**Appendix**

## IRB Documentation and Data Collection Instrument

### Consent

**INVITATION TO PARTICIPATE:** You are invited to participate in a research study about a new technology that can increase the shelf-life of fruits and vegetables (IRB# 2404536397). Please read through the following information and indicate your consent below to begin the survey.
**INFORMATION ABOUT THE RESEARCH STUDY:** The survey should take approximately 15 minutes.
You must be 18 years of age or older to participate
**Risks and Benefits:** Your participation will assist in the advancement of knowledge of new technologies that can lengthen the shelf-life of fruits and vegetables. There are no anticipated risks to participating in this study.
**Voluntary Participation:** Your participation in the research is completely voluntary.
**Confidentiality:** Your responses to the survey will be recorded anonymously. No identifying personal information will be collected in the survey. Only basic demographic information (age, gender, education, etc.) will be collected.
**Right to Withdraw:** You are free to refuse to participate in the research and to stop filling out the survey at any time. If you have questions or concerns about this study, you may contact REMOVED IDENTITY. For questions or concerns about your rights as a research participant, please contact Ro Windwalker, the University's Compliance Coordinator, at +1 (479) 575-2208 or by e-mail at irb@uark.edu.

Thank you for your participation!

By clicking the button below and taking the survey, you acknowledge that you have read the above statement. You understand the purpose of the study as well as the potential risks and benefits that are involved. You understand that your participation is voluntary

and that no rights have been waived in giving your consent. You acknowledge that you are 18 years of age or older and that you may choose to terminate your participation in the study at any time for any reason.

- ○ I consent. Begin the study.
- ○ I do not consent. I do not wish to participate

**Info**

Are you 18 years old or older?

- ○ Yes
- ○ No

In my household...

- ○ I am solely responsible for making all grocery purchasing decisions
- ○ I have shared responsibility for making grocery purchasing decisions
- ○ I do not have any responsibility for making grocery purchasing decisions

In the last 30 days, have you consumed apples?

- ○ Yes, I have consumed apples in the last 30 days
- ○ No, I have not consumed apples in the last 30 days

Gender:

- ○ Male
- ○ Female
- ○ Nonbinary/Third gender
- ○ Prefer not to say

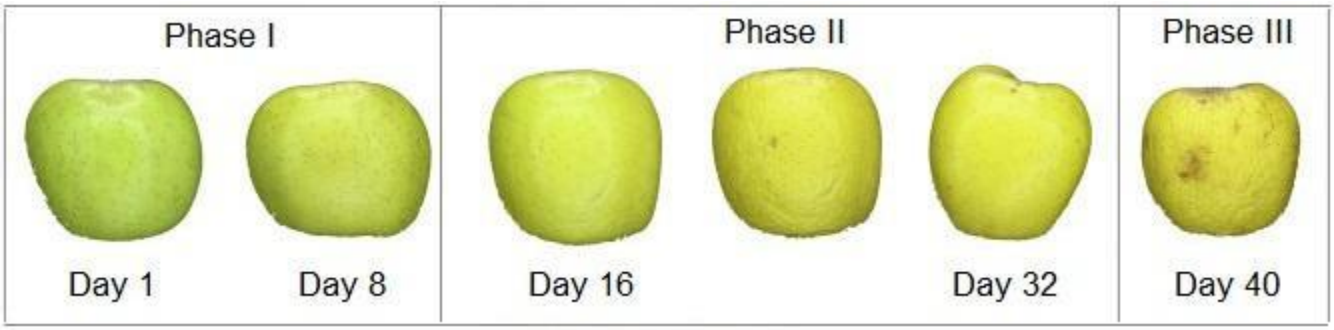
What is your highest completed education?

- ○ Elementary School
- ○ Junior High School
- ○ Senior High School
- ○ Vocational or Technical Course
- ○ Bachelor's Degree
- ○ Master's Degree
- ○ Doctorate or PHD

In a typical month, how often do you usually consume apples?

- ○ Multiple times a day
- ○ At least once a day
- ○ Multiple times a week
- ○ At least once a week
- ○ A few times a month
- ○ At least once a month

The image below displays an example of the typical browning stages of an apple




Researchers have been working to develop technologies to slow down the browning process for fruits like bananas and apples in order to increase their shelf life. Such technology is aimed at increasing the amount of time a harvested fruit can remain in

Phase I, thus reducing waste.  In this survey, we will ask you about two such technologies: gene-editing and an all natural fruit spray.

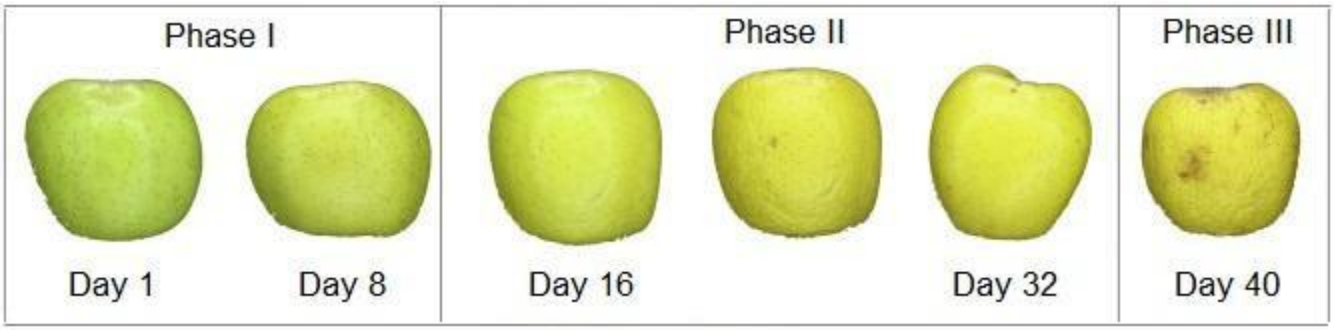
**Tech_Info_GE**

**Gene editing technology can be used to 'knock out' the browning trait in apples.** This means that, unlike traditionally bred apples, this specific **gene-edited** apple has a prolonged shelf life through reduced browning and delayed ripening.

