-style-type: none"> • Have a think about what the packaging and labelling tells you about this product, and how useful, user friendly and important it is. What would you think if you were looking at this and considering buying/ordering it? <p>If participants ask whether these products contain genome edited ingredients: “For the purpose of this exercise, let’s assume that all of the food and drink products and menus contain some ingredients that are genome edited.”</p> <p>WAIT 3 MINS.</p> <p>OK now I’ll go through each product and see who received it and what they thought.</p> <p>For the purpose of this exercise, let’s assume that all the food and drink products and menus contain some ingredients that are genome edited.</p> <p>Prompt for each UNIQUE item: (1 min per item as only one person received it)</p> <ul style="list-style-type: none"> • Who received this? • What was your first impression? • What did the labelling tell you?
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		<ul style="list-style-type: none"> • How appropriate is this labelling for a genome edited product? • Would you buy this? <p>Prompt for the other 6 items: (2 mins each – as lots of people received them)</p> <ul style="list-style-type: none"> • Who received this? • What was your first impression? • What did the labelling tell you? • How appropriate is this labelling for a genome edited product? • Would you buy this? <p>“We are going for a break now, but please do not eat or drink your items yet. When we come back there is still some important stuff to discuss about the ingredients of these items before you do.”</p>
Break: 7.55- 8.05pm		
8.05- 8.30pm	Break-out 5: Labelling cont.... 25 mins	Broader labelling discussion (15 mins) Moderator: “Now I want you to think about the products in your own box as well as the ones other people have just shown the group”. Ask each of these to the room, rather than from each participant in turn. Are any of these labels worrying or unacceptable to you? <ul style="list-style-type: none"> • What are you worried about / what don't you like? • How worried are you? PROBE FOR STRENGTH OF FEELING.

		<ul style="list-style-type: none"> • Can you think of types of people who might be worried about any of these labels? (PROMPT: people who have allergies; people who prioritise consumer choice over anything else). • What would you change on this label? <p>Which labelling did you think was most acceptable?</p> <ul style="list-style-type: none"> • What is it that you like about this label? • Does everyone else agree, or not? • Would this be equally as practical/appropriate for different types of food product/customer? <p>Willingness to eat the products (10 mins) (ensure time for this)</p> <p>Moderator: “OK, hands up if you fancy trying the food/drink that you have received in your box – you can do so in a minute, but please don’t eat it just yet, just show your hand”.</p> <ul style="list-style-type: none"> • Which item are you most interested in trying? • What’s appealing about it? <p>Is anybody not planning to eat theirs?</p> <ul style="list-style-type: none"> • Why not? What is off-putting? • IF because it contains genome edited ingredients: What are your concerns? <p>Moderator: “OK, the consumable items that you have received do not actually contain genome edited ingredients. The envelop in your box has the actual ingredients listed,</p>
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		<p>so it's important that you read that before eating the products in your box - especially if you have any allergies or dietary requirements."</p> <ul style="list-style-type: none"> • Can each of you show me that envelope so that I know you have found it? • Please do now all confirm that you understand that the accurate ingredients for the products you have received are in that envelope: ENSURE EACH HAS CONFIRMED THAT THIS IS CLEAR. <p>Moderator: "Great, you may now dig in if you do indeed wish to!"</p> <ul style="list-style-type: none"> • In a moment we will be going back to the main room where you won't need to talk for 10 minutes in case you want to snack then!
8.30-8.40pm	<p>Plenary 3: Break-out room feedback</p> <p>(10 mins)</p>	<p>Plenary: Reflections on regulation and labelling</p> <p>Each moderator to spend 2 minutes summarising what their group felt in relation to the following:</p> <ul style="list-style-type: none"> • How concerned people would be if genome edited food was regulated in a different way to genetically modified food, or wasn't labelled as so • How willing people would be to buy and eat genome edited food under these circumstances • What mattered most to people throughout the labelling activity <p>Lead moderator: "We are about to go into the final breakout session of the workshop. We'll end on time, but before we send you off to breakout rooms, we want to say a huge thank you for your time and tremendous contributions!"</p>

<p>8.40-9.00pm</p>	<p>Break-out 5: Trustworthy regulation and labelling</p>	<p>Moderator: “Our final discussion now, following everything that we have talked about in this session, is about the regulation and labelling of genome edited food going forward” (15 mins)</p> <ul style="list-style-type: none"> • What might encourage you/other people to buy and consume genome edited food in the future? • And what would need to be in place for you/other people to trust that genome edited food and drink is safe to consume? <ul style="list-style-type: none"> ○ What are your expectations around the regulation of these products? ○ What are your expectations around the labelling of these products? • Given it has responsibility for protecting public health and ensuring that food is safe, what are the key messages that you would want the FSA to feed back on your behalf? <p>Moderator: Participants to complete their knowledge quizzes for final time and to capture this and send it back to us, as before.</p>
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Slides

Consumer views on genome editing

Public workshops



Ipsos MORI



The Food Standards Agency (FSA) wants to better understand consumer (public) views on genome edited food

We are interested in your **thoughts, views, concerns** and **questions!**



You!

FSA (the client)

Experts



Ipsos MORI

Observers

Note takers

Ipsos MORI



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Workshop 1

- We learnt about the difference between genetic modification and genome editing:
 - **Genetic modification:** genes from one organism are added to the DNA of another organism to achieve a new trait.
 - **Genome editing:** precise edits are made to an organism's own DNA.
- We also learnt about similarities and differences between genome editing and conventional breeding methods.
- We discussed some of the benefits and risks associated with the different techniques.



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Breakout Sessions 1 and 2



Robyn.aldous@ipsos.com



Regulation & labelling of Genetically Modified (GM) food



- For genetically modified (GM) foods to be considered safe in the UK they are tested to ensure that they:
 - do not present a risk to human health (e.g. increased allergens or toxins)
 - do not mislead consumers
 - do not have less nutritional value than the non-GM versions
 - have passed an environmental risk assessment (DEFRA).
- In the UK, genetically modified foods **must say on their label** if they:
 - contain or consist of genetically modified organisms (GMOs)
 - contain ingredients produced from GMOs.
- GM food sold 'loose', must have information displayed immediately next to the food indicating that it's GM.
- Non-compliance will lead to penalties and/or convictions, with products removed from the market.
- Products such as meat, milk and eggs produced from animals that are fed on GM feed do not need to be labelled as GM.

Carbohydrate	58.9g
of which sugars	53.9g
Protein	9.8g
Salt	0.8g

INGREDIENTS: MILK CHOCOLATE FLAVOUR COATING (BPA) (SUGAR, COCOA BUTTER, COCOA MASS, SKIMMED MILK POWDER, MILK FAT, LACTOSE, MILK, EMULSIFIERS: SOYA LECITHIN, E476), PEANUT BUTTER (CREAM, CENTRE JARNS, PEANUTS, SUGAR, LACTOSE, MILK, EMULSIFIERS: SOYA LECITHIN, E476).

PRODUCED FROM GENETICALLY MODIFIED SOYABEANS AND SOYABEANS.

SEE INGREDIENTS HIGHLIGHTED IN BOLD.

STORAGE: TO KEEP THIS PRODUCT IN PERFECT CONDITION STORE IN A COOL, DRY PLACE.

