

APPENDIX 1 The Survey Instrument

Consumer Survey: Genetic Modification in the Brewing of Beer

This survey will consist of 4 sections over 4 pages.

Section 1:

This part of the survey will help identify your preferences in the use of genetic modification in food and drink production. In the questions below we use beer as a typical product, consumed by many people. During this survey you will be asked to comment on different hypothetical situations relating to the brewing processing of beer. The characteristics we are interested are:

1. The price of the beer.
2. The type of yeast used to ferment the beer.
3. The type of barley used in the beer.

Background: What is Genetic Modification (GM)

Genetic modification is the process of transferring genes from one species of organism into a different species of organism. This can be done using genes from plants, animals or microorganisms. This is done to transfer characteristics of one organism into another. Some examples of this is the transfer of a fish gene into a tomato to make it more frost tolerant or the transfer of a gene from a pea into rice to add a new protein which gives it a health benefit. Genetic modification can be used to increase the productivity of plants and animals or to improve the health of consumers who eat them.

Key issues: Where do the genes come from?

The key issue of this survey involves attitudes towards the genetic modification of plants and microorganisms involved in the brewing of beer.

Traditional beer is made through the fermentation of barley by yeast that produces alcohol and carbon dioxide.

Yeast is a living microorganism that at the time of consumption is not present in the beer. The two types of genetically modified yeast that we are suggesting are either:

- 1) Designed to reduce the time of brewing and therefore the price of the beer, or
- 2) Designed to increase the level of antioxidants in the beer, which will lower cholesterol levels when consumed in moderation.

This is a significant health advantage because high cholesterol levels can be linked to many heart related diseases.

The genetically modified barley we are suggesting is designed to reduce costs for the farmer, and therefore the price of beer may fall.

The Design of this Survey

Hypothetical Situations

In this survey we will present you with hypothetical situations where you have the choice between 3 different middies (285 ml) of beer. One will always be made using conventional methods while the other two will have a different price and a different type of yeast and barley.

The price of the beer varies between \$2.00 and \$4.00 depending on the type of yeast and barley used. The conventional beer has a price that is set at \$3.00.

There are three different types of yeast being suggested: (i) conventional, (ii) genetically modified to reduce the brewing time and maybe the cost (GM - cost), or (iii) genetically modified to brew beer that is high in antioxidants designed to lower cholesterol by 20% if drunk in moderation (GM – health). These genes come from canola plants. Reducing cholesterol levels by this amount would lead to significant health improvements: The heart foundation says heart disease accounts for 40% of Australian deaths and a high cholesterol level is one of the major risk factors for developing heart disease.

The genetically modified barley is designed to improve the yields for the farmer which may in turn lead to a fall in the price of beer. However the cost savings for the farmer may not be passed on to the consumer so the price of beer may remain the same.

The Choices

Using the information that you have read, we would like you to make choices between 3 types of beer. Look at the characteristics of the beer and tick one of the boxes. You may prefer an alternative that is not one of those presented but for the purpose of this study we are asking for you to simply choose between the 3 options that are presented in each questions.

Example Question:

Suppose that you were offered a beer with the following characteristics:

Attribute	Conventional	Option 1	Option 2
Price	\$ 3.00	\$ 2.50	\$ 3.50
Barley	Conventional	GM	Conventional
Yeast	Conventional	GM(Cost)	GM (Health)

Which beer do you prefer? (tick one box)

If you preferred the conventional option to option 1 or 2 then you would tick the first box. If the decrease in price of 50 cents made option 1 more favorable with genetically modified barley and yeast then you would tick the second box. However if you decided that the reduced cholesterol from the GM beer was worth paying the extra 50 cents to buy then you would tick the third box.

Please answer the following questions and return this booklet in the Reply Paid envelope.

Section 1:

(1) If the following 3 middies of beers are the only ones available, which do you prefer?

Attribute	Conventional	Option 1	Option 2
Price	\$ 3.00	\$ 2.00	\$ 3.50
Barley	Conventional	Conventional	GM
Yeast	Conventional	GM (Cost)	GM (health)

Which beer do you prefer? (tick one box)

(2) If the following 3 middies of beers are the only ones available, which do you prefer?

Attribute	Conventional	Option 1	Option 2
Price	\$ 3.00	\$ 3.00	\$ 3.00
Barley	Conventional	Conventional	Conventional
Yeast	Conventional	GM (Cost)	GM (health)

Which beer do you prefer? (tick one box)

(3) If the following 3 middies of beers are the only ones available, which do you prefer?

Attribute	Conventional	Option 1	Option 2
Price	\$ 3.00	\$ 2.50	\$ 4.00
Barley	Conventional	Conventional	GM
Yeast	Conventional	GM (Cost)	GM (health)

Which beer do you prefer? (tick one box)

(4) If the following 3 middies of beers are the only ones available, which do you prefer?

Attribute	Conventional	Option 1	Option 2
Price	\$ 3.00	\$ 2.00	\$ 2.50
Barley	Conventional	Conventional	GM
Yeast	Conventional	GM (Cost)	GM (health)

Which beer do you prefer? (tick one box)

(5) If the following 3 middies of beers are the only ones available, which do you prefer?

