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6.

appendix 3

Outcomes of Consultation: Submissions from the Public

Section contents

6. Analysis of Public Opinion Survey

Introduction

To ensure the opinions of the general public were fairly canvassed in a representative way, the Commissioners decided to commission a public opinion survey. The objectives of the survey and the methods used are described in Appendix 1 (see "Processes of the Commission: Public Opinion Survey: the process"). The survey, carried out in March–April 2001, involved interviewing 1153 New Zealanders 15 years of age or over. The survey was conducted by BRC Marketing & Social Research.

This section reports the key findings. Full details of all findings are provided in two appendices to the Public Opinion Survey: *Public Opinion Survey: Tabular results* and *Public Opinion Survey: Verbatim comments.* These documents are available on the Commission website.

Key overall findings

The key findings of the survey may be summarised as follows:

- **Genetic modification is not a 'top-of-mind' issue**.

   When asked on a completely unprompted basis to identify all the issues that were of importance to New Zealand's future, very few respondents mentioned genetic modification. At most, genetic modification was identified by 2% as an issue of importance. This is despite there being a high awareness of the term, "genetic modification", after prompting (93%).

- **Over one half believe genetic modification is of importance to New Zealand's future**.

   When respondents were asked to focus on genetic modification and indicate to what extent it was an issue of importance to New Zealand's future, nearly all were decisive in their response. Just over one half (51%) believed it was important to some degree or other, while 37% claimed it was unimportant. Few claimed it was neither important nor unimportant (6%) or they didn't know (6%).

Based on these results, the total sample interviewed for this survey has been segmented into two groups and these groups have, in turn, been used for reporting purposes:

(a) Those respondents who believed genetic modification is an issue of importance to New Zealand's future (referred to in this report as the "GM important" group).

(b) Those respondents who believed genetic modification was unimportant (referred to as the "GM unimportant" group).

- **Demographic differences hardly discriminate**.

    When the "GM important" group is compared on a demographic basis with the "GM unimportant" group, there are few differences. In fact, the only differences are in terms of age and gender, with the "GM important" group tending to have a slightly younger age profile and comprise more males.

    Importantly, there are few significant differences between the groups by other demographic descriptors, including ethnicity, employment status, occupation and income etc. (See "Demographic differences", after the summary of key findings, for a more detailed commentary of the results by these descriptors.)

- **The "GM unimportant" group is more likely to consider genetic modification to be important to them personally**.

    Although the "GM unimportant" group was identified as those respondents who did not believe genetic modification was an issue of importance to New Zealand, a greater proportion (75%) claimed it was an issue that was of importance to them personally compared with the "GM important" group (63%). This may be because, as a group, they hold much stronger (negative) convictions about genetic modification.

- **Relatively high proportions of respondents believed genetic modification is currently being practised in New Zealand**.

    Many of the survey questions focused on genetic modification in terms of eight specific areas or categories. Over 50% of respondents claimed genetic modification is currently being practised in New Zealand in terms of seven of these areas: research using plants (79%), medical research (72%), commercial crops (68%), processed foods (68%), research using animals (67%), pest control (65%), and medicines and vaccines (62%).

    The only exception was in terms of farm animals (43%).

    Although the "GM important" group was more likely to claim that genetic modification is being practised in New Zealand in each of the eight areas,

over 50% of the "GM unimportant" group claimed that genetic modification is currently being practised in terms of research using plants, processed foods, medical research, commercial crops, research using animals, pest control, and medicines and vaccines.

- **Few respondents claimed to be "very informed" about genetic modification**.

  Respondents' beliefs about the extent to which genetic modification is practised in New Zealand need to be considered in relation to the extent to which they felt informed about the subject.

  While most respondents (57%) claimed to be informed about genetic modification to some extent, only 7% claimed to be "very informed" as opposed to "just informed" (50%). This compares with just over one-third (36%) claiming to be uninformed.

  Slightly more of the "GM important" group (61%) than the "GM unimportant" group (58%) claimed to be informed.

- **Most respondents claimed there were "more advantages" in using genetic modification in four of the eight specific areas, while most claimed there were "more disadvantages" in the other four areas**.

  Over one-half of respondents believed that there were "more advantages" in using genetic modification in four particular areas: namely, medicines and vaccines (71%), medical research (71%), pest control (58%) and research using plants (56%).

  However, in contrast, over one-half also claimed there were "more disadvantages" in using genetic modification in four other areas: namely, processed foods (69%), farm animals (59%), research using animals (53%) and (marginally) commercial crops (49%).

  In general, the "GM important" group was more likely to claim there were "more advantages" and less likely to claim there were "more disadvantages".

- **Medical research, and medicines and vaccines were the two areas most approved of in terms of genetic modification**.

  In addition to medical research (65%) and medicines and vaccines (64%), pest control (54%) and research using plants (52%) were the four areas most frequently approved ("just approve"/"strongly approve") of by the majority of respondents. However, 25% of respondents claimed there was no area in which they approved of genetic modification.

  In contrast, the other four areas were most frequently disapproved ("disapproved"/"strongly disapproved") of by the majority of respondents:

namely, processed foods (73%), farm animals (70%), research using animals (66%), and commercial crops (58%). Seventeen percent (17%) claimed there was no area in relation to which they disapproved of genetic modification.

For both the "GM important" group and the "GM unimportant" group, approval of genetic modification was highest for medical research (84% of the "GM important" group and 39% of the "GM unimportant" group) and medicines and vaccines (83% of the "GM important" group and 38% of the "GM unimportant" group). However, with the exception of these two areas (medicines and vaccines, and medical research), fewer than 30% of the "GM unimportant" group approved of any of the other areas.

Table 6.1 summarises the key results of the survey.

Importance of genetic modification to New Zealand

There are many ways that the results of the Public Opinion Survey could be analysed and reported. In addition to analysing the results on a demographic basis, one of the more insightful ways is to draw a distinction between those who feel genetic modification is of importance to New Zealand in terms of its future, and those who do not feel this is the case.

In this regard, respondents were asked to state how important they believed the issue of genetic modification was to New Zealand's future, using the following question:

> Q12 "And how important do you believe it is to New Zealand's future to use genetic modification?"

The results for this question are presented in Table 6.2. This shows that just over half (51%) of respondents believed genetic modification is important ("just important" or "very important") to New Zealand's future, while just over a third (37%) believed it is unimportant ("just unimportant" or "very unimportant"). Another 6% considered it neither important nor unimportant, and 6% simply "didn't know".

Given the existence of these two discrete "importance" groups, the analysis and reporting of the results of the survey is undertaken in this report from this perspective. (The section "Demographic differences" later in this report and the Public Opinion Survey appendix volume, *Public Opinion Survey: Tabular results* (available on the Commission's website), provide further analysis based on a range of demographic descriptors.)

Table 6.1   Summary of key results of Public Survey (by "importance to New Zealand's future")

	Sub sample n = 1093[1] %	Sub sample GM important n = 555[1] %	Sub sample GM unimportant n = 538[1] %
GM first mentioned as an issue of importance (Q1a)	1	0	2
GM mentioned at all (Q1a/Q1b)	2	2	3
Awareness of term GM (Q2)	93	93	95
GM already used in NZ (a lot/ somewhat) (Q4)			
Commercial crops	68	69	67
Farm animals	43	45	41
Pest control	65	68	62
Processed foods	68	68	69
Medicines and vaccines	62	66	59
Research using plants	79	80	79
Research using animals	67	68	66
Medical research	72	74	67
GM has more advantages (more disadvantages) (Q5)			
Commercial crops	42(49)	57(39)	21(74)
Farm animals	30(59)	45(46)	13(78)
Pest control	58(33)	71(21)	40(53)
Processed foods	22(69)	33(58)	9(86)
Medicines and vaccines	71(20)	85(9)	51(39)
Research using plants	56(35)	72(21)	37(58)
Research using animals	37(53)	52(39)	19(73)
Medical research	71(20)	87(8)	51(39)
Approve (disapprove) of GM (Q6)			
Commercial crops	36(58)	55(39)	12(85)
Farm animals	25(70)	39(55)	6(91)
Pest control	54(39)	72(22)	29(66)
Processed foods	21(73)	35(59)	6(92)