Reese's miniature cups sold in Aldi

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Regulation & labelling of Genome edited food



- There are no genome edited foods available in the UK, although some are available elsewhere in the world.
- The European Union (EU) considers genome edited food to be subject to the same regulations as genetically modified food.
- However, some non-EU countries (America, Argentina, Japan) disagree, and instead regulate genome edited food products separately from genetically modified foods.
- Leaving the EU means the UK has the opportunity to do things differently, and decide how to regulate and label genome edited food.
- The UK government's view is that some food produced by genome editing should not be regulated as genetically modified food, if they could have been produced by conventional breeding methods.
- The government are running a consultation, to hear what the public think about genome edited food being labelled differently from genetically modified food or possibly not at all.
- Genome edited foods will only be allowed to be sold in the UK after being scientifically tested to ensure they do not present a risk to health and do not to mislead consumers.

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Have a look at the items in your box!

DO NO EAT OR DRINK ANTHING JUST YET

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Mock labels and menus




ORGANIC BANANA CHIPS

WHOLE HEALTH

A SWEET AND CRUNCHY SNACK

100G

Typical Values per 100g	
Energy (kJ)	1845
Energy (kcal)	441
Total Fat (g)	26.5
of which Saturates (g)	26.5
Carbohydrates (g)	47.1
of which Sugars (g)	29.4
Fibre (g)	5.9
Protein (g)	2.9
Salt (g)	<0.01

Ingredients: Bananas, coconut oil, cane sugar

Packed in an environment where gluten, nuts + seeds are present

Contains genome edited bananas

Country of Origin: Philippines

Store in a cool dry place away from direct sunlight

Suitable for both vegan and vegetarian diets

This packaging is 100% recyclable

Item	Useful information
Banana chips	Label has a GE symbol, and clearly state that t contains genome edited bananas. It's also labelled as organic.

BETTER BEER CO.

5.4% ABV

Environmentally Friendly LAGER

At Better we brew beer that tastes great and does good.

We believe the two key liquids in life are beer and water. In order to ensure there is enough of both for all of us on the planet, our Lager is crafted using genome edited yeast instead of hops – saving 50 pints of water with each pint. Full hoppy flavour without the hops; a great taste with less harm to the environment.

INGREDIENTS—water, malted barley, yeast

Item	Useful information
Beer	This brand is proud of it's use of genome editing for environmental reasons, so it has a whole paragraph explaining why they have used genome edited ingredients. The label is meant to give the idea that they aren't obligated/regulated to declare it, but it suits their brand ethos to do so.



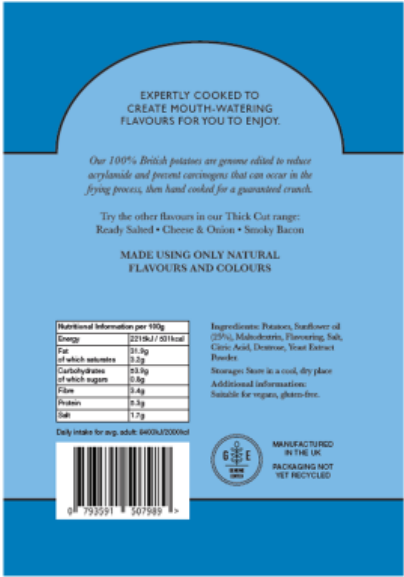
Item	Useful information
Chocolate biscuits	This contains the GE symbol, but does not say genome edited in the text or ingredients. The symbol includes the words 'Genome edited' so the consumer could google/ask about it if they wanted to know more.



Item	Useful information
Fancy chocolate	This product doesn't list genome edited ingredients in the ingredients list, but it does have the GE symbol. However this symbol doesn't use the words 'Genome edited' so if the consumer didn't already know the symbol, they might not know what it means.



Item	Useful information
Coffee beans	This follows current regulation by listing 'genetically modified' in the ingredients, as genome edited ingredients would currently be classified that way. However they have also included the GE symbol – maybe to help differentiate from GM foods. Is it helpful or confusing to have both?



Item	Useful information
Crisps	This packet includes the GE symbol, and explains the genome editing change made and reason why in the italic text.

HAPPY EARTH

FRUIT CRUNCH MUESLI

banana | apple | toasted coconut



NO ADDED SUGAR

TOTALLY VEGAN

Nutritional Information

Typical values per 100g	
Energy (kcal)	1587
Energy (kJ)	379
Protein (g)	10.1
Fat (g)	9
Saturates (g)	3.65
Carbohydrates (g)	64.49
Sugars (g)	10.2
Sodium (mg)	0
Fibre (g)	8

Genome Edited Ingredients Information

Raisins	Grapes edited to be resistant to disease
Peanuts	Edited to be allergen-free and safe for all
Banana Chips	Edited to be vitamin A enriched and more resistant to climate change



HIGH IN FIBRE • VEGAN • GREAT SOURCE OF PROTEIN

Our Fruit Crunch Muesli is a carefully selected and finely crafted blend of toasted & malted wheat flakes, jumbo oats and barley flakes mixed with juicy raisins, sweet banana chips, flaked apple, roasted peanuts and hazelnuts, and toasted coconut. Sweet and crunchy it's the perfect energising and filling breakfast.

Ingredients: **Wheat Flakes**, Barley Flakes, Raisins (16%), Jumbo Oats, Banana Chips (12%), **Peanuts** (6%), **Hazelnuts** (4.5%), Toasted Coconut, Flaked Apple (3%)

Allergy advice: For allergens, including cereals containing gluten, see ingredients in bold. May also contain other nuts.

At Happy Earth we pick ingredients that are best for you and best for our earth. To learn more about our Genome Edited ingredients visit www.happyeartfoods.com/genomeeditingdeclaration

• 100% RECYCLABLE •

Item	Useful information
Fancy cereal	This has a lot of info on the label. It has the GE symbol, and a breakdown table of each edited ingredient and the type of genome edited change made, and it directs to a page on the brand's website for more info.

EDIBLE CEREAL

Fortified using rice adapted to be high in vitamins & iron. Using crop innovation to boost your child's growth and health, for all the nutritional benefits without anything artificial

Ingredients: Rice, Sugar, Salt, Barley Malt Flavouring, Vitamins & Minerals: Niacin, Iron, Vitamin B6, Vitamin B2 (Riboflavin), Vitamin B1 (Thiamin), Folic Acid, Vitamin D, Vitamin B12

Suitable for vegetarians.

Storage: Store in a cool dry place

Recycling Info: Card Widely Recycled

Free From Artificial Colours
Free From Artificial Flavours

Enjoy as part of a varied and balanced diet and a healthy lifestyle.

High in Vitamins & Iron

HOW MANY STARS CAN YOU COUNT ON THIS PACK?

