Appendix D. Survey

Gene Editing Milk - T1

Q1 MILK PREFERENCE SURVEY CONSENT FORM

This study aims to learn your preferences for fresh cow milk. Please read through the following information and indicate your consent to begin the survey. The survey should take approximately 15 minutes to complete. You must be 18 years of age or older to participate. Your participation will assist in the advancement of knowledge of U.S. consumers' preferences for fresh cow milk. There are no anticipated risks in this study. Your participation in the research is completely voluntary. Your survey responses will be recorded anonymously. No identifying personal information will be collected. Only basic demographic data will be asked. You are free to refuse to participate in the research and stop filling out the survey at any time. If you have questions about the survey please contact Dr. Jill McCluskey mccluskey@wsu.edu. If you have questions or concerns about your rights as a research participant, you can contact the WSU Human Research Protection Program (HRPP) at irb@wsu.edu. By checking the option below and answering the survey, you acknowledge that you have read the above statement and have been able to ask questions and express concerns, which have been satisfactorily answered by the investigator. 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.

- O I consent
- O I do not consent, I do not wish to participate
- Q2 Thank you for your participation!
- Q3 What is your age?
 - O Under 18
 - 0 18 24
 - 0 25 34
 - 0 35 44
 - 0 45 54
 - 0 55 64
 - 0 65 74
 - 0 75 84
 - O 85 or older
- Q4 How much of the grocery shopping do you do for your household?
 - O I buy almost all of the groceries
 - O I buy most of the groceries
 - O I buy about half of the groceries
 - O I buy less than half of the groceries
 - O I rarely buy groceries
 - O I do not buy groceries
- Q5 Have you purchased/consumed cow milk in the last 6 months?
 - o Yes
 - o No

SECTION A. Demographics

- Q6 What year were you born? Please enter your answer in a 4-digit date format (e.g., 1983).
- Q7 What is your gender?
 - O Male
 - Female
 - O Non-binary
 - O I prefer not to answer
- Q8 Which one of the following categories best describes your racial-ethnic identity?
 - White and not Hispanic/Latino
 - O Black or African American
 - O American Indian and Alaskan Native
 - Asian
 - Native Hawaiian and other Pacific Islander

	0	Hispanic or Latino
	0	Mixed race
	0	Other
Q 9	Wha	t is your highest completed education?
	0	Less than high school graduate
	0	High school graduate – includes equivalence
	0	Some college or associate degree
	0	Bachelor's degree
74 (0	Graduate or professional degree
710		fore taxes, what approximately was your combined annual household income in 2022?
	0	Less than \$25,000 \$25,000 - \$34,999
	0	\$25,000 - \$34,999 \$35,000 - \$49,999
	0	\$50,000-\$49,999
	0	\$50,000—\$74,999 \$75,000 — \$99,999
	0	\$/3,000 = \$99,999 \$100,000=\$149,999
	0	\$150,000-\$199,999
	0	More than \$200,000
	0	Prefer not to answer
) 11	-	luding yourself, how many people (including children under 18) are in your household?
	0	1
	0	2
	0	3
	0	4
	0	5
	0	6 or more
Q12	2 Но	w many children (under 18) share your household with you?
	0	0
	0	1
	0	2
	0	3
	0	4 or more
Q13		pet animal(s) live in your household?
	0	Yes
24.	0	No
214		you give money to animal shelters or charities?
		Yes
71 5	Ο	No e you vegetarian or vegan?
Z1.	0	Yes
	0	No
)1 <i>6</i>	-	which state do you currently reside?
	0	Alabama
		Alaska
	0	Arizona
	0	West Virginia
		Wisconsin
		Wyoming
	0	I do not reside in the United States
Q17	Wh	ere do you live?
	0	Rural area