**This gene editing technology does not involve inserting genetic material from other organisms ('Foreign DNA') into the host genome.** Apart from this extended shelf-life, the apple appears and tastes the same as a traditional apple.

Imagine you had a choice of consuming two types of apples.

- One type is a traditional apple, which will ripen, as indicated in the image.
- The other type is a 'non-browning' apple, which was developed using **gene-editing technology to reduce browning**. This non-browning apple remains in Phase I for longer and can delay ripening by a month.




Besides browning after purchase, the two types of apples are nearly identical.

How likely will you consume the **gene-edited 'non-browning' apple** over a **traditional apple**?

- ○ Extremely unlikely to consume the 'non-browning' gene-edited apple over the traditional apple
- ○ Somewhat unlikely to consume the 'non-browning' gene-edited apple over the traditional apple
- ○ Neither likely nor unlikely to consume the 'non-browning' gene-edited apple over the traditional apple
- ○ Somewhat likely to consume the 'non-browning' gene-edited apple over the traditional apple
- ○ Extremely likely to consume the 'non-browning' gene-edited apple over the traditional apple

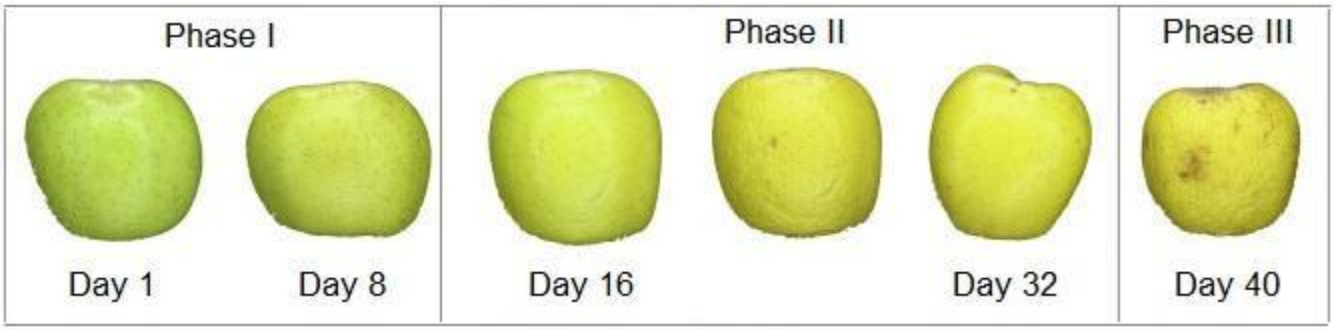
**Tech_Info_Spray**

**An all-natural fruit spray can be used to coat an apple and slow the browning process.** This means that, unlike traditional non-coated apples, a **spray-coated apple** has a prolonged shelf life through reduced browning and delayed ripening.

**The fruit spray technology is all natural and involves no manipulation of the apple itself.** Apart from the extended shelf-life, the apple appears and tastes the same as a traditional apple.

Imagine you had a choice of consuming two types of apples.

- One type is a traditional apple, which will ripen, as indicated in the image.
- The other type is a 'non-browning' apple, which has been coated with an **all-natural fruit spray technology to reduce browning**. This non-browning apple remains in Phase I for longer and can delay ripening by a month.




Besides browning after purchase, the two types of apples are nearly identical.

How likely will you consume the **spray-coated 'non-browning' apple** over a **traditional apple**?

- ○ Extremely unlikely to consume the 'non-browning' spray coated apple over the traditional apple
- ○ Somewhat unlikely to consume the 'non-browning' spray coated apple over the traditional apple
- ○ Neither likely nor unlikely to consume the 'non-browning' spray coated apple over the traditional apple
- ○ Somewhat likely to consume the 'non-browning' spray coated apple over the traditional apple
- ○ Extremely likely to consume the 'non-browning' spray coated apple over the traditional apple

**CT_Script**

Studies show that people tend to act differently when they face hypothetical decisions. In other words, they say one thing in a lab setting and do something different in a real-world setting. For example, some people would say they would choose an item in a hypothetical situation, but when faced with non-hypothetical or real choices (e.g., in a supermarket), they will not actually choose the item that they said they would choose. We want you to behave the way you would if you had to choose between products in a retail store.

Now, imagine you are shopping for food at a retail store where you usually buy groceries.

**Choice Experiment**

Imagine you are shopping for apples, and you can select from two apples below. Other than the price and the technology used to reduce browning (gene-editing or all natural spray), the apples are identical in every other way.

Given these two options, **which would you choose**?

**Price:** $2.49 per lb
**Technology:** All Natural Spray

**Price:** $0.99 per lb
**Technology:** Traditional Breeding

I would choose neither

Imagine you are shopping for apples, and you can select from two apples below. Other than the price and the technology used to reduce browning (gene-editing or all natural spray), the apples are identical in every other way.

Given these two options, **which would you choose**?