04 753618 222215

Nutritional Information

Typical values 30g serving	%RI*
Energy / 493kJ 116kcal	
Fat / 0.4g	
of which saturates / 0.1g	
Carbohydrates / 26g	
of which sugars / 2.4g	
Fibre / 0.6g	
Protein / 2.1g	
Salt / 0.3g	
Vitamin D / 8.4µg	167%
Thiamin (B1) / 0.91mg	83%
Riboflavin (B2) / 1.2mg	83%
Niacin (B3) / 13.3mg	83%
Vitamin (B6) / 1.2mg	83%
Folic Acid (B9) / 165µg	83%
Vitamin B12 / 2.1µg	83%
Iron / 8.0mg	57%

*Reference intake of an average adult (8400kJ/2000kcal)

Item	Useful information
Kids cereal	This describes the change but doesn't call it 'genome editing' – it instead refers to 'crop innovation' and 'adapted rice'. However it does also include the GE symbol.



Item	Useful information
Plant based burger	This includes the GE symbol and also follows current regulation by marking all relevant ingredients as genetically modified.

Packaging: We care about the environment which is why we always use the least packaging possible. This carton is sourced and made from sustainable forests. Please recycle this packaging.



MEALS BEYOND MEAT

Meat-free burgers made with soya, pea and rice proteins. For a mouthwateringly succulent bite that is deliciously vegan.

Cooking instructions: Remove all packaging. Add oil to a frying pan or fire up the BBQ. Cook your burgers for approximately 6-7 minutes turning occasionally. Ensure your food is piping hot, add your favourite toppings and enjoy.

Pack contains 2 servings

Ingredients: Water, Soya Protein Concentrate*, Pea Protein, **Soya Protein Isolate***, Rapeseed Oil, Shea Oil, Coconut Oil, Chicory Root Fibre, Thickener: Methyl Cellulose, Caramelised Carrot Concentrate, Carrot Fibre, Rice Protein**, Salt, Flavouring, Vegetable and Fruit Extracts (Beetroot, Radish, Tomato), Yeast Extracts, Carrot Concentrate, Emulsifier: **Soya Lecithin***, Antioxidant: Ascorbic Acid, Vitamins and Minerals (Niacin, Zinc, Iron, Vitamin B6, Vitamin B12, Vitamin B1, Vitamin B12)

*Produced from genetically modified soya
**Produced from genetically modified rice
These crops are Genome Edited to be more sustainable and resistant to diseases

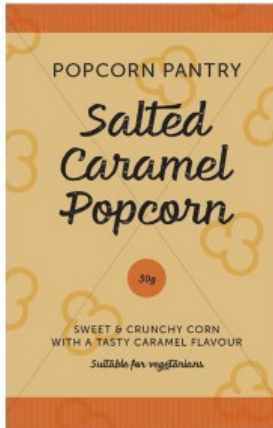
For allergens, see ingredients in **bold**

Storage: For use by, see top of pack. Keep refrigerated, once open consume within 24 hours and do not exceed the use by date. Suitable for freezing. Freeze on day of purchase and use within 1 month. Once defrosted (in a refrigerator) use within 24 hours. Do not re-freeze.

Made in the United Kingdom with ingredients from the EU and non-EU

Nutritional Information per 100g			
Energy	957kJ / 230kcal	Fibre	3.7g
Fat of which saturates	14.8g 4.7g	Protein	17.1g
Carbohydrates of which sugars	5.3g 0.3g	Salt	1.49g

*Reference intake of an average adult (8.400kJ/2000kcal)



Item	Useful information
Popcorn	This does not declare that it is genome edited in any way.



Item	Useful information
White wine	This uses the GE symbol only – but with text in the symbol so consumers could google/ask for the meaning.

THE CHIP INN

Traditional English Fish & Chips
A family name in fish and chips for over 50 years

Cod & chips £7.50 / £8.90	Regular chips £2.20
Haddock & chips £7.90 / £9.50	Large chips £2.95
Plaice & chips £9.20	Mushy peas £1.55
Scampi & chips £7.50 / £8.90	Battered sausage 1.95


Opening times
Mon, Tues, Wed & Thurs 11.30am – 9.30pm
Fri & Sat 11.30am – 10.30pm

16 West Street, Fareham, Hampshire PO16 0HF





































May contain Genome Edited ingredients,
text GE INFO to 65590 for more information


Item	Useful information
Fish and chips menu	This menu invited customers to text an info number for more details about it's genome edited ingredients – is that user friendly? Would they do this is they were picking up a takeaway?

BITES		
	Chips and Salsa	£5
	Chips and Guacamole	£7
	Nachos Platter	£9
	Chicken Quesadilla	£6
	Corn Elote Bowl	£4
TACOS		
	Pork Carnitas Tacos (3)	£9
	Chicken Tinga Tacos (3)	£9
	Garlic Shrimp Tacos (3)	£10
	Potato & Black Bean Tacos (3)	£7
DRINKS		
	Classic Margarita	£9
	Raspberry Margarita	£10
	Passion Fruit Margarita	£10
	Pacifico Beer (355ml)	£4
	Sol Beer (355ml)	£4
	Coca-Cola / Sprite	£2
SWEETS		
	Cinnamon Churros	£5
	Flan Mexicano	£7
	Horchata Ice Cream	£7
 All our ingredients are non-GMO		

Item	Useful information
Mexican menu	This states that all its ingredients are non-GMO, and does not declare that some ingredients are genome edited. This could happen if the two technologies are regulated separately, and if genome edited foods do not always have to be labelled.

<div> <div>SUSHI KITCHEN</div> <div>  <p>Japanese Restaurant + Takeaway</p> </div> <div>  <p>Open Tuesday-Sunday 4-10pm</p> </div> <div>  <p>Free delivery within 1 mile radius for orders over £15</p> </div> <div>  <p>0208 664 3030</p> </div> <div>  <p>16 High Street Wanstead London E11 1QH</p> </div> <div>  <p>New! We now offer sustainable options!</p> </div> <div>  <p>Look for the GE mark on selected menu items</p> </div> </div>		<div> <div>STARTERS AND SALADS</div> <div>  Miso Soup (v) £2.50  Sustainable Edamame £3.50  Spicy Edamame £3.50  Agedashi Tofu £3.50  Chicken Gyoza (5 pieces) £4.20  Vegetable Gyoza (5 pieces) £4.20  Seaweed salad £3.90  Soba Salad £6.20  Tuna Tataki £9.00 </div> <div>TEMPURA</div> <div>  King prawn tempura (4 pieces) £6.20  Mixed vegetable tempura £5.20  Soft shell crab tempura £5.80  Deluxe tempura £7.00 </div> <div>NIGIRI SUSHI (2 PIECES)</div> <div>  Inari (Sweet bean curd) (V) £3.20  Avocado (V) £3.20  Ikura (Salmon roe) £3.60  Tobiko (flying fish roe) £3.60  Tuna £3.60  Salmon £3.60  Sustainable Salmon £3.60  King Prawn £3.60  Octopus £3.60  Scallops £3.60  Hamachi (yellowtail) £3.60  Mackerel £3.60  Unagi (eel) £3.60  Suzuki (seabass) £3.60 </div> </div>
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Classic / house Sandwiches		Deli Sandwiches		Hot Sandwiches / Melts	
Roast ham with wholegrain mustard and salad	£3.95	Thai spiced chicken with lettuce and mayonnaise	£4.50	Roasted vegetable and mozzarella melt 	£4.50
Roast chicken with salad	£3.95	Chicken Parmigiano – breaded chicken, mozzarella and parmesan	£4.95	Ham, cheese and tomato toastie	£3.95
Roast turkey with salad	£3.95	Falafel with roasted vegetables, falafume and hummus 	£4.50	Tuna melt	£3.95
BLT – bacon, lettuce and tomato with mayonnaise	£3.95	Turkey Club – turkey breast, salad, mustard, mayo, bacon and melted mozzarella	£4.95	Bacon, brie and cranberry melt	£4.95
Dolphin Friendly tuna with mayonnaise & cucumber or sweetcorn	£3.95	Bacon, brie, avocado, mayonnaise and lettuce	£4.95	Groats cheese, roasted pepper and rocket 	£4.50
Mature cheddar with salad and Bransford pickle 	£3.50	Mozzarella with pesto*, tomato and lettuce 	£4.50	BBQ pulled pork, red onion and mozzarella	£4.95
Rare roast beef with red onion and horseradish mayonnaise	£4.50	Halkoumi with pesto*, olives and rocket 	£4.50		
Free range egg mayonnaise with tomato and cress 	£3.50	Scottish smoked salmon, cream cheese, dill and cracked black pepper – NOW with even more salmon for the same price	£4.50		
Prawns with lettuce and mayonnaise	£4.25	Luxury prawn with Marie Rose sauce, avocado and lettuce	£4.95		
		Sausage with cranberry and lettuce	£4.95		