Attribute	Conventional	Option 1	Option 2
Price	\$ 3.00	\$ 2.00	\$ 3.00
Barley	Conventional	GM	GM
Yeast	Conventional	Conventional	GM (Cost)

Which beer do you prefer? (tick one box)

(6) If the following 3 middies of beers are the only ones available, which do you prefer?

Attribute	Conventional	Option 1	Option 2
Price	\$ 3.00	\$ 3.00	\$ 2.00
Barley	Conventional	GM	GM
Yeast	Conventional	Conventional	GM (health)

Which beer do you prefer? (tick one box)

(7) If the following 3 middies of beers are the only ones available, which do you prefer?

Attribute	Conventional	Option 1	Option 2
Price	\$ 3.00	\$ 3.50	\$ 2.50
Barley	Conventional	Conventional	GM
Yeast	Conventional	GM (health)	Conventional

Which beer do
You prefer? (tick one box)

(8) If the following 3 middies of beers are the only ones available, which do you prefer?

Attribute	Conventional	Option 1	Option 2
Price	\$ 3.00	\$ 4.00	\$ 2.00
Barley	Conventional	Conventional	GM
Yeast	Conventional	GM (health)	GM (Cost)

Which beer do
You prefer? (tick one box)

(9) The following 3 middies of beers are the only ones available, which do you prefer?

Attribute	Conventional	Option 1	Option 2
Price	\$ 3.00	\$ 2.50	\$ 2.50
Barley	Conventional	Conventional	GM
Yeast	Conventional	GM (health)	GM (health)

Which beer do
You prefer? (tick one box)

(10) If the following 3 middies of beers are the only ones available, which do you prefer?

Attribute	Conventional	Option 1	Option 2
Price	\$ 3.00	\$ 3.00	\$ 3.00
Barley	Conventional	Conventional	GM
Yeast	Conventional	GM (health)	GM (health)

Which beer do
you prefer? (tick one box)

Section 2: This section is designed to let us know how well informed consumers are about genetic modification. Please answer true/false to each of the following statements:

1. Genetic Modification involves recombinant DNA technology.

True False don't know

2. There are no environmental issues involved with Genetic Modification.

True False don't know

3. Genetic Modification can only occur between related species.

True False don't know

4. Genetically Modified barley crops have already been commercially released in Australia.

True False don't know

5. Biotechnology is assisting laboratories in making insulin for diabetics.

True False don't know

Section 3
Attitudes Survey

Please circle the number that indicates your degree of approval or opposition to the following three questions

	Strongly Opposed	Opposed	No opinion	Approve	Strongly Approve	Don't Know
1. How do you feel about genetic modification of plants in food production?	1	2	3	4	5	6
2. How do you feel about genetic modification of animals in food production?	1	2	3	4	5	6
3. How do you feel about genetic modification of microorganisms in food production?	1	2	3	4	5	6
4. How do you feel about the use of genetic Modification to make medicines?	1	2	3	4	5	6
5. How do you feel about the use of genetic Modification to produce medically beneficial foods?	1	2	3	4	5	6
6. If you object to genetic modification on what do you base this opinion?						

(There may be more than one reason)

- Moral Environmental Religious
 Economical Food Safety
 Other

Please List: _____

7. Do you drink beer?

Yes No

8. If yes: How many standard drinks of beer would you consume in a week?

1-5 6-15
 16-30 31+

9. Do you look for organically grown foods when you are shopping?

Yes No

10. Do you read the ingredients labels of all of the foods that you buy?

Yes No

7. Have you ever had your cholesterol tested?

Yes No

If yes, was the level...

Of high concern? Of low concern?
 Of moderate concern? Of no concern?

12. In general, do you consider your cholesterol level to be important?

Yes No

13. Who do you trust the most about giving you information about genetic modification?

- Multinational companies
- Government agencies
- Print/Television Media
- No one
- Other

Please List: _____

14. What factor plays the greatest role in your food purchase decisions?

- Price
- Health
- Australian Made or not
- Other

Please List _____

Section 4

This final set of questions will allow us to ensure that the people we survey represent a cross section of the community. All information that you give us is confidential and it will not be revealed to anyone else.

1. What is your age? (please circle)

- 18 to 25 26 to 35 36 to 45
- 46 to 55 56 to 65 Over 65

2. What is your Sex? (please circle)

- Female Male

3. What is the Post Code for your home address? _____

4. What is your current employment status? (please circle)

- self-employed unemployed retired pension
- employed full time employed part time student
- home duties

5. What is your estimated annual household pre-tax income? (please circle)

- \$0-10,000 \$10,001-\$30,000
- \$30,001-\$50,000 \$50,001-\$70,000
- \$70,001-\$90,000 \$90,001+

6. What is the highest level of education you have completed? (please circle)

- Year ten or below Year 12 Certificate/diploma
- tertiary degree Other (please specify) _____

Thankyou for taking the time to answer this survey. Your responses are much appreciated. Please mail this booklet in the reply paid envelope.