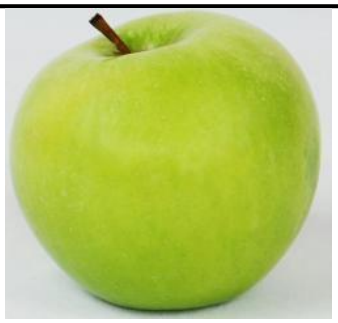
**Price:** $0.99 per lb
**Technology:** Gene-Edited

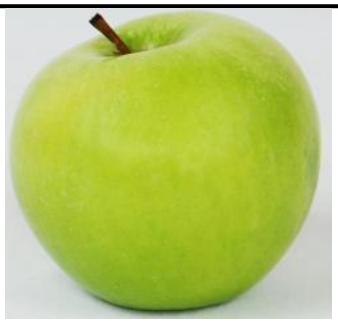
**Price:** $3.99 per lb
**Technology:** All Natural Spray

I would choose neither

Imagine you are shopping for apples, and you can select from two apples below. Other than the price and the technology used to reduce browning (gene-editing or all natural spray), the apples are identical in every other way.

Given these two options, **which would you choose**?





I would choose neither

| | |
|---|---|
| **Price:** $2.49 per lb<br>**Technology:** Gene-Edited | **Price:** $3.99 per lb<br>**Technology:** All Natural Spray |

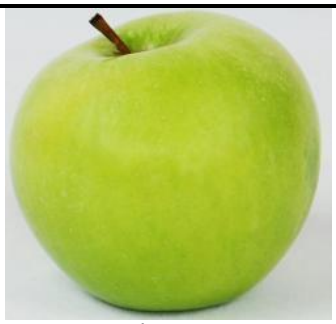
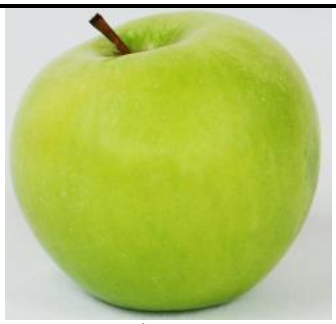
Imagine you are shopping for apples, and you can select from two apples below. Other than the price and the technology used to reduce browning (gene-editing or all natural spray), the apples are identical in every other way.

Given these two options, **which would you choose**?

| | | |
|---|---|---|
|  <br>**Price:** $0.99 per lb<br>**Technology:** All Natural Spray |  <br>**Price:** $2.49 per lb<br>**Technology:** Gene-Edited | I would choose neither |

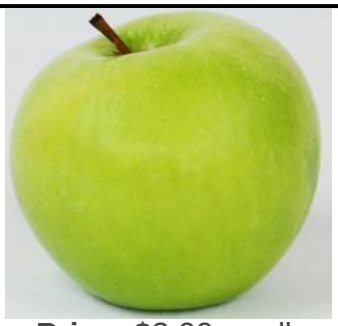
Imagine you are shopping for apples, and you can select from two apples below. Other than the price and the technology used to reduce browning (gene-editing or all natural spray), the apples are identical in every other way.

Given these two options, **which would you choose**?

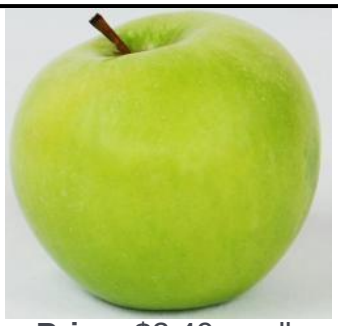
| | | |
|---|---|---|
|  <br>**Price:** $2.49 per lb<br>**Technology:** All Natural Spray |  <br>**Price:** $0.99 per lb<br>**Technology:** Gene-Edited | I would choose neither |

Imagine you are shopping for apples, and you can select from two apples below. Other

than the price and the technology used to reduce browning (gene-editing or all natural spray), the apples are identical in every other way. Given these two options, **which would you choose**?



**Price:** $3.99 per lb
**Technology:** Gene-Edited



**Price:** $2.49 per lb
**Technology:** Traditional Breeding

I would choose neither

Imagine you are shopping for apples, and you can select from two apples below. Other than the price and the technology used to reduce browning (gene-editing or all natural spray), the apples are identical in every other way.

Given these two options, **which would you choose**?

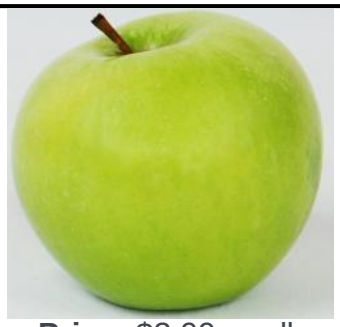
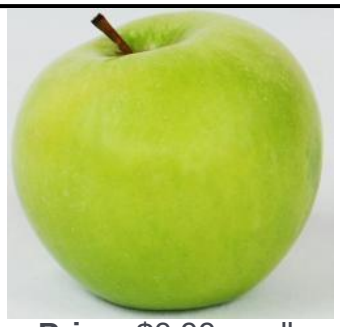
**Price:** $0.99 per lb
**Technology:** Traditional Breeding

**Price:** $2.49 per lb
**Technology:** Gene-Edited

I would choose neither

Imagine you are shopping for apples, and you can select from two apples below. Other than the price and the technology used to reduce browning (gene-editing or all natural spray), the apples are identical in every other way.