[1] Note: Excludes respondents who had no awareness of genetic modification or genetic engineering (Q1a/Q1b, Q2, Q2a)

Table 6.1   continued

	Sub sample n = 1093[1] %	Sub sample GM important n = 555[1] %	Sub sample GM unimportant n = 404[1] %
Approve (disapprove) of GM (Q6) *continued*			
Medicines and vaccines	64(28)	83(13)	38(53)
Research using plants	52(41)	73(23)	26(70)
Research using animals	29(66)	45(49)	9(89)
Medical research	65(28)	84(11)	39(53)
Area most approve of for GM (Q7)			
Commercial crops	4	6	2
Farm animals	1	1	1
Pest control	10	10	9
Processed foods	1	2	0
Medicines and vaccines	22	26	16
Research using plants	5	5	6
Research using animals	1	2	1
Medical research	29	38	17
Approve of none	25	9	48
Don't know	1	1	0
Area least approve of for GM (Q8)			
Commercial crops	10	6	15
Farm animals	15	16	15
Pest control	3	3	3
Processed foods	26	25	28
Medicines and vaccines	2	1	3
Research using plants	2	1	3
Research using animals	16	16	13
Medical research	4	3	7
Disapprove of none	17	27	3
Don't know	1	1	1
GM has a lot/some to offer NZ (Q9)	54	77	21
Personally very informed/just informed about GM (Q10)	57	61	58
GM very important/just important to me personally (Q11)	67	63	75

[1] Note: Excludes respondents who had no awareness of genetic modification or genetic engineering (Q1a/Q1b, Q2, Q2a)

Table 6.2   Importance of genetic modification to New Zealand's future

Q12   And how important do you believe it is to New Zealand's future to use genetic modification?

	Sub sample n = 1093[1] %
Very important	18
Just important	33
Neither	6
Just unimportant	19
Very unimportant	18
Don't know	6
Total	100

Note: Components may not always add to 100% exactly because of rounding.
[1]Note: Excludes respondents who had no awareness of genetic modification or genetic engineering (Q1a/Q1b, Q2, Q2a)

Demographic profile of the two "importance" groups

In this section, we provide a demographic description or profile of the two "GM importance" groups; that is, the 51% of respondents who believed genetic modification is of importance (ie, "just important" or "very important") to New Zealand's future (referred to here as the "GM important" group), and the 37% who believed it is not of importance (ie, it is "just unimportant" or "very unimportant"), referred to here as the "GM unimportant" group (see Table 6.2).

In many respects, the two groups are demographically similar (eg, in terms of ethnicity, occupation, scientific background, income, household type, education, area), suggesting that demographic variables do not necessarily hold the key to understanding the attitudes and opinions of these groups[1].

However, what demographic differences exist, appear to be mostly in terms of gender and age and are as follows. Those in the "GM important" group are more likely to be:

- male (50%, compared with 36% of the "GM unimportant" group)
- under 30 years of age (25% are aged 15–29, compared with 14% of the "GM unimportant" group)

In comparison, the "GM unimportant" group is more likely to be:

- female (64%, compared with 50% of the "GM important" group)
- between 30 and 59 years of age (63%, compared with 53% of the "GM important" group).

Tables 6.3–6.12 present the demographic profile data for the "GM important" and "GM unimportant" groups.

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[1] Results between these two groups need to be greater than plus or minus 4% to be significant.

Table 6.3   Gender (by "importance to New Zealand's future")

	Sub sample n = 1093[1] %	Sub sample GM important n = 555[1] %	Sub sample GM unimportant n = 404[1] %
Male	42	50	36
Female	58	50	64
Total	100	100	100

Note: Components may not always add to 100% exactly because of rounding.
[1]Note: Excludes respondents who had no awareness of genetic modification or genetic engineering (Q1a/Q1b, Q2, Q2a).

Table 6.4   Age (by "importance to New Zealand's future")

Q13   Which of the following age groups do you fit into?

	Sub sample n = 1093[1] %	Sub sample GM important n = 555[1] %	Sub sample GM unimportant n = 538[1] %
15 to 19 years old	6	9	4
20 to 29 years old	13	16	10
30 to 39 years old	21	17	25
40 to 49 years old	21	21	21
50 to 59 years old	16	15	17
60 to 69 years old	12	11	13
70 years and over	11	11	10
Total	100	100	100

Note: Components may not always add to 100% exactly because of rounding.
[1]Note: Excludes respondents who had no awareness of genetic modification or genetic engineering (Q1a/Q1b, Q2, Q2a).

Table 6.5   Ethnicity (by "importance to New Zealand's future")

Q20   And finally, which of these ethnic groups do you fit into? You can be in more
          than one.

	Sub sample n = 1093[1] %	Sub sample GM important n = 555[1] %	Sub sample GM unimportant n = 538[1] %
M a o r i	1 1	1 0	1 3
NZ European	80	79	82
Other European	8	8	8
Samoan	1	0	0
Cook Island Maori	0	1	0
Tongan	0	0	0
Niuean	0	0	0
Other	7	8	4
Refused	1	1	1
Total	**	**	**

Note: Total may exceed 100% because of multiple responses.
[1]Note: Excludes respondents who had no awareness of genetic modification or genetic
engineering (Q1a/Q1b, Q2, Q2a).

Table 6.6   Employment status (by "importance to New Zealand's future")

Q16   At present, are you...?

	Sub sample n = 1093[1] %	Sub sample GM important n = 555[1] %	Sub sample GM unimportant n = 538[1] %
Self-employed	14	14	14
Full-time salary or wage earner	38	38	36
Part-time salary or wage earner	11	9	12
Retired	18	18	17
Full-time home maker	7	5	10
Student	8	11	6
Unemployed	1	2	1
Other beneficiary	3	3	3
Total	100	100	100

Note: Components may not always add to 100% exactly because of rounding.
[1]Note: Excludes respondents who had no awareness of genetic modification or genetic engineering (Q1a/Q1b, Q2, Q2a).

Table 6.7   Occupational status (by "importance to New Zealand's future")

Q17   And what is your current occupation?

	Sub sample n = 716[1] %	Sub sample GM important n = 353[1] %	Sub sample GM unimportant n = 259[1] %
Clerical or sales employee	20	17	24
Semi-skilled worker	6	5	4
Technical or skilled worker	14	15	13
Business manager or executive	10	11	9
Business owner or self-employed	2	2	2
Teacher, nurse, police, other trained service worker	19	17	20
Professional or senior government official	12	13	11
Labourer, manual, agricultural or domestic worker	10	10	9
Farmer owner or manager	3	4	2
Other	4	4	4
Refused	1	0	1
Total	100	100	100

Note: Components may not always add to 100% exactly because of rounding.
[1]Note: Only includes respondents who said they were full- or part-time wage or salary earners or retired (at Q16) and excludes respondents who had no awareness of genetic modification or genetic engineering (Q1a/Q1b, Q2, Q2a).

Table 6.8   Scientific background (by "importance to New Zealand's future")

Q17a   Can you please tell me if you have, or have had, any professional background or training in the sciences?

	Sub sample n = 1093[1] %	Sub sample GM important n = 555[1] %	Sub sample GM unimportant n = 404[1] %
Yes	15	16	16
No	85	84	84
Refused	0	0	0
Total	100	100	100

Note: Components may not always add to 100% exactly because of rounding.
[1]Note: Excludes respondents who had no awareness of genetic modification or genetic engineering (Q1a/Q1b, Q2, Q2a).

Table 6.9   Income (by "importance to New Zealand's future")

Q18   And which of these best describes your annual income?

	Sub sample n = 1093[1] %	Sub sample GM important n = 555[1] %	Sub sample GM unimportant n = 404[1] %
Under $20,000	32	32	31
$20,000 but less than $30,000	15	15	15
$30,000 but less than $40,000	15	17	13
$40,000 but less than $60,000	18	16	20
$60,000 or more	13	13	13
Refused	5	4	4
Don't know	2	2	3
Total	100	100	100

Note: Components may not always add to 100% exactly because of rounding.
[1]Note: Excludes respondents who had no awareness of genetic modification or genetic engineering (Q1a/Q1b, Q2, Q2a).