0	Urban area		
0	Suburban area		
Q18 H	ow do you usually vote?		
0	Always Democratic		
0	More often Democratic		
0	Equally likely		
0	More often Republican		
0	Always Republican		
O19 Pl	ease select the response that best applies to you.		
(Yes	No
Have	you ever worked or lived on a farm or ranch?	0	0
Do yo	ou have a degree in a field related to agriculture, food production, or food ssing?	0	0
Have proce	you ever had a job in a field related to agriculture, food production, or food ssing?	0	0
SECTI	ON B. MEDIA HABBITS hat social media do you use most often?		
0	Twitter		
0	Facebook		
0	Instagram		
0	TikTok		
0	LinkedIn		
0	Other		
O21 LL	I don't use social media		
	ow often do you log in to social media? Never		
0	Monthly or less		
0	Weekly		
0	Daily		
0	A few times a day		
0	I'm always logged in		
	aditional Media-Do you subscribe to any of the following (select all that apply).		
0	Newspaper-Print		
0	Newspaper-Online		
0	News magazine (e.g., Times, Economist, etc.)-Print		
0	News magazine (e.g., Times, Economist, etc.)-Online		
0	Other print (please specify)		
Q23 In	general, what TV channel do you watch the most for your news?		
0	Fox		
0	ABC		
0	NBC		
0	CBS		
0	CNN		
0	MSNBC		
0	Other (please specify)		

Q24 Please indicate to what extent you TRUST the following sources of information on how the FOOD YOU EAT is produced.

F	Strongly do not trust	Slightly do not trust	Neutral	Slightly trust	Strongly trust
Activist groups (e.g., Green America, Just Label It)	0	0	0	0	0
Consumer organizations (e.g., American Council of Consumers Interests, Consumer Action, Consumer Alert)	0	0	0	0	0
Advocates for applying scientific evidence in food safety policy (e.g., Center for Science in the Public Interest)	0	0	0	0	0
Individual farmers	0	0	0	0	0
Attention check: Please mark Slightly trust	0	0	0	0	0
Farmer organizations (e.g., American Dairy Association)	0	0	0	0	0
Organic or sustainable agriculture farmers associations (e.g., Northeast Organic Dairy Producers Alliance)	0	0	0	0	0
Food manufacturers (e.g., Nestle USA, Danone, Kraft Heinz, Conagra)	0	0	0	0	0
Food retailers (e.g., Walmart, Safeway, Kroger, Whole Foods)	0	0	0	0	0
Friends, family members	0	0	0	0	0
Government agencies (e.g., US Department of Agriculture, US Food and Drug Administration)	0	0	0	0	0
Medical professionals (e.g., your primary physician)	0	0	0	0	0
Science journals and blogs (e.g., Nature, National Geographic, Discover Magazine, Scientific American, Science News, Wired Science)	0	0	0	0	0
Scientific Associations (e.g., Am. Assoc. for the Advancement of Science, Am. Medical Assoc., National Research Council).	0	0	0	0	0
Local Government (e.g., local mayor, city agencies)	0	0	0	0	0
Universities	0	0	0	0	0

Q25 Please indicate to what extent you TRUST the following sources of information from traditional media on how the FOOD YOU EAT is produced.

1	Strongly do not trust	Slightly do not trust	Neutral	Slightly trust	Strongly trust
Newspapers online or print (e.g., New York Times, Los Angeles Times)	0	0	0	0	0
General magazines (e.g., <i>US Weekly,</i> <i>People</i>)	0	0	0	0	0
Specialized magazines (e.g., Food network, Gourmet, Food and Wine)	0	0	0	0	0
Radio (e.g., NPR, Sirius radio channels)	0	0	0	0	0
Nationwide TV (e.g, NBC, CBS, ABC)	0	0	0	0	0
Food channels (e.g., Food Network)	0	0	0	0	0

Q26 Please indicate to what extent you TRUST the following sources of information from social media on how the FOOD YOU EAT is produced.

	Strongly do not trust	Slightly do not trust	Neutral	Slightly trust	Strongly trust
Facebook	0	0	0	0	0
Twitter	0	0	0	0	0
Instagram	0	0	0	0	0
YouTube	0	0	0	0	0
TikTok	0	0	0	0	0
Blogs	0	0	0	0	0
Pinterest	0	0	0	0	0
Reddit	0	0	0	0	0

SECTION D. Milk Characteristics

Q27 How important are the following items in your decision to purchase milk?