Given these two options, **which would you choose**?

| | | |
|---|---|---|
|  **Price:** $3.99 per lb **Technology:** Traditional Breeding |  **Price:** $0.99 per lb **Technology:** All Natural Spray | I would choose neither |

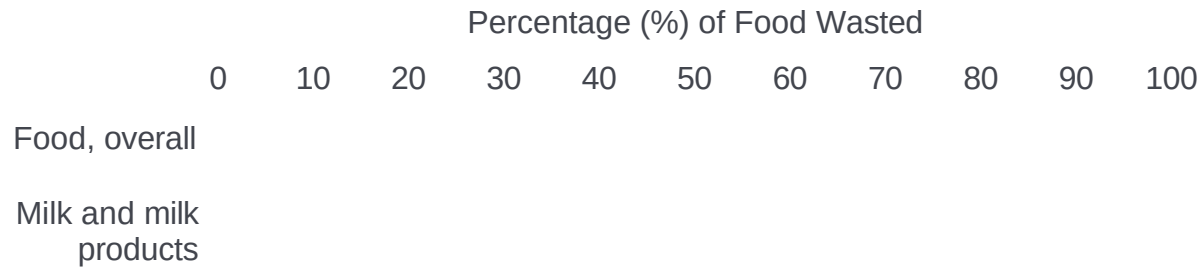
Imagine you are shopping for apples, and you can select from two apples below. Other than the price and the technology used to reduce browning (gene-editing or all natural spray), the apples are identical in every other way.

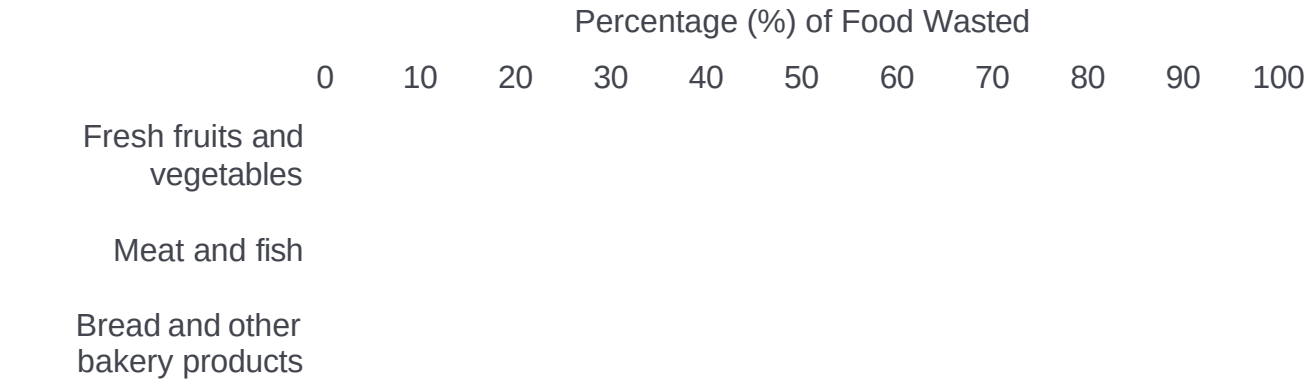
Given these two options, **which would you choose**?

| | | |
|---|---|---|
|  **Price:** $2.49 per lb **Technology:** Traditional Breeding |  **Price:** $3.99 per lb **Technology:** All Natural Spray | I would choose neither |