Table 6.10 Household type (by "importance to New Zealand's future")

Q15   Which of the following situations best describes your household type?

	Sub sample n = 1093[1] %	Sub sample GM important n = 555[1] %	Sub sample GM unimportant n = 404[1] %
Parent/guardian with pre-school children	10	8	12
Parent/guardian with school-aged children (<18)	24	23	26
Parent/guardian with adult children living at home	12	14	9
Couple, no children in the household	27	28	26
Group flatting together (not relatives)	4	4	4
Single, living with parents	3	4	2
Single, living alone	19	17	20
Extended family	3	3	2
Other	2	2	2
Refused	0	0	0
Total	**	**	**

Note: Components may not always add to 100% exactly because of multiple responses.
[1]Note: Excludes respondents who had no awareness of genetic modification or genetic engineering (Q1a/Q1b, Q2, Q2a).

Table 6.11 Highest educational qualification (by "importance to New Zealand's future")

Q15 What is your highest educational qualification?

	Sub sample n = 1093[1] %	Sub sample GM important n = 555[1] %	Sub sample GM unimportant n = 404[1] %
No school examinations	12	12	13
NZ School Certificate in one or more subjects	18	18	19
NZ Sixth Form Certificate in one or more subjects	7	7	8
NZ University Entrance before 1986 in one or more subjects	5	5	6
NZ Higher School Certificate or Higher Leaving Certificate	3	3	3
University Entrance qualification from NZ University Bursary	6	7	6
NZ A or B Bursary, Scholarship or National Certificate Level 3	3	4	2
Other NZ secondary school qualification	1	1	1
Overseas secondary school qualification	2	1	2
New Zealand certificate, Trade certificate	7	8	6
Polytechnic, University course below Bachelors Degree	10	9	10
Bachelors Degree	14	14	13
Degree higher than a Bachelors Degree	6	9	4
Other Tertiary	3	3	3
Total	100	100	100

Note: Components may not always add to 100% exactly because of rounding.
[1]Note: Excludes respondents who had no awareness of genetic modification or genetic engineering (Q1a/Q1b, Q2, Q2a).

Table 6.12 Area – Geographical region (by "importance to New Zealand's future")

	Sub sample n = 1093[1] %	Sub sample GM important n = 555[1] %	Sub sample GM unimportant n = 404[1] %
Auckland	39	37	38
Christchurch	14	14	14
Dunedin	5	5	4
Gisborne	1	1	1
Hamilton	6	6	7
Hawke's Bay	5	5	5
Invercargill	2	2	3
Nelson	2	2	2
New Plymouth	2	2	3
Palmerston North	3	3	3
Rotorua	3	2	3
Tauranga	3	3	4
Wairarapa	0	0	0
Wanganui	2	1	1
Wellington	14	15	12
Whangarei	2	2	1
Total	100	100	100

Note: Components may not always add to 100% exactly because of rounding.
[1]Note: Excludes respondents who had no awareness of genetic modification or genetic engineering (Q1a/Q1b, Q2, Q2a).

Key findings

Awareness and understanding of genetic modification

In order to determine whether genetic modification was a 'top-of-mind' issue, the interview began with respondents being asked the following question:

> Q1a/Q1b: "First of all, in your opinion, what issues are of greatest importance to New Zealand's future? These could be social, cultural or economic issues, for example. Anything else?"

All issues mentioned were recorded as a matter of course. However, if respondents did not mention genetic modification in response to the question, they were asked directly if they had heard of the term:

> Q2: "Have you heard of the term genetic modification?"

If respondents claimed they had not heard of the term, they were then asked if they had heard of the term "genetic engineering" or "GE":

> Q2a: "Have you heard of the term genetic engineering or GE?"

Finally, if respondents were aware of the terms "genetic modification", "genetic engineering" or "biotechnology" on an unprompted or prompted basis, they were then asked to define what the term[2] meant to them:

> Q3: "If you had to describe to a friend what genetic modification/genetic engineering/ biotechnology means, what would you say to them?"

Note that the question on the importance of genetic modification to New Zealand's future, which forms the basis of this report's segmentation between the "GM important" group and the "GM unimportant" group, was asked only of respondents who were aware of the term "genetic modification" or "genetic engineering" (Q1a/Q1b, Q2 Q2a) and hence, awareness of genetic modification for these groups is higher than in the total sample.

The following conclusions can be made:

- Very few respondents identified genetic engineering/genetic modification as an issue of importance to New Zealand's future on a completely unprompted basis. There were no marked differences between the "GM important" group and the "GM unimportant" group in this regard.

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[2] Respondents were asked to define whatever term (ie, genetic modification, genetic engineering or biotechnology) they recognised or mentioned first.

- After prompting, similar proportions of the "GM important" group (93%) and the "GM unimportant" group (95%) claimed to be aware of the term "genetic modification".

- When asked to define what genetic engineering/modification was, the most common response was that it involved the alteration/modification of DNA or the genetic structure of cells (29%):

  > "… manipulation of the gene sequencing and components of plants and animals"
  >
  > "… modification of an organism's genes either by the removal of its natural gene or the addition of a foreign gene"
  >
  > "… the addition or removal of a portion of DNA from a gene which causes or changes a response".

- Other respondents stated that genetic modification was basically a man-made version of a natural product (19%). A further 12% believed genetic modification was a means of improving/refining something by removing or enhancing certain features, whereas others frowned upon it as they considered genetic modification to be no more than Man interfering with Nature (12%):

  > "… using scientific knowledge to create something to a pattern devised by man instead of God"
  >
  > "… taking the DNA from one organism and putting it into another organism to improve or eradicate certain characteristics"
  >
  > "… altering the genetic codes to eliminate disease and improve quality of produce, animals and plants"
  >
  > "… interfering with nature"

Tables 6.13–6.17 present the data on awareness and understanding.

To what extent is genetic modification already being used in New Zealand?

In order to establish whether respondents believed genetic modification was already used in New Zealand, they were asked the following question:

> Q4: "To what extent do you believe genetic modification is already used in New Zealand in the following areas? As I read each area, please tell me if it's a lot, somewhat, a little, or not at all?"

Table 6.13 First-mentioned issue of importance to New Zealand's future (by "importance to New Zealand's future")

Q1a   What issues are of greatest importance to New Zealand's future?

	Sub sample n = 1093[1] %	Sub sample GM important n = 555[1] %	Sub sample GM unimportant n = 404[1] %
Genetic modification	1	0	2
Genetic engineering	0	1	0
Biotechnology	0	0	0
The economy in general	28	32	22
Health in general	9	7	12
Education in general	13	12	14
The environment	2	2	3
Race relations	7	8	7
Other	34	32	37
Refused	0	0	0
Don't know	5	6	4
Total	100	100	100

Note: Components may not always add to 100% exactly because of rounding.
[1]Note: Excludes respondents who had no awareness of genetic modification or genetic engineering (Q1a/Q1b, Q2, Q2a).

Table 6.14 Total unprompted mention of genetic modification as an issue of importance to New Zealand's future (by "importance to New Zealand's future")

Q1a   What issues are of greatest importance to New Zealand's future?

Q1b   Anything else?

	Sub sample n = 1093[1] %	Sub sample GM important n = 555[1] %	Sub sample GM unimportant n = 404[1] %
Genetic modification	2	2	3
Genetic engineering	2	1	3
Biotechnology	2	2	1
The economy in general	40	44	35
Health in general	24	21	30
Education in general	29	27	32
The environment	7	6	9
Race relations	15	17	14
Other	54	52	56
Refused	0	0	0
Don't know	5	6	4
Total	**	**	**

Note: Components may not always add to 100% due to multiple response.
[1]Note: Excludes respondents who had no awareness of genetic modification or genetic engineering (Q1a/Q1b, Q2, Q2a).

**Table 6.15   Prompted mention of the term "genetic modification"
(by "importance to New Zealand's future")**

Q2   Have you heard of the term genetic modification?