	Totally Irrelevant	Slightly Relevant	Relevant	Important	Crucial
Private brand (e.g., Dannon, Borden Dairy)	0	0	0	0	0
Price	0	0	0	0	0
Sell-by date	0	0	0	0	0
Ultra-pasteurized	0	0	0	0	0
Attention check: Please mark Totally Irrelevant	0	0	0	0	0
Lactose-reduced /Lactose free	0	0	0	0	0
Fat content	0	0	0	0	0
Organic	0	0	0	0	0
Package size	0	0	0	0	0
rBGH-free or rBST-free	0	0	0	0	0
Grass-fed cows	0	0	0	0	0
Reduced sugar content	0	0	0	0	0
High protein	0	0	0	0	0

SECTION E. Cheap Talk Milk

Q28 PLEASE KEEP IN MIND THAT Studies have shown that answering a question about a hypothetical purchase decision, as if the purchase was for real, is difficult for many people. Usually survey respondents are more likely to state that they would buy a product when responding to a survey than when the purchase decision is real, and they have to pay for the product. This happens because respondents might think "Sure, I will buy this product", but when the decision actually involves digging into their pockets to pay for it, respondents might think instead "Do I really want to spend my money on this product?". We ask that you try to avoid this situation and answer the following questions as you would if were really shopping at the store and had to pay for a gallon of milk.

- O I have carefully read the information provided and would like to proceed with the survey.
- Q29 How much do you know about CRIPSR-Cas9 (CRISPR) gene editing and its applications in food production?
 - O I am very knowledgeable about gene editing.
 - O I know some.
 - O I don't know much.
 - O I completely ignore what gene editing is.

SECTION F1. No information

Q30 Gene editing is a technology that enables geneticists and medical researchers to make targeted alterations to the DNA sequence that makes up the genome of a plant or animal. CRISPR/Cas9 are the most widely used gene-editing tools and can be used to turn off the gene in dairy cows that causes them to grow horns. In this survey, we refer to this specific use of gene editing to replace the traditional physical removal of horns dairy cows.

SECTION G1. Experiments

Q31 If you were going to buy a gallon of milk, choose only THE ONE option (either A or B) that you WOULD REALLY BUY. Otherwise, please select Option C to indicate you would not buy option A or B.

			Option	ı A		Option B				
			Milk Price \$4 Milkfat w	1.29		Price \$3.99 Milkfat 2%			otion C Teither	
I WOUL	D CHOOSE		0			0			0	
Q32 In a scal	le of 0 to 10, w	 here 0 :	= Very Unce	rtain and 10) = Very Ce	ertain, how	certain are	you of you	r answer ab	ove?
0	1	2	3	4	5	6	7 O	8	9	10
	vere going to bu JY. Otherwise,								WOULD	
			Option	Α		Option B				
			Milk TO PREVENT I DEMORNI MILK Price \$4 Milkfat w	89		MILK Price \$4.59 Milkfat 2%			ption C Jeither	
I WOUL	D CHOOSE		0			0			0	
Q34 In a scal 0 ○	le of 0 to 10, w	here 0 :	= Very Unce 3	ertain and 10 4) = Very Ce 5 ○	ertain, how 6	certain are 7	you of you: 8 O	r answer ab 9 O	ove?
	vere going to bu JY. Otherwise,		select Option	n C to indic	ate you wou	ıld not buy			WOULD	
			Option Milk Price \$4. Milkfat 2	59	Milk	Option B MILK Price \$3.99 ilkfat whole			otion C either	
I WOUL	D CHOOSE		0			0			0	
Q36 In a scal 0 ○	le of 0 to 10, w	here 0 =	= Very Unce	ertain and 10 4) = Very Ce 5 ○	ertain, how 6	certain are	you of you 8	r answer abo	ove?

Q37 If you were going to buy a gallon of milk, choose only THE ONE option (either A or B) that you WOULD REALLY BUY. Otherwise, please select Option C to indicate you would not buy option A or B. Option A Option B Milk Milk Option C Neither Price \$4.29 Price \$3.99 Milkfat whole Milkfat 2% I WOULD CHOOSE Q38 In a scale of 0 to 10, where 0 = Very Uncertain and 10 = Very Certain, how certain are you of your answer above? 2 3 6 10 \bigcirc \bigcirc \bigcirc \bigcirc \bigcirc \bigcirc \bigcirc \bigcirc \bigcirc 0 Q39 If you were going to buy a gallon of milk, choose only THE ONE option (either A or B) that you WOULD REALLY BUY. Otherwise, please select Option C to indicate you would not buy option A or B. Option A Option B Milk Option C Neither Price \$4.89 Price \$4.29 Milkfat whole Milkfat 2% Gene Edited Cows I WOULD CHOOSE 0 Q40 In a scale of 0 to 10, where 0 = Very Uncertain and 10 = Very Certain, how certain are you of your answer above? 3 4 5 10 6 \bigcirc \bigcirc Q41 If you were going to buy a gallon of milk, choose only THE ONE option (either A or B) that you WOULD REALLY BUY. Otherwise, please select Option C to indicate you would not buy option A or B. Option A Option B Milk Option C Neither Price \$4.59 Price \$4.89 Milkfat 2% Milkfat whole Gene Edited Cows I WOULD CHOOSE \bigcirc Q42 In a scale of 0 to 10, where 0 = Very Uncertain and 10 = Very Certain, how certain are you of your answer above? 0 2 3 4 5 6 7 8 9 10 1