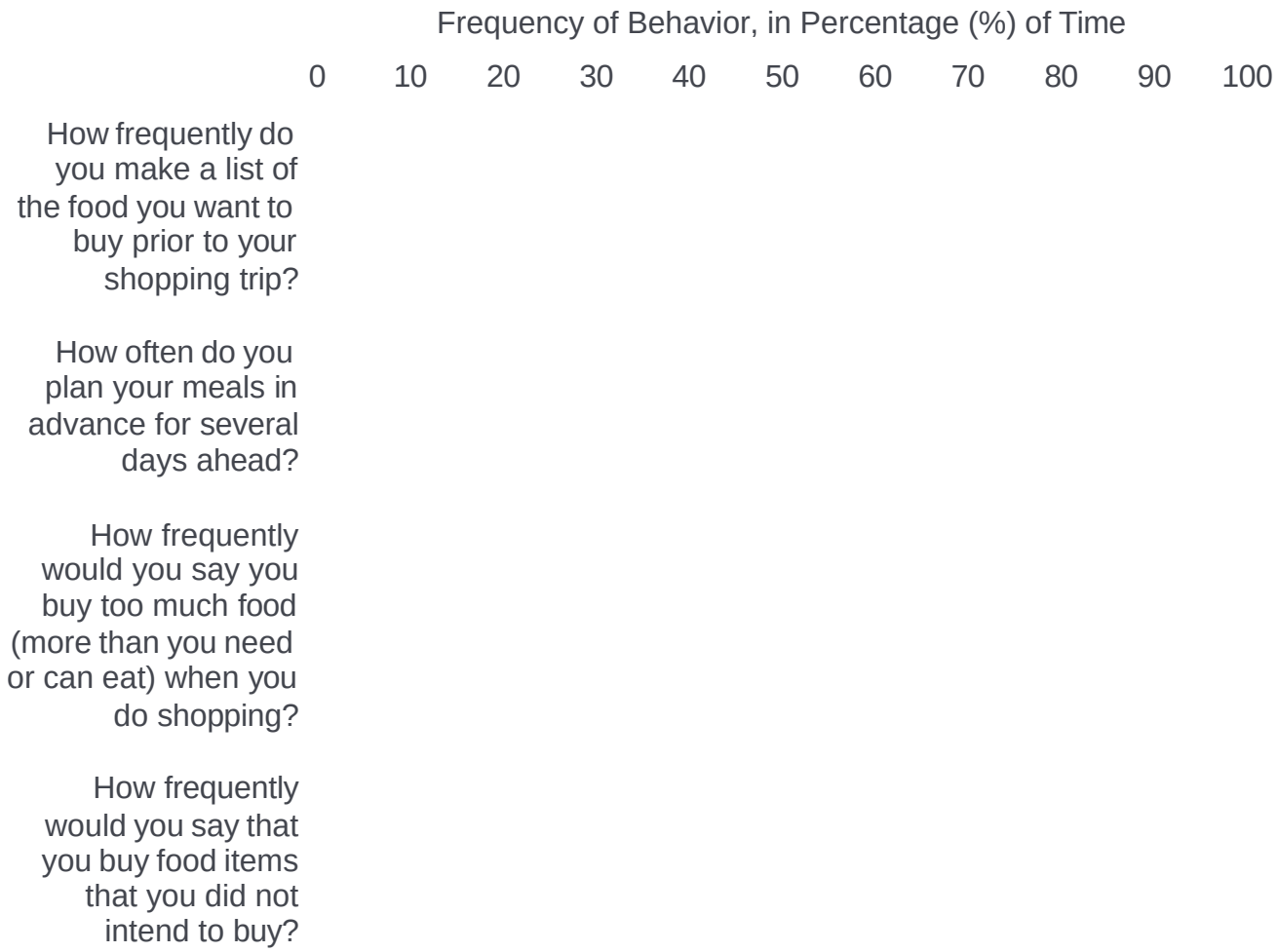
**Food Waste**

What percentage (approximately) of the food that you purchase in each of the following categories do you throw away in a regular week?

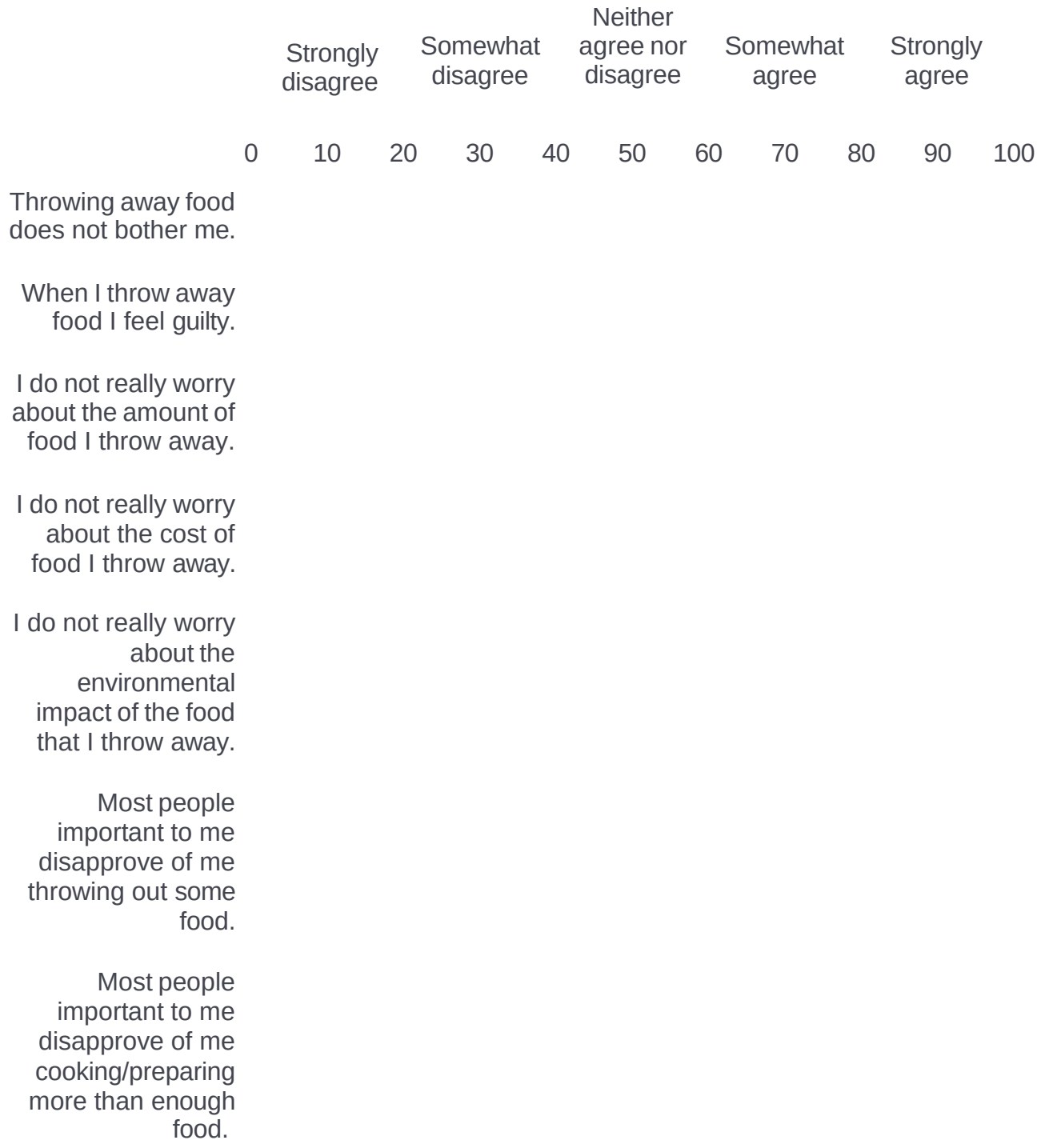





Please respond to the following statements with the percentage of time that you engage in each behavior.




Please respond to the below statements by telling us how strongly you agree or disagree with each statement.


Strongly disagree
Somewhat disagree
Neither agree nor disagree
Somewhat agree
Strongly agree
0
10
20
30
40
50
60
70
80
90
100
Throwing away food does not bother me.
When I throw away food I feel guilty.
I do not really worry about the amount of food I throw away.
I do not really worry about the cost of food I throw away.
I do not really worry about the environmental impact of the food that I throw away.
Most people important to me disapprove of me throwing out some food.
Most people important to me disapprove of me cooking/preparing more than enough food.