 – items suitable for vegetarians
* = contains allergen-safe nuts

ALL freshly homemade on your choice of white, brown, granary, walnut bread or ciabatta. Gluten free bread also available.

Item	Useful information
Sandwich menu	The nuts used at this sandwich shop are genome edited to be allergy safe. However this menu doesn't declare that there are GE items on the menu, it only informs them of the allergen info.

DESSERTS
TRADITIONAL CRÈME BRÛLÉE WITH HOMEMADE SHORTBREAD (V) £6.75
SPICED APPLE WALNUT CRUMBLE WITH VANILLA ICE CREAM (V) (N) (*) £6.75
DARK CHOCOLATE FONDANT WITH PEANUT BUTTER ICE CREAM (V) (N) (*) £6.95
STICKY BANANA PUDDING WITH SALTED CARAMEL SAUCE (V) (N) £6.95
CHOCOLATE MOUSSE WITH RASPBERRY COMPOTE (V) (*) £5.75
ICE CREAMS & SORBETS (V) ASK US FOR TODAY'S SELECTION AND ALLERGEN INFORMATION £5.50
CHEESE PLATTER SELECTION OF THREE BRITISH CHEESES, FARMHOUSE CHUTNEY, CRACKERS £8.50

(V) suitable for vegetarians. (N) contains nuts. (*) Some of our menu items contain genome edited ingredients specially selected by our chef to improve the sustainability, taste or nutrition of the dish - ask your waiter if you would like more information.
We freshly prepare all our meals in the kitchen where nuts and gluten are present, so we can't guarantee the complete absence of these allergens in any dish. Our menu descriptions do not list all ingredients, full allergen information is available upon request.

DRINKS
COFFEE (*) & SPECIALITY TEA
ESPRESSO 2.25
DOUBLE ESPRESSO 2.55
AMERICANO 2.75
LATTE 2.75
CAPPUCCINO 2.75
FLAT WHITE 2.75
LIQUEUR COFFEE 4.75
LOOSE LEAF TEA 2.45 SELECTION OF TEAS AVAILABLE
DESSERT WINE AND PORT 100ML
CHATEAU LA SABATIERE 2016 (*) £4.50
ALPHA DOMUS LATE HARVEST SEMILLON 2015 (*) £5.50
TAYLOR'S VINTAGE PORT £4.75
SANDERSON 20 YEAR OLD TAWNEY PORT £6.50

(V) suitable for vegetarians. (N) contains nuts. (*) Some of our menu items contain genome edited ingredients specially selected by our chef to improve the sustainability, taste or nutrition of the dish - ask your waiter if you would like more information.
We freshly prepare all our meals in the kitchen where nuts and gluten are present, so we can't guarantee the complete absence of these allergens in any dish. Our menu descriptions do not list all ingredients, full allergen information is available upon request.

Item	Useful information
Desert menu	This links genome edited items to the statement at the bottom of the menu using asterisks. It invites the customer to ask for more information if they wish.

Safety precautions for boxes

This is a summary note of the steps in place to minimise the risk of participants eating or drinking a product without being aware of the key allergy information.

Measures taken before sending the items:

- All participants have been contacted by the recruiter to ask them to let us know of any allergies, and also to let us know if they would not be comfortable receiving alcoholic items.
- In this email they are warned ahead of time that when they receive this package, they should not consume anything in it before the workshop.
- Responses to this are being logged and will be prioritised when allocating items to specific participants. If a participant flags that they have a severe allergy, we will call them to find out whether it would be safer to not send them any food/drink products.
- All moderators will have been briefed effectively and provided with a copy of this document.

Measures taken in the package itself:

- The top of the box will feature a sticker that says 'please do not consume anything in this box until the workshop'.
- When they open the box, the first item they see placed on top of everything else will be a sheet of paper making clear that they should not consume anything in the box until the workshop, as there is important information that their moderator will share with them about the products during the workshop.
- The actual ingredients lists will be included in an envelope in the box ready for them to refer to at the appropriate time.

Measures taken during the workshop:

- Lead moderators, and breakout room moderators will be clearly briefed to follow the specific wording in relevant stages of the discussion guide.

- Lead moderators will acknowledge the parcel at the very beginning of the workshop, and verbally remind participants that they should not consume anything in the box yet, that they should listen to their moderator who will give them important information about these products before they do.
- In breakout rooms, moderators will repeat the reminder to not consume the items at the key points as detailed in the discussion guide (for example, take a look in the box now, but do not eat or drink anything in there yet).
- Once the activity has taken place, the breakout room moderators will request verbal confirmation from all 5 participants that they understand that the full ingredients list is in the envelope in the box, and that they should check that before consuming the products especially if they have any allergies.
- This verbal communication will be captured by notetakers, as a record that participants had heard and acknowledged this information.

Pre and post-workshop survey

Survey: Answer sheet

At the end of the workshop we will ask everyone to answer some questions. The moderator will show the questions on screen and read them out. Please use this answer sheet to record your answers.

Why are we asking these questions?

We want to understand your awareness and views of different food production processes having taken part in the research project.

It will take only a few minutes to complete, and your moderator will guide you through it.

FULL NAME:

Q1. Have you heard of genome edited food before now?

No	Yes, but I don't know what it means	Yes, and I know what it means*

*If you are aware of what genome editing means, please complete the below sentence:

“Genome editing means.....”

Q2. How much, if anything, do you know about genome edited food?

A great deal	A fair amount	Not very much	Nothing	Don't know

Q3. How concerned or unconcerned are you about genome edited food?

Not at all concerned	Not very concerned	Fairly concerned	Very concerned	Don't know

Q4. To what extent (if at all) would you be concerned if genome edited food was not labelled as being genome edited? [Asked in workshop 2 only]

Not at all concerned	Not very concerned	Fairly concerned	Very concerned	Don't know

Q5. To what extent do you think genome edited food is safe to eat? [Asked in workshop 2 only]

I'm sure it is safe	I think it's probably safe	I'm not sure that it's safe	I'm sure it's unsafe	Don't know

Q6. How willing would you be to eat genome edited food compared to conventionally bred food?