	Sub sample n = 1068[1] %	Sub sample GM important n = 545[1] %	Sub sample GM unimportant n = 394[1] %
Yes	93	93	95
No	6	7	5
Don't know	0	0	0
Total	100	100	100

Note: Components may not always add to 100% exactly because of rounding.
[1]Note: Excludes respondents who had unprompted awareness of genetic modification at Q1a or Q1b.

Table 6.16 Prompted mention of the term "genetic engineering" or "GE" (by "importance to New Zealand's future")

Q2a   Have you heard of the term genetic engineering or GE?

	Sub sample n = 71[1] %	Sub sample GM important n = 42[1] %	Sub sample GM unimportant n = 20[1] %
Yes	100	100	100
No	na	na	na
Don't know	na	na	na
Total	100	100	100

Note: Components may not always add to 100% exactly because of rounding.
[1]Note: Excludes respondents who had unprompted awareness of genetic modification or genetic engineering at Q1a or Q1b or prompted awareness of genetic modification at Q2.
na: The "importance to New Zealand's future" segments (ie, the "GM important" and "GM unimportant" groups) are derived from those respondents who had awareness of genetic modification or genetic engineering at Q1a/Q1b, Q2 or Q2a.

**Table 6.17   Definition of genetic modification/genetic engineering/
biotechnology (by "importance to New Zealand's
future")**

Q3   If you had to describe to a friend what genetic modification/genetic engineering/
biotechnology means, what would you say to them?

	Sub sample n = 1093[1] %	Sub sample GM important n = 555[1] %	Sub sample GM unimportant n = 404[1] %
Altering the genetic structure of cells etc/manipulating DNA of things	29	31	25
Altering something/altering a natural thing/creating something man-made	19	16	22
Altering something to make it better/improving something	12	13	10
Playing with nature/altering the order of things/playing God	12	10	15
Cloning/Dolly	4	4	4
General disapproval	4	2	6
Taking genetic material from one thing and putting into another	4	5	5
Other	5	6	3
Answer not given/unspecified answer	12	14	9
Total	100	100	100

Note: Components may not always add to 100% exactly because of rounding.
[1]Note: Excludes respondents who had no awareness of genetic modification or genetic
engineering (Q1a/Q1b, Q2, Q2a).

The areas or categories in question were: commercial crops, farm animals, pest control, processed foods, medicines and vaccines, research using plants, research using animals, and medical research. Results are shown in Table 6.18.

The following conclusions can be drawn:

- Relatively high proportions of respondents claimed genetic modification was currently being practised in New Zealand in certain areas. Over 50% claimed this was the case in terms of: research using plants (79%), medical research (72%), commercial crops (68%), processed foods (68%), research using animals (67%), pest control (65%), and medicines and vaccines (62%).

Table 6.18 Extent to which genetic modification is already being used in New Zealand (by "importance to New Zealand's future")

Q4   To what extent do you believe genetic modification is already used in New Zealand in the following areas? As I read each area, please tell me if it's a lot, somewhat, a little, or not at all?

	Sub sample n = 1093[1] %	Sub sample GM important n = 555[1] %	Sub sample GM unimportant n = 404[1] %
Commercial crops			
A lot	36	37	37
Somewhat	32	32	30
A little	24	26	22
Not at all	3	2	5
Don't know	4	3	6
Total	100	100	100

Note: Components may not always add to 100% exactly because of rounding.
[1]Note: Excludes respondents who had no awareness of genetic modification or genetic engineering (Q1a/Q1b, Q2, Q2a).

Table 6.18   continued

	Sub sample n = 1093[1] %	Sub sample GM important n = 555[1] %	Sub sample GM unimportant n = 404[1] %
Farm animals			
A lot	16	17	15
Somewhat	27	28	26
A little	38	39	37
Not at all	13	13	13
Don't know	7	4	10
Total	100	100	100
Pest control			
A lot	40	40	41
Somewhat	25	28	21
A little	18	19	16
Not at all	6	5	6
Don't know	12	8	15
Total	100	100	100
Processed foods			
A lot	38	37	40
Somewhat	30	31	29
A little	24	25	23
Not at all	4	4	3
Don't know	5	3	5
Total	100	100	100
Medicines and vaccines			
A lot	40	44	38
Somewhat	22	22	21
A little	17	18	18

Note: Components may not always add to 100% exactly because of rounding.
[1]Note: Excludes respondents who had no awareness of genetic modification or genetic engineering (Q1a/Q1b, Q2, Q2a).

Table 6.18   continued

	Sub sample n = 1093[1] %	Sub sample GM important n = 555[1] %	Sub sample GM unimportant n = 538[1] %
Medicines and vaccines *continued*			
Not at all	5	4	5
Don't know	16	12	18
Total	100	100	100
Research using plants			
A lot	52	55	50
Somewhat	27	25	29
A little	14	15	15
Not at all	1	1	2
Don't know	6	4	5
Total	100	100	100
Research using animals			
A lot	34	33	38
Somewhat	33	35	38
A little	24	24	25
Not at all	4	4	4
Don't know	5	4	6
Total	100	100	100
Medical research			
A lot	43	45	40
Somewhat	29	29	27
A little	17	17	19
Not at all	3	3	4
Don't know	8	5	9
Total	100	100	100

Note: Components may not always add to 100% exactly because of rounding.
[1]Note: Excludes respondents who had no awareness of genetic modification or genetic engineering (Q1a/Q1b, Q2, Q2a).

- The "GM important" group was slightly more likely to believe genetic modification was already being used in New Zealand than the "GM unimportant" group.

  > Areas where they were more likely to believe genetic modification was being used in New Zealand were pest control (68% of the "GM important" group claimed "a lot" or "somewhat", compared with 62% of the "GM unimportant" group), medicines and vaccines (66% of the "GM important" group, compared with 59% of the "GM unimportant" group), and medical research (74% of the "GM important" group, compared with 67% of the "GM unimportant" group).

Are there more advantages or more disadvantages?

In order to establish whether respondents believed there were more advantages or more disadvantages to using genetic modification in each of the areas or categories referred to earlier (namely, commercial crops, farm animals, pest control, processed foods, medicines and vaccines, research using plants, research using animals, and medical research), they were asked the following question:

> Q5: "I'd like you to tell me whether you think there are more advantages or more disadvantages to using genetic modification in these areas".

The following conclusions can be drawn:

- First, it is significant that most respondents were able to give a clear-cut answer (ie, "more advantages" or "more disadvantages"). In other words, few used the option of claiming there were "both advantages and disadvantages", they "didn't know", or it "depended".

- Second, the areas or categories fell into two broad groups:

  > Over one-half of respondents believed that there were "**more advantages**" in using genetic modification in four particular areas: namely, medicines and vaccines (71%), medical research (71%), pest control (58%) and research using plants (56%).

  > In contrast, significant proportions also claimed there were "**more disadvantages**" in using genetic modification in four other areas: namely, processed foods (69%), farm animals (59%), research using animals (53%) and (marginally) commercial crops (49%).

- The "GM important" group was more likely to see "more advantages" in the use of genetic modification as opposed to disadvantages:

  > With the exception of farm animals and processed foods, more than 50% of the "GM important" group believed genetic modification had

"more advantages" in all areas. They especially believed it had "more advantages" when used in medical research (87%), medicines and vaccines (85%), research using plants (72%) and pest control (71%).

In contrast, only two areas were regarded as having "more advantages" by at least half of the "GM unimportant" group. These were medical research (51%) and medicines and vaccines (51%), although 40% of this group also claimed pest control had "more advantages" rather than "more disadvantages".

However, it is interesting to note that over half of both groups (58% of the "GM important" group and 86% of the "GM unimportant" group) believed there were "more disadvantages" in the use of genetic modification in processed foods than "more advantages".

Table 6.19 shows the data on advantages and disadvantages.

Table 6.19   Are there more advantages or more disadvantages to the use of genetic modification? (by "importance to New Zealand's future")

Q5   I'd like you to tell me whether you think there are more advantages or more disadvantages to using genetic modification in these areas.