**Tech_Safety**

Below are three types of apples.

**How would you rank the type of technology used to reduce browning in the apples, in terms of safety?**

With 1 being the safest type of apple to consume and 3 being the least safe type of apple to consume.

| | 1 | 2 | 3 |
|---|---|---|---|
| Gene-edited | ○ | ○ | ○ |
| Traditional | ○ | ○ | ○ |
| Spray coating | ○ | ○ | ○ |

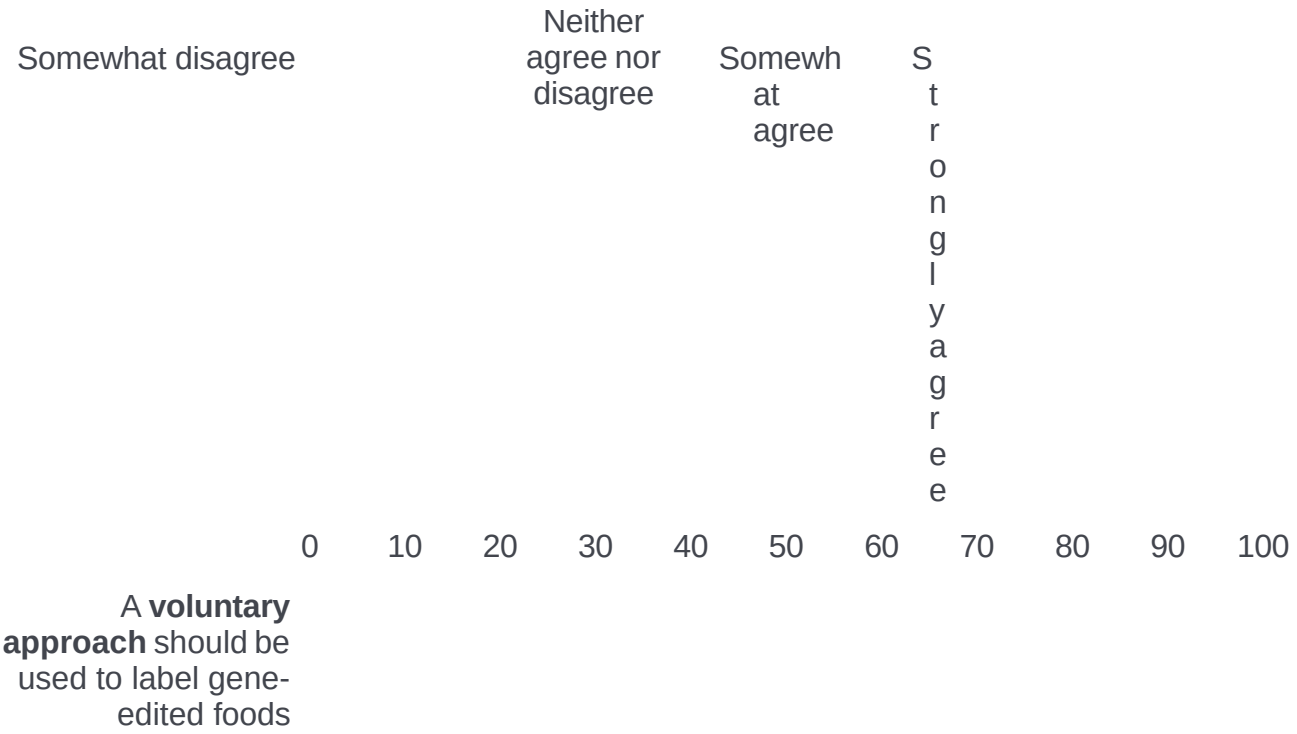
Would you be willing to consume a Gene Edited food product?

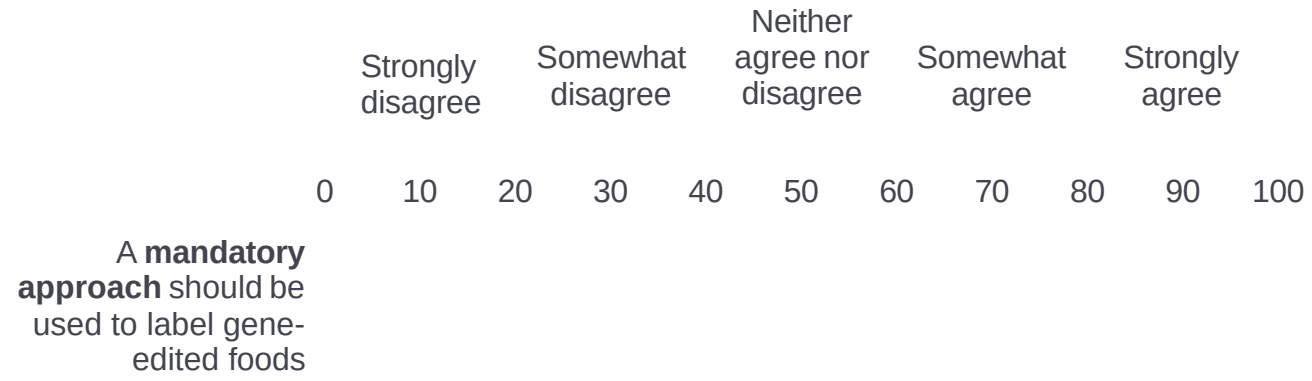
- ○ Definitely yes.
- ○ Probably yes.
- ○ Probably no.
- ○ Definitely no.
- ○ I do not know.