Not at all willing	Not very willing	Fairly willing	Very willing	Don't know

Q7. How willing would you be to eat genome edited food if it was labelled as genome edited? [Asked in workshop 2 only]

Not at all willing	Not very willing	Fairly willing	Very willing	Don't know

Q8. How much, if anything, do you know about genetically modified food?

A great deal	A fair amount	Not very much	Nothing	Don't know

Q9. How willing would you be to eat genome edited food compared to genetically modified food?

Not at all willing	Not very willing	Fairly willing	Very willing	Don't know

Please indicate whether you think that the following statements are true or false:

Q10. There are approved genetically modified foods on sale in UK food shops

Q11. There are approved genome edited foods on sale in UK food shops

Q12. Traditional breeding does not intentionally interfere with the genes of crops or animals

Question number	True	False	Don't know
Q10.			

Q11.			
Q12.			

Please email a photo of both sides of this survey to Imogen.Drew@Ipsos.com, but keep this paper copy safe!

If you have trouble emailing it now, just let your moderator know or get in touch with Imogen after the workshop and she will help find an easy solution.

Quantitative questionnaire

Q. KNGE1

Ask all: Single Code

Before today, how well informed did you feel, if at all, about the scientific technique called “Genome Editing” (also known as “Gene Editing”)?

1. Very well informed
2. Fairly well informed
3. Not very well informed
4. Not at all well informed
5. Have never heard of it
6. Don't know

Q: KNGE2

Ask all: Single Code

Before today, how much, if anything, did you know about Genome Edited food products?

1. A great deal
2. A fair amount
3. Just a little
4. Heard of it but know nothing about it
5. Never heard of it
6. Don't know

Q: KNGM1

Ask all: Single Code

Before today, how well informed did you feel, if at all, about the scientific technique called “Genetic Modification” (also known as “GM” or “Genetic Engineering”)?

1. Very well informed
2. Fairly well informed
3. Not very well informed
4. Not at all well informed
5. Have never heard of it
6. Don't know

Q: KNGM2

Ask all: Single Code

Before today, how much, if anything, did you know about Genetically Modified food products?

1. A great deal
2. A fair amount
3. Just a little
4. Heard of it but know nothing about it
5. Never heard of it
6. Don't know

Q: GESALE

Ask all: Single Code. Forward/Reverse scale.

Do you think that Genome Edited food products should, or should not, be available for sale in the UK in the future?

1. Yes – Definitely should be available for sale in the UK in the future
2. Yes – Probably should be available for sale in the UK in the future
3. No - Probably should not be available for sale in the UK in the future
4. No – Definitely should not be available for sale in the UK in the future
5. Don't know

Q: KNGEM1

Ask all who answered the previous question 'how well informed did you feel, if at all, about the scientific technique called "Genome Editing"' as either very, fairly, or not very informed.

Rotate codes 1 and 2, fix codes 3,4,5. Single Code.

Please tell us whether you think the following statement describes "Genome Editing" or "Genetic Modification", both "Genome Editing" and "Genetic Modification", or neither. *If you are unsure you can indicate this by selecting don't know.*

Statement: A scientific technique used to create small specific changes to part of a living thing's DNA to improve its existing characteristics.

This describes...

1. Genome Editing
2. Genetic Modification
3. Both Genome Editing and Genetic Modification
4. Neither Genome Editing nor Genetic Modification
5. Don't know

Q: KNGEM2

Ask all who answered the previous question 'how well informed did you feel, if at all, about the scientific technique called "Genome Editing"' as either very, fairly or not very informed. Rotate codes 1 and 2, fix codes 3,4,5. Single code.

Please tell us whether you think the following statement describes "Genome Editing" or "Genetic Modification", both "Genome Editing" and "Genetic Modification", or neither. *If you are unsure you can indicate this by selecting don't know.*

STATEMENT: A scientific technique used to artificially insert DNA from one living thing into the DNA of another living thing, introducing a new or different characteristic.

This describes...

1. Genome Editing
2. Genetic Modification
3. Both Genome Editing and Genetic Modification
4. Neither Genome Editing nor Genetic Modification
5. Don't know

Show all.

For the purposes of this research we would like you to use the following definitions of “Conventional Breeding”, “Genetic Modification” and “Genome Editing”.

“Conventional Breeding” is a term that describes the range of techniques used for many years to genetically improve animals and plants. In animals it includes selective breeding and artificial insemination. In plant seeds, x-rays or chemicals are sometimes used to increase both the range and number of random mutations in the DNA.

“Genome Editing” is a scientific technique used to create small specific changes to part of a living thing’s DNA to improve its existing characteristics. These changes could also be achieved by Conventional Breeding.

“Genetic Modification” is a scientific technique used to artificially insert DNA from one living thing into the DNA of another living thing, introducing a new or different characteristic. These changes could not be achieved by Conventional Breeding.

Throughout the rest of this survey we are only focusing on the use of Genome Editing and Genetic Modification in food production.

You will see the (i) symbol throughout the survey, you can touch or click on this to see the definition of Genome Editing again.

Q: ACCGM

Forward/Reverse scale. Ask all, Single code for each row.

“Genetic Modification” is a scientific technique used to artificially insert DNA from one living thing into the DNA of another living thing, introducing a new or different characteristic. These changes could not be achieved by Conventional Breeding.

In food production, how acceptable or unacceptable, do you think it is to use Genetic Modification in...

Rows

1. Animals
2. Plants

Columns

1. Very acceptable
2. Fairly acceptable

3. Neither acceptable nor unacceptable
4. Fairly unacceptable
5. Very unacceptable
6. Don't know [Fix](#)

Q: ACCGE

Forward/Reverse scale. Ask all, Single code for each row.

“Genome Editing” is a scientific technique used to create small specific changes to part of a living thing’s DNA to improve its existing characteristics. These changes could also have occurred by Conventional Breeding.

In food production, how acceptable or unacceptable, do you think it is to use Genome Editing techniques in...

Rows

1. Animals
2. Plants

Columns

1. Very acceptable
2. Fairly acceptable
3. Neither acceptable nor unacceptable
4. Fairly unacceptable
5. Very unacceptable
6. Don't know [Fix](#)

Q: ACCGE2

Ask all, Rotate statements. Single code for each row, forward/reverse scale.

Thinking about IF Genome Edited food products became available for sale in the UK, how concerned, if at all, would you be about each of the following?

Rows

1. The impact on animals bred using Genome Editing techniques
2. The impact on humans from eating Genome Edited food products
3. The impact of introducing Genome Edited crops on the environment
4. The impact on small-scale farmers if they cannot access Genome Editing technology

5. The taste of Genome Edited food products
6. The nutritional value of Genome Edited food products
7. Some Genome Edited food products being higher cost and therefore unaffordable for some people
8. Some Genome Edited food products being lower cost and therefore the only affordable option for some people

Columns

1. Very concerned
2. Fairly concerned
3. Not very concerned
4. Not at all concerned
5. Don't know [Fix](#)
- 6.

Q: GESAF

Forward/Reverse scale. Ask all, Single code for each row.