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Q43 If you were going to buy a gallon of milk, choose only THE ONE option (either A or B) that you WOULD REALLY BUY. Otherwise, please select Option C to indicate you would not buy option A or B. Option B

			Price \$4 Milkfat 2	.59	M	D PREVENT PAINING DENOMING MILK Price \$4.89 filkfat who ae Edited C	le		ption C Jeither	
I WOULD CHOOSE			0			0			0	
Q44 In a scale of	0 to 10, w	here 0 =	Very Unce	rtain and 10) = Very Ce	ertain, how	certain are	you of you	r answer ab	ove?
0	1	2	3	4	5	6	7	8	9	10
\circ	\circ	\bigcirc	\bigcirc	\circ	\circ	\circ	\bigcirc	\bigcirc	\bigcirc	\circ

Q45 If you were going to buy a gallon of milk, choose only THE ONE option (either A or B) that you WOULD REALLY BUY. Otherwise, please select Option C to indicate you would not buy option A or B.

			Option Milk TO PREVENTI DEHORNI MILK ice \$4.89 M. Gene Edited	FAINFUL BIRGUE STATE STA		Option B MILK Price \$3.99 filkfat who		Option C Neither			
I WOUL	I WOULD CHOOSE		0			0			0		
Q46 In a sca	le of 0 to 10,	where 0 =	Very Unce	rtain and 10	= Very Ce	ertain, how	certain are	you of you	answer ab	ove?	
0	1	2	3	4	5	6	7	8	9	10	
\bigcirc	\bigcirc	\bigcirc	\bigcirc	\bigcirc	\bigcirc	\bigcirc	\bigcirc	\bigcirc	\bigcirc	\bigcirc	

SECTION H. Animal Welfare

Q79 Please indicate your agreement to the following statements in the matrix below.

	Strongly agree	Agree	Somewhat agree	Neither agree nor disagree	Somewhat disagree	Disagree	Strongly disagree
It is important that the food I normally eat has been produced in a way that animals have not experienced pain.	0	0	0	0	0	0	0
It is important that the food I normally eat has been produced in a way that animals' rights have been respected.	0	0	0	0	0	0	0
In general humans have too little respect for the quality of life of animals.	0	0	0	0	0	0	0

Increased regulation of the treatment of animals in farming needed.	is	0	0	0	0	0	0
Animal agriculture raises seriou ethical questions about the treatment of animals.	s	0	0	0	0	0	0
As long as animals do not suffe pain, humans should be able to use them for any purpose.		0	0	0	0	0	0
Q80 Please indicate your agreeme	nt to the fo	llowing sta	tements in the	e matrix belov	V.		
	Strongly agree	Agree	Somewhat agree	Neither agree nor disagree	Somewhat disagree	Disagree	Strongly disagree
It is acceptable to use animals to test consumer products such as soaps, cosmetics and household cleaners.	0	0	0	0	0	0	0

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SECTION I. Policy

Using gene-editing to reduce a farm animal's risk of injury or disease is acceptable.

Gene-editing should be

forbidden for farm animals even if it increases animal welfare.

The stress during animal

production could affect the quality of meat, milk, eggs and sub-products.

The farmer should be economically compensated for spending money to increase animal welfare.

Q81 Do you think gene editing can be used in ways that benefit animal welfare?

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- o Yes
- o No

Q82 Do you think gene editing can be used in ways that benefit society?

- o Yes
- O No

Q83 Which of the following best describes your views on gene editing of livestock?

- O Laws/policies should prohibit gene editing in livestock.
- O Laws/policies should be used to limit gene editing in livestock.
- O Laws/policies for gene editing in livestock should be the same as those governing conventional breeding in livestock.
- O Laws/policies should be used to encourage some types of gene editing in livestock.
- O Laws/policies should allow all gene editing.