There are generally two approaches to labeling foods that include genetically modified or gene-edited ingredients: **voluntary** and **mandatory**. In the **voluntary approach**, food producers can choose to label their products, often using labels certified by third-party organizations to indicate the presence of genetically modified or gene-edited ingredients. **Mandatory labeling** requires all food producers to clearly label any genetically modified or gene-edited ingredients in their products, as per government-regulated standards.

What is your level of agreement with the following statements?

| | Strongly | d<br>i | s<br>a | g<br>r | e<br>e |
|---|---|---|---|---|---|


Somewhat disagree
Neither agree nor disagree
Somewhat agree
Strongly agree
0
10
20
30
40
50
60
70
80
90
100
A **voluntary approach** should be used to label gene-edited foods




**Health**

In general, would you say your physical health is poor, fair, good, very good or excellent? health?

- Poor
- Fair
- Good
- Very Good
- Excellent

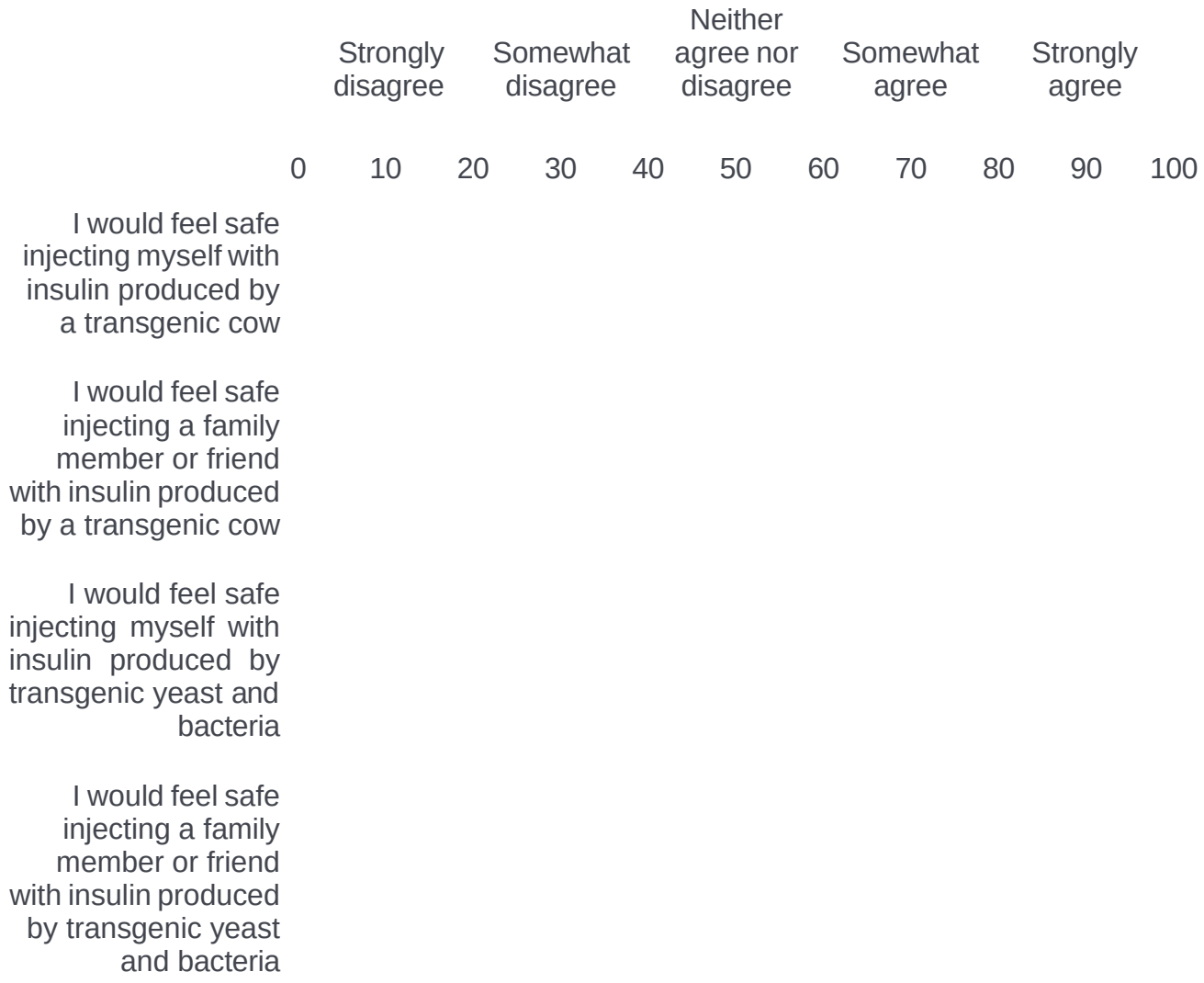
Do you currently or have you previously taken insulin as a result of having diabetes?