To what extent do you think that Genome Edited food products are safe, or not safe, to eat?

1. Very safe to eat
2. Fairly safe to eat
3. Fairly unsafe to eat
4. Very unsafe to eat
5. Don't know [Fix](#)

Regulation and labelling

Currently there are no Genome Edited foods for sale in the UK market.

Genome Edited foods would only be allowed to be sold in the UK after being independently scientifically assessed by the Food Standards Agency (FSA) and other UK government bodies to ensure these foods do not to present a risk to public health.

Q: CONC2

Forward/Reverse scale. Ask all, Single code for each row.

The UK government is running a consultation, to hear what the public think about the use of newer genetic technologies in agriculture, including Genome Editing. Depending on the outcome of that consultation, if Genome Edited food products

were not considered to present a risk to public health and were to be available for sale in the UK these could be labelled differently from Genetically Modified food, or possibly not labelled at all.

IF Genome Edited food products became available for sale in the UK, how important, if at all, would it be for these products to be labelled as “Genome Edited”?

6. Very important
7. Fairly important
8. Not very important
9. Not at all important
10. Don't know [Fix](#)

Q: NLAB1

[Ask all. Single Code.](#)

Which, if any, of the following statements comes closest to your view on how Genome Edited food products should be labelled IF they became available for sale in the UK?

1. The label should state that the food product has been “Genome Edited” and specify which ingredients have been Genome Edited
2. The label should state that the food product has been “Genome Edited” but does not need to specify which ingredients have been Genome Edited
3. A Genome Edited food product does not need to be labelled as “Genome Edited”
4. A Genome Edited food product should be labelled in another way (please specify) [\[Open text\]](#)
5. None of these
6. Don't know

Q: NLAB2

[Ask All. Rotate statements. Single code for each statement.](#)

[Forward/Reverse scale.](#)

To what extent do you support or oppose each of the following options for the labelling of Genome Edited food products IF they became available for sale in the UK?

[Rows](#)

1. The product label to include a link that consumers can use to find out further information about the product
2. The product label to include a symbol representing that the product is Genome Edited
3. The product label to include the words "Genome Edited"
4. The place of purchase to include information that the product is "Genome Edited" (for example, on the shop shelf or restaurant menu)
5. The product label to include the reasons why the product had been Genome Edited (for example, to benefit human health, reduce production costs, etc.)

Columns

1. Strongly support
2. Tend to support
3. Neither support nor oppose
4. Tend to oppose
5. Strongly oppose
6. Don't know **FIX**

Q: EATP

Ask all. Randomise rows. Single code for each row.

Forward/Reverse scale 1 to 4.

IF Genome Edited food products became available for sale in the UK, would you or would you not be willing to eat a product if...?

Rows

1. It contained Genome Edited meat
2. It contained Genome Edited dairy products
3. It contained Genome Edited crops (for example, cereal or flour)
4. It was a processed food product containing Genome Edited ingredients (for example, bread or chocolate)
5. It was fresh produce that had been Genome Edited (for example, fresh fruit or vegetables)
6. It had been Genome Edited to be allergen safe (for example, nut allergy or coeliac safe)
7. You had heard it tasted better ~~to~~ than food that had not been Genome Edited
8. It was more affordable than food that had not been Genome Edited
9. It was better for the environment than food that had not been Genome Edited

10. It had been Genome Edited to be more resilient and adaptable to changing climates
11. It had been Genome Edited to improve animal welfare

Columns

1. Yes – Definitely willing to eat that food product
2. Yes – Probably willing to eat that food product
3. No - Probably not willing to eat that food product
4. No - Definitely not willing to eat that food product
5. Don't know [Fix](#)

Q: INTGE

Forward/Reverse scale 1 to 4. Ask all, Single code for each row.

How interested, if at all, do you think people like you would be in finding out more information about Genome Editing in food production?

1. Very interested
2. Fairly interested
3. Not very interested
4. Not all interested
5. Don't know [Fix](#)

Tables from the quantitative survey

The following tables display the key figures that are referred to within the body of the report. The full data tables are available on the FSA website where this report is published. Where the proportion of a specific subgroup who gave a particular answer is higher than the proportion of the total sample that gave that answer to a statistically significant degree, this figure will be indicated with an asterisks (*).

Table 1: Before today, how much, if anything, did you know about Genetically Modified food products?

Knowledge of genetically modified food products	Proportion of respondents
A great deal	4%
A fair amount	20%
Just a little	39%
Heard of it but know nothing about	27%
Never heard of it	9%
Don't know	1%

Base: 2066 adults aged 16-75 in England, Wales and Northern Ireland (no definition given).

Table 2: Before today, how well informed did you feel, if at all, about the scientific technique called “Genome Editing” (also known as “Gene Editing”)?

Knowledge of genome editing	Proportion of respondents
Very well informed	3%
Fairly well informed	17%
Not very well informed	27%
Not at all well informed	22%
Have never heard of it	28%
Don't know	2%

Base: 2066 adults aged 16-75 in England, Wales and Northern Ireland (no definition given).

Table 3: Before today, how much, if anything, did you know about Genome Edited food products?

Knowledge of genome edited food products	Proportion of respondents
A great deal	3%
A fair amount	9%
Just a little	24%
Heard of it but know nothing about	21%
Never heard of it	42%
Don't know	2%

Base: 2066 adults aged 16-75 in England, Wales and Northern Ireland (no definition given).

Table 4: Demographic breakdown: Before today, how much, if anything, did you know about Genome Edited food products?

Demographic break	Proportion who see themselves as very or fairly informed about genome editing
Total	20%
Male	26%*
Female	15%
16-24	35%*
25-34	29%*
25-44	17%
45-54	15%
55-75	14%
Degree level or above	27%*
A Level or equivalent	21%
GCSE or equivalent	13%
No formal qualifications	12%

Base: 2066 adults aged 16-75 in England, Wales and Northern Ireland (no definition given).

Table 5: Do you think that Genome Edited food products should, or should not, be available for sale in the UK in the future?

Sale of genome edited food products in the UK	Proportion of respondents
Yes – Definitely should be available for sale in the UK in the future	6%
Yes – Probably should be available for sale in the UK in the future	26%
No – Probably should not be available for sale in the UK in the future	22%
No – Definitely should not be available for sale in the UK in the future	16%
Don't know	31%

Base: 2066 adults aged 16-75 in England, Wales and Northern Ireland (no definition given)

Table 6: Demographic breakdown: Do you think that Genome Edited food products should, or should not, be available for sale in the UK in the future?

Demographic break	Yes – definitely / probably should be available for sale in the UK in the future
Total	32%
Male	38%*
Female	25%
16-24	50%*
25-34	41%*
35-44	29%
45-54	24%
55-75	24%

Base: 2066 adults aged 16-75 in England, Wales and Northern Ireland (no definition given).

Table 7: Please tell us whether you think the following statement describes “Genome Editing” or “Genetic Modification”, both “Genome Editing” and “Genetic Modification”, or neither. If you are unsure you can indicate this by selecting don’t know.

Identifying definitions	Genome editing definition	Genetic modification definition
Definition correctly identified	28%	36%
Definition incorrectly identified	26%	22%
Selected both genome editing and genetic modification	33%	28%
Selected neither genome editing nor genetic modification	3%	3%
Don’t know	10%	11%

Base: 991 adults aged 16-75 in England, Wales and Northern Ireland who felt at least not very well informed about Genome Editing (no definition given).