	Sub sample n = 1093[1] %	Sub sample GM important n = 555[1] %	Sub sample GM unimportant n = 404[1] %
Commercial crops			
More advantages	42	57	21
More disadvantages	49	34	74
Both	3	4	2
Depends	1	2	1
Don't know	5	4	2
Total	100	100	100

Note: Components may not always add to 100% exactly because of rounding.
[1]Note: Excludes respondents who had no awareness of genetic modification or genetic engineering (Q1a/Q1b, Q2, Q2a).

Table 6.19   continued

	Sub sample n = 1093[1] %	Sub sample GM important n = 555[1] %	Sub sample GM unimportant n = 404[1] %
Farm animals			
More advantages	30	45	13
More disadvantages	59	46	78
Both	4	3	3
Depends	2	2	2
Don't know	5	4	4
Total	100	100	100
Pest control			
More advantages	58	71	40
More disadvantages	33	21	53
Both	3	3	4
Depends	1	1	1
Don't know	4	4	2
Total	100	100	100
Processed foods			
More advantages	22	33	9
More disadvantages	69	58	86
Both	3	3	2
Depends	1	1	1
Don't know	5	5	1
Total	100	100	100
Medicines and vaccines			
More advantages	71	85	51
More disadvantages	20	9	39
Both	2	1	2

Note: Components may not always add to 100% exactly because of rounding.
[1]Note: Excludes respondents who had no awareness of genetic modification or genetic engineering (Q1a/Q1b, Q2, Q2a).

Table 6.19 continued

	Sub sample n = 1093[1] %	Sub sample GM important n = 555[1] %	Sub sample GM unimportant n = 404[1] %
Medicines and vaccines *continued*			
Depends	2	1	2
Don't know	5	3	6
Total	100	100	100
Research using plants			
More advantages	56	72	37
More disadvantages	35	21	58
Both	3	3	1
Depends	2	1	1
Don't know	5	3	3
Total	100	100	100
Research using animals			
More advantages	37	52	19
More disadvantages	53	39	73
Both	3	3	3
Depends	2	2	2
Don't know	5	4	3
Total	100	100	100
Medical research			
More advantages	71	87	51
More disadvantages	19	8	39
Both	3	2	4
Depends	1	1	1
Don't know	4	2	5
Total	100	100	100

Note: Components may not always add to 100% exactly because of rounding.
[1]Note: Excludes respondents who had no awareness of genetic modification or genetic engineering (Q1a/Q1b, Q2, Q2a).

Do you approve or disapprove of genetic modification?

In order to establish respondents' approval or disapproval of genetic modification in relation to specific areas of its use (namely, commercial crops, farm animals, pest control, processed foods, medicines and vaccines, research using plants, research using animals, and medical research), they were asked the following question (see Table 6.20):

> Q6: "Would you say that you approve or disapprove of using genetic modification in these areas?"

Those respondents who listed areas of which they approved, were asked the following question (see Table 6.21):

> Q7: "And thinking about these areas again, which **one** of these areas do you approve of most, with regard to the use of genetic modification?"

They were then asked to explain their reasons for approving of genetic modification in this one area. Results are presented in this report on key findings for the two areas most approved of (see Tables 6.22–6.23):

> Q7a: "You've said you most approve of … with regard to the use of genetic modification. What are your reasons for saying this?"

Those respondents who listed areas of which they disapproved, were asked the following question (see Table 6.24):

> Q8: "And thinking about these areas again, which **one** of these areas do you approve of least, with regard to the use of genetic modification?"

They were then asked to explain their reasons for disapproving of genetic modification in this one area. Results are presented in this report on key findings for the two areas least approved of (see Tables 6.25–6.26):

> Q8a: "You've said you least approve of … with regard to the use of genetic modification. What are your reasons for saying this?"

The following conclusions can be drawn:

- The results for approval/disapproval reflect the results for the earlier advantages/disadvantages question. Four areas were approved ("just approve"/"strongly approve") of by the majority of respondents: namely, medical research (65%), medicines and vaccines (64%), pest control (54%) and research using plants (52%). Reflecting these results, medical research (29%) and medicines and vaccines (22%) were the two most approved of areas. Note, however, that 25% of respondents claimed there was no area in which they approved of genetic modification.

- In contrast, four other areas were disapproved ("disapproved"/"strongly disapproved") of by the majority of respondents: processed foods (73%),

Table 6.20 Do you approve or disapprove of the use of genetic modification? (by "importance to New Zealand's future")

Q6   Would you say that you approve or disapprove of using genetic modification in these areas?

Is that strongly approve/disapprove or just approve/disapprove?

	Sub sample n = 1093[1] %	Sub sample GM important n = 555[1] %	Sub sample GM unimportant n = 404[1] %
Commercial crops			
Strongly approve	5	8	1
Just approve	31	47	11
Neither approve nor disapprove	4	4	3
Disapprove	34	28	41
Strongly disapprove	24	11	44
Don't know	2	2	1
Total	100	100	100
Farm animals			
Strongly approve	3	5	0
Just approve	22	34	6
Neither approve nor disapprove	4	4	2
Disapprove	39	38	39
Strongly disapprove	31	17	52
Don't know	2	1	1
Total	100	100	100
Pest control			
Strongly approve	10	15	5
Just approve	44	57	24

Note: Components may not always add to 100% exactly because of rounding.
[1]Note: Excludes respondents who had no awareness of genetic modification or genetic engineering (Q1a/Q1b, Q2, Q2a).

Table 6.20   continued

	Sub sample n = 1093[1] %	Sub sample GM important n = 555[1] %	Sub sample GM unimportant n = 404[1] %
Pest control *continued*			
Neither approve nor disapprove	4	4	4
Disapprove	24	17	34
Strongly disapprove	15	5	32
Don't know	2	1	1
Total	100	100	100
Processed foods			
Strongly approve	2	4	0
Just approve	19	31	6
Neither approve nor disapprove	4	4	2
Disapprove	39	39	36
Strongly disapprove	34	20	56
Don't know	2	2	1
Total	100	100	100
Medicines and vaccines			
Strongly approve	16	24	7
Just approve	48	59	31
Neither approve nor disapprove	4	3	6
Disapprove	15	9	24
Strongly disapprove	13	4	29
Don't know	3	1	3
Total	100	100	100
Research using plants			
Strongly approve	8	13	3
Just approve	44	60	23
Neither approve nor disapprove	4	3	4

Note: Components may not always add to 100% exactly because of rounding.
[1]Note: Excludes respondents who had no awareness of genetic modification or genetic engineering (Q1a/Q1b, Q2, Q2a).

Table 6.20   continued

	Sub sample n = 1093[1] %	Sub sample GM important n = 555[1] %	Sub sample GM unimportant n = 404[1] %
Research using plants *continued*			
Disapprove	25	17	36
Strongly disapprove	16	6	34
Don't know	2	1	1
Total	100	100	100
Research using animals			
Strongly approve	4	7	0
Just approve	25	38	9
Neither approve nor disapprove	4	4	2
Disapprove	38	34	39
Strongly disapprove	28	15	50
Don't know	2	2	0
Total	100	100	100
Medical research			
Strongly approve	16	23	7
Just approve	49	61	32
Neither approve nor disapprove	5	3	6
Disapprove	14	7	23
Strongly disapprove	14	4	30
Don't know	3	1	2
Total	100	100	100

Note: Components may not always add to 100% exactly because of rounding.
[1]Note: Excludes respondents who had no awareness of genetic modification or genetic engineering (Q1a/Q1b, Q2, Q2a).

Table 6.21 Which one area is most approved of? (by "importance to New Zealand's future")

Q7   And thinking about these areas again, which **one** of these areas do you approve of most, with regard to the use of genetic modification?

	Sub sample n = 1093[1] %	Sub sample GM important n = 555[1] %	Sub sample GM unimportant n = 404[1] %
Commercial crops	4	6	2
Farm animals	1	1	1
Pest control	10	10	9
Processed foods	1	2	0
Medicines and vaccines	**22**	**26**	**16**
Research using plants	5	5	6
Research using animals	1	2	1
Medical research	**29**	**38**	**17**
Approve of none	25	9	48
Don't know	1	1	0
Total	100	100	100

Note: Components may not always add to 100% exactly because of rounding.
[1]Note: Excludes respondents who had no awareness of genetic modification or genetic engineering (Q1a/Q1b, Q2, Q2a).