- Yes
- No
- I'd prefer not to say

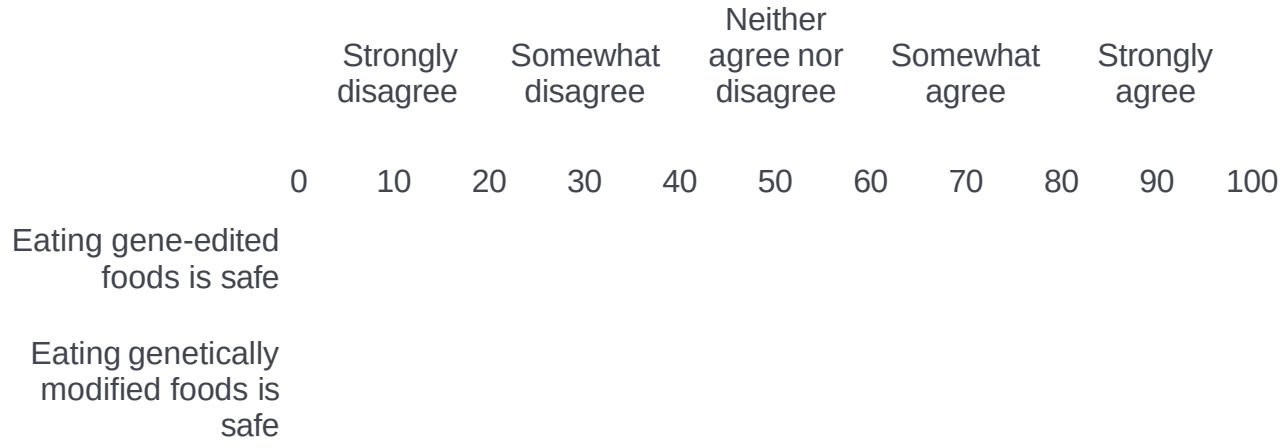
Researchers have inserted a segment of human DNA coding for proinsulin — the protein precursor of the active form of insulin — into cell nuclei of cow embryos to produce a transgenic cow. The lactation from this cow yielded milk, human proinsulin and insulin. A system to collect and purify insulin products is still needed, as well as FDA approval, before transgenic cows could supply insulin. Conservatively, a small 100-head herd of dairy cows could produce all the insulin need for the United States, while a larger herd

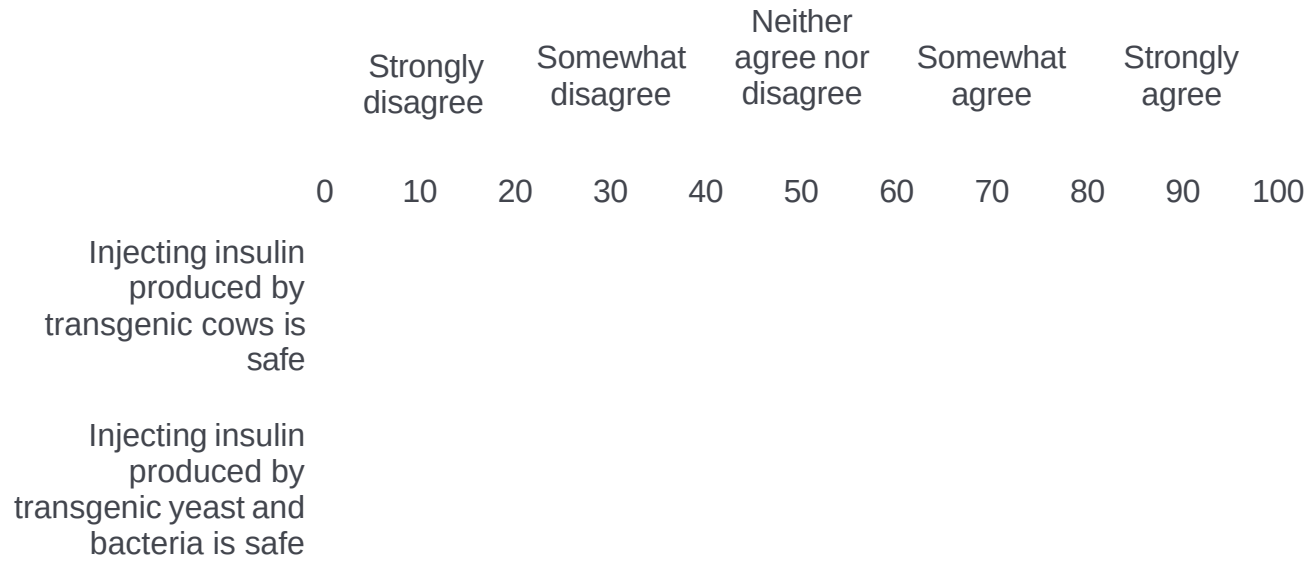
could potentially supply all the insulin for the world. Currently, insulin is produced by transgenic yeast and bacteria.

Please respond to each statement by indicating how strongly you agree or disagree with each statement.



Read each of the following statements and respond by indicating how strongly you agree or disagree with each statement.






**Demographic**

We would like some background information about you. This is an important part of our analysis. The survey is anonymous, and your name or personal information is not linked to the responses.

Are you of Spanish, Hispanic, or Latino origin?

- ○ Yes
- ○ No

Choose one or more races that you consider yourself to be

- ☐ White or Caucasian
- ☐ Black or African American
- ☐ American Indian/Native American or Alaska Native
- ☐ Asian
- ☐ Native Hawaiian or Other Pacific Islander
- ☐ Other
- ☐ Prefer not to say

In which state do you currently reside?

Do you live in an urban or rural area?

- In a city with more than 100,000 inhabitants
- In a city or urban area with between 1,000 and 99,999 inhabitants
- In a smaller town with less than 1,000 inhabitants

How many adults (including yourself) live in your household?

- Only 1
- 2
- 3
- 4
- More than 4 adults

How many children (under 18 years of age) live in your household?

- 0
- 1
- 2
- 3
- 4
- More than 4 children

What is your age?

- 18-24
- 25-34
- 35-44
- 45-54

- ○ 55+

What was your total household income before taxes during the past 12 months?

- ○ Less than $25,000
- ○ $25,000-$49,999
- ○ $50,000-$74,999
- ○ $75,000-$99,999
- ○ $100,000-$149,999
- ○ $150,000 or more
- ○ Prefer not to say

**Comments**

Thanks for participating the survey.

Are there any comments or thoughts that you would like to share? If so, please use the space below.
Thank you!