Table 8: Thinking about If Genome Edited food products became available for sale in the UK, how concerned, if at all, would you be about each of the following?

Concern about impact of genome edited food products	Very / fairly concerned	Not very / not at all concerned	Don't know
The impact on animals bred using genome editing techniques	71%	19%	11%
The impact on humans from eating genome edited food products	65%	25%	11%
The impact of introducing genome edited crops on the environment	61%	27%	11%
The impact on small-scale farmers if they cannot access genome editing technology	62%	22%	16%
The taste of genome edited food products	51%	34%	15%
The nutritional value of genome edited food products	57%	30%	13%
Some genome edited food products being higher cost and therefore unaffordable for some people	59%	27%	14%
Some genome edited food products being lower cost and therefore the only affordable option for some people	54%	31%	15%

Base: 2066 adults aged 16-75 in England, Wales and Northern Ireland

Table 9: Gender differences: Thinking about If Genome Edited food products became available for sale in the UK, how concerned, if at all, would you be about each of the following?

Proportion who are very / fairly concerned	Total	Male	Female
The impact on animals bred using genome editing techniques	71%	66%	75%*
The impact on humans from eating genome edited food products	65%	60%	69%*
The impact of introducing genome edited crops on the environment	61%	57%	66%*
The impact on small-scale farmers if they cannot access genome editing technology	62%	59%	65%*
The taste of genome edited food products	51%	47%	55%*
The nutritional value of genome edited food products	57%	52%	63%*
Some genome edited food products being higher cost and therefore unaffordable for some people	59%	57%	61%
Some genome edited food products being lower cost and therefore the only affordable option for some people	54%	51%	58%*

Base: 2066 adults aged 16-75 in England, Wales and Northern Ireland

Table 10: Age differences: Thinking about If Genome Edited food products became available for sale in the UK, how concerned, if at all, would you be about each of the following?

Proportion who are very / fairly concerned	Total	16-24 year olds	25-34 year olds	35-44 year olds	45-54 year olds	55-75 year olds
The impact on animals bred using genome editing techniques	71%	60%	68%	68%	71%	77%*
The impact on humans from eating genome edited food products	65%	60%	62%	60%	67%	70%*
The impact of introducing genome edited crops on the environment	61%	50%	60%	59%	63%	68%*
The impact on small-scale farmers if they cannot access genome editing technology	62%	57%	62%	58%	63%	66%
The taste of genome edited food products	51%	48%	51%	46%	50%	54%
The nutritional value of genome edited food products	57%	55%	58%	54%	58%	60%
Some genome edited food products being higher cost and therefore	59%	59%	51%	57%	60%	64%*

unaffordable for some people						
Some genome edited food products being lower cost and therefore the only affordable option for some people	54%	51%	48%	51%	56%	60%*

Base: 2066 adults aged 16-75 in England, Wales and Northern Ireland

Table 11: To what extent do you think that Genome Edited food products are safe, or not safe, to eat?

Safety of eating genome edited food products	Proportion of respondents
Very safe to eat	7%
Fairly safe to eat	32%
Fairly unsafe to eat	18%
Very unsafe to eat	12%
Don't know	31%

Base: 2066 adults aged 16-75 in England, Wales and Northern Ireland

Table 12: Demographic breakdown: To what extent do you think that Genome Edited food products are safe, or not safe, to eat?

Demographic break	Very / fairly safe to eat
Total	39%
Male	44%*
Female	35%
16-24	53%*
25-34	42%
35-44	36%
45-54	34%
55-75	36%
AB	46%*
C1	40%
C2	38%
DE	33%

Base: 2066 adults aged 16-75 in England, Wales and Northern Ireland

Table 13: In food production, how acceptable or unacceptable, do you think it is to use Genetic Modification/Genome Editing in plants/animals?

Changes in food production	Very / fairly acceptable	Neither acceptable nor unacceptable	Very / fairly unacceptable	Don't know
Genome editing in plants	49%	18%	27%	6%
Genome editing in animals	27%	19%	47%	8%
Genetic Modification in plants	44%	17%	32%	6%
Genetic Modification in animals	19%	17%	57%	7%

Base: 2066 adults aged 16-75 in England, Wales and Northern Ireland

Table 14: Demographic breakdown: In food production, how acceptable or unacceptable, do you think it is to use Genome Editing techniques in plants/animals?

Demographic or level of self-reported knowledge	Acceptability in plants	Acceptability in animals
Total	49%	27%
Male	52%*	31%*
Female	45%	23%
16-24	54%*	32%*
25-34	58%*	26%
35-44	47%	25%
45-54	49%	27%
55-75	42%	25%
Very / fairly well informed about genome editing	64%*	42%*
Not very / not at all well informed about genome editing	52%*	27%
Never heard of genome editing	35%	16%

Base: 2066 adults aged 16-75 in England, Wales and Northern Ireland

Table 15: If Genome Edited food products became available for sale in the UK, how important, if at all, would it be for these products to be labelled as “Genome Edited”?

Importance of labelling genome edited food products	Proportion of respondents
Very important	63%
Fairly important	21%
Not very important	6%
Not at all important	2%
Don't know	8%

Base: 2066 adults aged 16-75 in England, Wales and Northern Ireland

Table 16: Demographic breakdown: If Genome Edited food products became available for sale in the UK, how important, if at all, would it be for these products to be labelled as “Genome Edited”?

Demographic break	Proportion of respondents who say ‘very’ or ‘fairly’ important
Total	84%
16-24	76%
25-34	80%
35-44	82%
45-54	86%
55-75	90%*
Degree level or above	87%*
A Level or equivalent	85%
GCSE or equivalent	82%
No formal qualifications	77%

Base: 2066 adults aged 16-75 in England, Wales and Northern Ireland

Table 17: Which, if any, of the following statements comes closest to your view on how Genome Edited food products should be labelled IF they became available for sale in the UK?

Information on the label	Proportion of respondents
The label should state that the food product has been “genome edited” and specify which ingredients have been genome edited	70%
The label should state that the food product has been “genome edited” but does not need to specify which ingredients have been genome edited	14%
A genome edited food product does not need to be labelled as “genome edited”	3%
A genome edited food product should be labelled in another way	1%
None of these	3%
Don’t know	8%

Base: 2066 adults aged 16-75 in England, Wales and Northern Ireland

Table 18: Demographic breakdown: Which, if any, of the following statements comes closest to your view on how Genome Edited food products should be labelled IF they became available for sale in the UK?

Demographic break	Product should be labelled and specify which ingredients are genome edited
Total	70%
Male	66%
Female	74%*
16-24	58%
25-34	63%
35-44	74%
45-54	73%
55-75	76%*
Degree level or above	72%
A Level or equivalent	71%
GCSE or equivalent	69%
No formal qualifications	57%

Base: 2066 adults aged 16-75 in England, Wales and Northern Ireland

Table 19: To what extent do you support or oppose each of the following options for the labelling of Genome Edited food products IF they became available for sale in the UK?