Table 6.22 Reasons for approving of genetic modification in medicines and vaccines

Q7a   You've said you most approve of medicines and vaccines with regard to the use of genetic modification/genetic engineering/biotechnology. What are your reasons for saying this?

	Sub sample n = 247[1] %	Sub sample GM important n = 147[1] %	Sub sample GM unimportant n =67[1] %
General benefits/advantages	40	40	41
We have to find new cures/cures for incurable diseases	20	23	20
Cures are needed for specific disease eg cancer/I am sick	15	14	16
To improve quality of life/extend life	6	7	2
Vaccines/cures stop people getting sick/prevent disease	4	5	2
More advantages in this than in other areas mentioned	2	2	3
No answer given/answer not specified	13	9	16
Total	100	100	100

Note: Components may not always add to 100% exactly because of rounding.
[1]Note: Excludes respondents who had no awareness of genetic modification or genetic engineering (Q1a/Q1b, Q2, Q2a) and only includes respondents who selected medicines and vaccines as the area they most approved of.

Table 6.23 Reasons for approving of genetic modification in medical research

Q7a   You've said you most approve of medical research with regard to the use of genetic modification/genetic engineering/biotechnology. What are your reasons for saying this?

	Sub sample n = 317[1] %	Sub sample GM important n = 210[1] %	Sub sample GM unimportant n = 70[1] %
General benefits/advantages	47	50	39
We have to find new cures/cures for incurable diseases	17	15	22
Cures are needed for specific disease, eg, cancer/I am sick	13	14	9
To improve quality of life/extend life	6	7	2
Medical research stops people getting sick/prevents disease	1	2	0
More advantages in this than in other areas mentioned	2	3	0
No answer given/answer not specified	13	10	28
Total	100	100	100

Note: Components may not always add to 100% exactly because of rounding.
[1]Note: Excludes respondents who had no awareness of genetic modification or genetic engineering (Q1a/Q1b, Q2, Q2a) and only includes respondents who selected medical research as the area of which they most approved.

Table 6.24 Which one area is least approved of (by "importance to New Zealand's future")

Q8   And thinking about these areas again, which **one** of these areas do you approve of least, with regard to the use of genetic modification?

	Sub sample n = 1093[1] %	Sub sample GM important n = 555[1] %	Sub sample GM unimportant n = 404[1] %
Commercial crops	10	6	15
Farm animals	15	16	15
Pest control	3	3	3
Processed foods	**26**	**25**	**28**
Medicines and vaccines	2	1	3
Research using plants	2	1	3
Research using animals	**16**	**16**	**13**
Medical research	4	3	7
Disapprove of none	17	27	3
Don't know	1	1	1
Disapprove of all/not able to specify	4	2	8
Total	100	100	100

Note: Components may not always add to 100% exactly because of rounding.
[1]Note: Excludes respondents who had no awareness of genetic modification or genetic engineering (Q1a/Q1b, Q2, Q2a).

Table 6.25 Reasons for disapproving of genetic modification in research using animals

Q8a   You've said that you least approve of research using animals with regard to genetic modification/genetic engineering/biotechnology. What are your reasons for saying this?

	Sub sample n = 174[1] %	Sub sample GM important n =88[1] %	Sub sample GM unimportant n = 56[1] %
Cruelty to animals/ it's inhumane/ need to protect animals	54	55	54
Research on animals will lead to research on humans/too dangerous	12	14	10
General disapproval	9	9	14
Want things to be natural/it's messing with nature	6	5	5
Unknown side effects	3	3	2
No answer given/answer not specified	16	15	16
Total	100	100	100

Note: Components may not always add to 100% exactly because of rounding.
[1]Note: Excludes respondents who had no awareness of genetic modification or genetic engineering (Q1a/Q1b, Q2, Q2a) and only includes respondents who selected research on animals as the area of which they most disapproved.

Table 6.26   Reasons for disapproving of genetic modification in processed foods

Q8a   You've said that you least approve of processed foods with regard to genetic modification/genetic engineering/biotechnology. What are your reasons for saying this?

	Sub sample n = 286[1] %	Sub sample GM important n = 140[1] %	Sub sample GM unimportant n = 112[1] %
Unknown side effects/don't know what's in it	23	27	23
Want things to be natural	21	14	24
Poses too many risks to humans/flow-on effect to humans/too dangerous	13	10	16
General disapproval	10	9	12
Not enough research done/not enough info/too much commercial involvement	9	9	11
No answer given/answer not specified	23	31	14
Total	100	100	100

Note: Components may not always add to 100% exactly because of rounding.
[1]Note: Excludes respondents who had no awareness of genetic modification or genetic engineering (Q1a/Q1b, Q2, Q2a) and only includes respondents who selected processed food as the area of which they most disapproved.

farm animals (70%), research using animals (66%), and commercial crops (58%). Reflecting these results, processed foods (26%) was the area most disapproved of. However, 17% claimed there was no area in relation to which they disapproved of genetic modification.

- For both the "GM important" and "GM unimportant" groups, approval of genetic modification was highest for medical research (84% of the "GM important" group and 45% the "GM unimportant" group) and medicines and vaccines (83% of the "GM important" group and 45% of the "GM unimportant" group). With the exception of research using plants (32%), fewer than 20% of the "GM unimportant" group approved of any of the other areas.

  > Processed foods was the area most disapproved of by both groups (59% of the "GM important" group and 86% of the "GM unimportant" group) and farm animals (55% of the "GM important" group and 85% of the "GM unimportant" group).

  > Similarly, medical research (38% of the "GM important" group and 20% of the "GM unimportant" group) and medicines and vaccines (26% of the "GM important" group and 18% of the "GM unimportant" group) were the two areas most approved of by both groups. The "GM unimportant" group was significantly more likely to claim they "approve of none" (42% of the "GM unimportant" group gave this answer, compared with 9% of the "GM important" group).

  > When invited to identify the one area or category they most disapproved of, there were fewer differences between the two groups than when invited to identify an area they approved of. Both groups most disapproved of the use of genetic modification in processed foods (25% of the "GM important" group, compared with 27% of the "GM unimportant" group), farm animals (16% of the "GM important" group, compared with 15% of the "GM unimportant" group) and research using animals (16% of the "GM important" group, compared with 15% of the "GM unimportant" group). Reflecting the differences in approval noted above between the two groups, the "GM important" group was significantly more likely to claim they disapproved of none (27%, compared with 6% of the "GM unimportant" group).

- Whilst many respondents believed there were advantages to genetic modification in medical research and in medicines and vaccines, when asked

to stipulate what these advantages were, at least 40% offered no more than a general response relating to the general wellbeing of the human race:

> "… to maintain the health of our future and to help preserve mankind"

- However, some (approximately 20%) mentioned that the use of genetic modification in these two medicinal areas was particularly important in the development of remedies/cures for diseases, and a further 15% named specific health complaints/diseases (eg, cancer) that would benefit from this type of research:

> "Anything that can help with the control of diseases is good."

> "There are a lot of diseases that could be cured by changing the genes that cause the problem."

> "I have a cold at the moment and no one has a cure for it."

> "Hopefully it's going to help cure things like AIDS and cancer."

- When respondents were asked to specify the reasons for their disapproval of genetic modification in relation to research using animals, their biggest concern related to the potential harm that may be inflicted on the animals during the course of the research:

> "I think that God's creatures are being abused. I don't think the general public knows half of what these animals are put through."

> "I don't like the idea of lab rats and monkeys being prodded and poked and blown up. That sort of thing."

- Some respondents were also concerned that this type of research (with animals) might lead to similar work being carried out on humans (12%):

> "If they start to alter animals, they will end up altering man."

- With regard to their concerns about genetic modification in relation to processed foods, respondents were basically wary of eating something without knowing exactly what it contained. Twenty one percent (21%) claimed they preferred their food to be "natural", and 23% objected to "unknown" ingredients that, in turn, could lead to unknown side effects:

> "I want to know what I am eating."

> "Something can go wrong and you don't want to eat a mistake."

> "We don't know what they are putting in and how it is going to affect us."

What genetic modification has to offer New Zealand

In order to establish what respondents believed genetic modification had to offer New Zealand, they were asked the following question:

> Q9: "Overall then, how much do you feel genetic modification has to offer New Zealand?"

The following conclusions can be drawn (see Table 6.27):

* Just over one half of respondents (54%) claimed that genetic modification had "a lot" (19%) or "some" (35%) to offer New Zealand. In contrast, 42% claimed it had "a little" (26%) or "nothing" (16%).

Table 6.27 How much genetic modification has to offer New Zealand (by "importance to New Zealand's future")

Q9   Overall then, how much do you feel genetic modification has to offer New Zealand?

	Sub sample n = 1093[1] %	Sub sample GM important n = 555[1] %	Sub sample GM unimportant n = 404[1] %
A lot	19	33	2
Some	35	44	19
A little	26	17	37
Nothing at all	16	3	38
Depends, some areas only	2	1	3
Don't know	1	1	0
Don't know enough to comment	1	1	2
Total	100	100	100

Note: Components may not always add to 100% exactly because of rounding.
[1]Note: Excludes respondents who had no awareness of genetic modification or genetic engineering (Q1a/Q1b, Q2, Q2a).

- Not surprisingly, the "GM important" group was more likely to believe genetic modification had something to offer New Zealand.

  > Over three-quarters (77%) of the "GM important" group believed genetic modification had "a lot" (33%) or "some" (44%) to offer New Zealand, compared with just 21% of the "GM unimportant" group. In fact, more than one-third (38%) of the "GM unimportant" group believed that genetic modification had "nothing at all" to offer New Zealand (compared with 3% of the "GM important" group).

Knowledge and personal importance of genetic modification

In addition to asking respondents about the importance of genetic modification to New Zealand, they were also asked about its personal importance. Note that to help put this into perspective, they were first asked to comment on how well informed they believed they were about the subject:

> Q10: "How informed do you believe you are at present about genetic modification?"

> Q11: "And is genetic modification an issue that is of importance to you personally?"

The following conclusions can be drawn (see Tables 6.28–6.29):

- Most respondents (57%) claimed to be informed about genetic modification to some extent, although only 7% claimed to be "very informed" as opposed to "just informed" (50%). This compares with just over one-third (36%) claiming to be uninformed.

- Both the "GM important" group and the "GM unimportant" group claimed to be informed and uninformed to more or less the same extent.

  > Sixty-one percent (61%) of the "GM important" group claimed they were "just informed" or "very informed" about genetic modification, compared with 58% of the "GM unimportant" group. However, note that only 8% of each of the "GM important" group and the "GM unimportant" group claimed to be "very informed".

- Two-thirds of respondents (67%) claimed that genetic modification was either "very important" (28%) or "just important" (39%) to them personally. This contrasts with the 28% who claimed it was unimportant to some degree or other.

- Interestingly, the "GM unimportant" group was more likely to claim that genetic modification was an issue that was important to them personally.

Table 6.28   Level of personal informedness about genetic modification (by "importance to New Zealand's future")

Q10   How informed do you believe you are at present about genetic modification?

	Sub sample n = 1093[1] %	Sub sample GM important n = 555[1] %	Sub sample GM unimportant n = 404[1] %
Very informed	7	8	8
Just informed	50	53	50
Neither	6	6	5
Just uninformed	23	23	24
Very uninformed	13	11	12
Don't know	1	0	1
Total	100	100	100

Note: Components may not always add to 100% exactly because of rounding.
[1]Note: Excludes respondents who had no awareness of genetic modification or genetic engineering (Q1a/Q1b, Q2, Q2a).

This may be because, as a group, they hold much stronger (negative) convictions about genetic modification.

Seventy-five percent (75%) of this group claimed genetic modification was important to them personally (37% "very important", 38% "just important") compared with 63% of the "GM important" group (23% reported it was "very important, 40% reported it was "just important"). Note that 32% of the "GM important" group and 22% of the "GM unimportant" group claimed genetic modification was unimportant to them personally.

**Table 6.29 Personal importance of genetic modification
(by "importance to New Zealand's future")**

Q11   And is genetic modification an issue that is of importance to you personally?

	Sub sample n = 1093[1] %	Sub sample GM important n = 555[1] %	Sub sample GM unimportant n = 404[1] %
Very important	28	23	37
Just important	39	40	38
Neither	5	5	3
Just unimportant	25	30	18
Very unimportant	3	2	4
Don't know	0	0	0
Total	100	100	100

Note: Components may not always add to 100% exactly because of rounding.
[1]Note: Excludes respondents who had no awareness of genetic modification or genetic engineering (Q1a/Q1b, Q2, Q2a).

Demographic differences

As noted earlier, there are few demographic differences between the "GM important" and the "GM unimportant" groups. However, this section comments on the results in terms of the demographic descriptors used to classify respondents.

Supporting data for the comments on demographic differences are available in the appendix to the Public Opinion Survey: *Public Opinion Survey: Tabular results*, available on the Commission website. This section includes tabulated data for key findings by gender and age, which were the two demographic descriptors with the greatest differences between the "GM important" and "GM unimportant" groups. Tables 1–3 in the survey appendix summarise key findings by educational status,

Tables 28–30 by scientific background, Tables 55–57 by occupational status, Tables 82–83 by income and Tables 108–110 by region and household composition.

Gender

In general, females were more likely than males to claim genetic modification is being practised in New Zealand, that there were "more disadvantages" and to be more likely to "disapprove" of genetic modification (see Table 6.30). For example, 75% claimed genetic modification was being practised in relation to processed foods (58% of males), 73% claimed there were "more disadvantages" in this area (63% of males), and 78% "disapproved" of genetic modification in relation to processed foods (65% of males).

Not surprisingly, females were less likely to claim genetic modification had something to offer New Zealand (47%, compared with 64% of males), or that it was important to New Zealand's future (44%, compared with 61%). While fewer claimed to be informed about the subject (54%, compared with 62% of males), more claimed genetic modification was of importance to them personally (71%, compared with 60% of males).

Age

The survey results have been analysed by six age groups as follows; those 29 and under, 30–39, 40–49, 50–59 and 60 or more.

Compared with the total sample (ie, all respondents), respondents in the youngest age group (ie, 29 and under) were more likely to claim that genetic modification had something to offer New Zealand (see Table 6.30). They were also more likely to claim that genetic modification is being practised in New Zealand, and to claim genetic modification had "more advantages" and to approve of it in relation to the eight areas or categories surveyed.

This age group did not, however, claim to be the most informed about genetic modification or to most frequently claim that genetic modification was of personal importance to them.

Ethnicity

The survey results have been analysed by those respondents who identified as Maori and those who did not (ie, non-Maori).

As a general observation, Maori were more likely than non-Maori to claim that genetic modification was being practised in New Zealand.

However, Maori were as likely as non-Maori to claim there were "more advantages"/"more disadvantages" with genetic modification, and to "approve"/"disapprove" of genetic modification in the eight areas or categories focused on

Table 6.30 Summary — Key results by gender and age

	Total sample n = 1153[1] %	Total Male n = 475[1] %	Total Female n = 678[1] %	Total <29 n = 250[1] %	Total 30–39 n = 242[1] %	Total 40–49 n = 236[1] %	Total 50–59 n = 173[1] %	Total 60+ n = 252[1] %
GM first mentioned as an issue of importance (Q1a)	1	1	1	1	2	0	1	1
GM mentioned at all (Q1a/Q1b)	2	3	2	4	3	1	1	2
Awareness of term GM (Q2)	89	90	88	87	91	93	89	87
GM already used in NZ (Q4)								
Commercial crops (A lot/somewhat)	68	62	73	68	72	71	74	59
Farm animals	43	33	48	40	45	45	45	37
Pest control	65	60	67	63	66	71	68	56
Processed foods	68	58	75	69	69	75	67	60
Medicines and vaccines	62	63	61	72	69	70	57	46
Research using plants	79	76	81	80	84	83	81	67
Research using animals	67	61	71	67	75	72	66	55
Medical research	72	78	74	76	75	75	65	65

[1] Note: not all results are based on the total sample.