Support for labelling options for genome edited food products	Strongly / tend to support	Neither support nor oppose	Strongly / tend to oppose	Don't know
The product label to include the words "genome edited"	77%	12%	5%	7%
The product label to include a symbol representing that the product is "genome edited"	76%	12%	6%	6%
The product label to include a link that consumers can use to find out further information about the product	73%	14%	6%	7%
The place of purchase to include information that the product is "genome edited" (for example, on the shop shelf or restaurant menu)	71%	16%	6%	7%
The product label to include the reasons why the product had been "genome edited" (for example, to benefit human health, reduce production costs, etc.)	66%	20%	8%	7%

Base: 2066 adults aged 16-75 in England, Wales and Northern Ireland

Table 20: Split between levels of self-reported awareness: To what extent do you support or oppose each of the following options for the labelling of Genome Edited food products IF they became available for sale in the UK?

Proportion who strongly / tend to support labelling options	Total	Very / fairly informed	Not very / not at all informed	Have never heard of it
The product label to include a symbol representing that the product is “genome edited”	77%	71%	75%	73%
The product label to include the words “genome edited”	76%	72%	78%	77%
The place of purchase to include information that the product is “genome edited” (for example, on the shop shelf or restaurant menu)	73%	71%	80%*	78%
The product label to include the reasons why the product had been “genome edited” (for example, to benefit human health, reduce production costs, etc.)	71%	67%	73%*	72%
The product label to include a link that consumers can use to find out further information about the product	66%	62%	68%	67%

Base: 2066 adults aged 16-75 in England, Wales and Northern Ireland

Table 21: If Genome Edited food products became available for sale in the UK, would you or would you not be willing to eat a product if...?

Willingness to eat a food product	Yes (definitely or probably willing to)	No (definitely or probably not willing to)	Don't know
It contained genome edited meat	28%	54%	18%
It contained genome edited dairy products	34%	47%	19%
It contained genome edited crops (for example, cereal or flour)	45%	39%	17%
It was a processed food product containing genome edited ingredients (for example, bread or chocolate)	40%	44%	17%
It was fresh produce that had been genome edited (for example, fresh fruit or vegetables)	43%	41%	15%
It had been genome edited to be allergen safe (for example, nut allergy or coeliac safe)	46%	38%	17%
You had heard it tasted better than food that had not been genome edited	40%	40%	19%
It was more affordable than food that had not been genome edited	41%	41%	18%
It was better for the environment than food that had not been genome edited	48%	34%	19%
It had been genome edited to be more resilient and adaptable to changing climates	44%	39%	17%
It had been genome edited to improve animal welfare	45%	35%	20%

Base: 2066 adults aged 16-75 in England, Wales and Northern Ireland

Table 22: Gender differences: If Genome Edited food products became available for sale in the UK, would you or would you not be willing to eat a product if...?

Proportion who are definitely or probably willing to eat a product	Total	Male	Female
It contained genome edited meat	28%	35%*	21%
It contained genome edited dairy products	34%	40%*	28%
It contained genome edited crops (for example, cereal or flour)	45%	49%*	40%
It was a processed food product containing genome edited ingredients (for example, bread or chocolate)	40%	46%*	33%
It was fresh produce that had been genome edited (for example, fresh fruit or vegetables)	43%	48%*	38%
It had been genome edited to be allergen safe (for example, nut allergy or coeliac safe)	46%	48%	43%
You had heard it tasted better than food that had not been genome edited	40%	46%*	35%
It was more affordable than food that had not been genome edited	41%	46%*	37%
It was better for the environment than food that had not been genome edited	48%	50%	46%
It had been genome edited to be more resilient and adaptable to changing climates	44%	48%*	39%
It had been genome edited to improve animal welfare	45%	48%*	42%

Base: 2066 adults aged 16-75 in England, Wales and Northern Ireland

Table 23: Age differences: If Genome Edited food products became available for sale in the UK, would you or would you not be willing to eat a product if...?

Proportion who are definitely or probably willing to eat a product	Total	16-24 year olds	25-34 year olds	35-44 year olds	45-54 year olds	55-75 year olds
It contained genome edited meat	28%	40%*	34%*	26%	24%	22%
It contained genome edited dairy products	34%	47%*	39%*	33%	31%	28%
It contained genome edited crops (for example, cereal or flour)	45%	53%*	47%	45%	40%	41%
It was a processed food product containing genome edited ingredients (for example, bread or chocolate)	40%	48%*	48%*	37%	36%	34%
It was fresh produce that had been genome edited (for example, fresh fruit or vegetables)	43%	52%*	48%*	44%	41%	38%
It had been genome edited to be allergen safe (for example, nut allergy or coeliac safe)	46%	57%*	54%*	44%	42%	38%
You had heard it tasted better than food that had not been genome edited	40%	54%*	47%*	40%	35%	33%
It was more affordable than food that had not been genome edited	41%	54%*	48%*	41%	37%	34%

It was better for the environment than food that had not been genome edited	48%	57%*	55%*	48%	45%	40%
It had been genome edited to be more resilient and adaptable to changing climates	44%	52%*	47%	41%	41%	40%
It had been genome edited to improve animal welfare	45%	55%*	51%*	44%	42%	39%

Base: 2066 adults aged 16-75 in England, Wales and Northern Ireland

Table 24: Self-reported knowledge differences: If Genome Edited food products became available for sale in the UK, would you or would you not be willing to eat a product if...?

Proportion who are definitely or probably willing to eat a product	Total	Very / fairly well informed	Not very / not at all well informed	Have never heard of it
It contained genome edited meat	28%	48%*	28%	15%
It contained genome edited dairy products	34%	51%*	35%	22%
It contained genome edited crops (for example, cereal or flour)	45%	63%*	47%	30%
It was a processed food product containing genome	40%	58%*	41%	26%

edited ingredients (for example, bread or chocolate)				
It was fresh produce that had been genome edited (for example, fresh fruit or vegetables)	43%	60%*	45%	30%
It had been genome edited to be allergen safe (for example, nut allergy or coeliac safe)	46%	62%*	49%*	30%
You had heard it tasted better than food that had not been genome edited	40%	57%*	42%	27%
It was more affordable than food that had not been genome edited	41%	58%*	43%	27%
It was better for the environment than food that had not been genome edited	48%	65%*	51%*	33%
It had been genome edited to be more resilient and adaptable to changing climates	44%	59%*	46%*	30%
It had been genome edited to improve animal welfare	45%	62%*	48%*	30%

Base: 2066 adults aged 16-75 in England, Wales and Northern Ireland

Table 25: How interested, if at all, do you think people like you would be in finding out more information about Genome Editing in food production?

Interest in finding out more	Proportion of respondents
Very interested	25%
Fairly interested	46%
Not very interested	14%
Not at all interested	8%
Don't know	7%

Base: 2066 adults aged 16-75 in England, Wales and Northern Ireland

Table 27: Demographic breakdown: How interested, if at all, do you think people like you would be in finding out more information about Genome Editing in food production?

Demographic break	Proportion very or fairly interested in finding out more information
Total	71%
Degree level or above	77%*
A Level or equivalent	74%
GCSE or equivalent	64%
No formal qualifications	59%

Base: 2066 adults aged 16-75 in England, Wales and Northern Ireland

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