Table 6.30 continued

	Total sample n = 1153[1] %	Total Male n = 475[1] %	Total Female n = 678[1] %	Total <29 n = 250[1] %	Total 30–39 n = 242[1] %	Total 40–49 n = 236[1] %	Total 50–59 n = 173[1] %	Total 60+ n = 252[1] %
GM has more advantages (more disadvantages) (Q5)								
Commercial crops	42(49)	50(42)	36(54)	52(44)	36(55)	42(47)	40(52)	39(47)
Farm animals	30(59)	41(49)	22(67)	36(59)	27(66)	26(59)	29(60)	33(53)
Pest control	58(33)	65(28)	53(37)	61(32)	59(36)	54(34)	52(40)	63(25)
Processed foods	22(69)	27(63)	18(73)	26(69)	17(76)	19(70)	25(67)	22(63)
Medicines and vaccines	71(20)	75(16)	68(23)	80(15)	72(23)	72(20)	67(23)	63(21)
Research using plants	56(35)	65(28)	49(40)	67(28)	48(44)	56(34)	49(41)	57(30)
Research using animals	37(53)	47(45)	29(59)	39(56)	34(59)	35(50)	38(54)	38(46)
Medical research	71(20)	77(16)	68(22)	81(13)	68(24)	70(19)	68(23)	70(19)
Approve (disapprove) of GM (Q6)								
Commercial crops	36(58)	46(59)	28(64)	45(49)	30(63)	34(61)	32(61)	37(55)
Farm animals	25(70)	34(61)	17(76)	30(67)	18(76)	21(71)	26(72)	29(65)
Pest control	54(39)	62(33)	48(45)	60(35)	51(44)	51(42)	49(43)	58(36)
Processed foods	21(73)	29(65)	16(78)	25(70)	17(75)	18(77)	23(70)	24(69)
Medicines and vaccines	64(28)	74(21)	59(33)	75(21)	61(31)	64(28)	60(31)	64(28)
Research using plants	52(41)	59(36)	48(45)	65(31)	48(46)	52(42)	48(46)	51(41)
Research using animals	29(66)	41(55)	19(74)	30(65)	24(70)	27(67)	32(64)	31(62)
Medical research	65(28)	77(20)	58(34)	75(21)	62(31)	54(31)	60(30)	63(27)

[1] Note: not all results are based on the total sample.

Table 6.30 continued

	Total sample n = 1153[1] %	Total Male n = 475[1] %	Total Female n = 678[1] %	Total <29 n = 250[1] %	Total 30–39 n = 242[1] %	Total 40–49 n = 236[1] %	Total 50–59 n = 173[1] %	Total 60+ n = 252[1] %
Area most approve of for GM (Q7)								
Commercial crops	4	6	3	3	3	3	3	8
Farm animals	1	0	1	2	0	0	0	1
Pest control	10	10	10	7	9	10	13	12
Processed foods	1	2	0	1	0	1	2	1
Medicines and vaccines	22	24	21	31	26	24	16	15
Research using plants	5	3	6	4	8	6	4	4
Research using animals	1	2	1	1	1	0	1	3
Medical research	29	32	27	35	24	29	29	30
Approve of none	25	19	30	17	27	26	31	25
Don't know	1	2	1	1	1	1	2	3
Area least approve of for GM (Q8)								
Commercial crops	9	10	9	6	11	9	11	10
Farm animals	15	16	15	18	21	16	12	10
Pest control	3	3	2	5	2	3	2	2
Processed foods	26	26	27	24	27	26	24	30

[1] Note: not all results are based on the total sample.

Table 6.30   continued

	Total sample n = 1153[1] %	Total Male n = 475[1] %	Total Female n = 678[1] %	Total <29 n = 250[1] %	Total 30–39 n = 242[1] %	Total 40–49 n = 236[1] %	Total 50–59 n = 173[1] %	Total 60+ n = 252[1] %
Area **least** approve of for GM (Q8) continued								
Medicines and vaccines	2	1	3	2	2	1	4	1
Research using plants	2	1	2	2	1	2	4	1
Research using animals	16	12	18	23	15	15	11	13
Medical research	44	2	6	4	4	7	3	4
Disapprove of none	17	24	12	12	14	15	20	23
Don't know	1	0	2	1	0	0	2	3
GM has a lot/some to offer NZ (Q9)	54	64	47	65	50	51	51	51
GM very important/just important to NZ's future (Q12)	51	61	44	64	43	51	48	50
Personally very informed/just informed about GM (Q10)	57	62	54	52	57	66	62	52
GM very important/just important to me personally (Q11)	67	60	71	57	74	73	69	61

[1] Note: not all results are based on the total sample.

by the survey. For example, the same proportion of Maori and non-Maori (71%) claimed there were "more advantages" than "more disadvantages" with genetic modification in relation to medicines and vaccines. Almost the same proportion of Maori (71%) and non-Maori (68%) claimed there were "more disadvantages" than "more advantages" with genetic modification in relation to processed foods.

Similar proportions also believed genetic modification had something to offer New Zealand (52% of Maori, compared with 54% of non-Maori), although a slightly higher proportion of non-Maori (51%) than Maori (46%) claimed it was of importance to New Zealand's future, and a slightly higher proportion of non-Maori (68%) than Maori (61%) claimed genetic modification was of importance to them personally.

Educational status

Respondents with some tertiary qualifications claimed to be relatively more informed about genetic modification (64%, compared with 39% for respondents with no school qualifications), were more likely to claim it was of personal importance to them (74%, compared with 52% for respondents with no school qualifications), were more likely to claim it had something to offer New Zealand (58%, compared with 52% for respondents with no school qualifications), and were more likely to claim genetic modification was of importance to New Zealand's future (55%, compared with 49% for respondents with no school qualifications).

Nevertheless, those with no school qualifications were more likely to claim genetic modification is being practised in New Zealand, and to claim that there are "more advantages" than "more disadvantages". For example, 64% of respondents with no school qualifications claimed there were "more advantages" with genetic modification in relation to pest control compared with 53% of those with tertiary qualifications.

Occupational status

The survey results have been analysed by those respondents who described themselves as having a Professional/Managerial occupation, those involved in Sales and Support and those with a Manual/Semi-skilled occupation.

As a general observation, Professionals/Managers were more likely than respondents in the other two occupational groups to claim genetic modification is currently being practised in New Zealand. They were also the group that more frequently claimed to be informed about the subject.

Against this background, they were less likely to claim there were "more advantages" than "disadvantages" in certain areas, and to generally "approve" of

genetic modification. For example, 52% of Professionals/Managers claimed there were "more advantages" with genetic modification in relation to pest control compared with 62% of those with a Manual/Semi-skilled occupation. In turn, only 49% "approved" of genetic modification in this area compared with 58% of those with a Manual/Semi-skilled occupation.

Nevertheless, a slightly higher proportion of Professionals/Managers claimed genetic modification was important to New Zealand's future (55%) compared with those with a Manual/Semi-skilled occupation (50%). And more (78%) claimed that genetic modification was of importance to them personally, compared with 60% of those respondents with a Manual/Semi-skilled occupation.

Scientific background

As a general observation, respondents who claimed they had some type of scientific background were more likely to claim that there were "more advantages" than "more disadvantages" with genetic modification in relation to a number of so-called "marginal" areas than those respondents without. This was particularly the case in terms of farm animals (37%, compared with 29% respectively), research using plants (61%, compared with 55%) and research using animals (43%, compared with 36%). This, in turn, was reflected in the approval/disapproval results.

Nevertheless, while more frequently claiming to be informed (74%, compared with 54%) and that genetic modification was personally of importance to them (74%, compared with 66%), respondents with a scientific background were not necessarily more likely than those without such a background to claim that genetic modification had something to offer New Zealand or that it was of importance to New Zealand's future.

Income

Reflecting the occupational results outlined above, respondents with the highest incomes ($60,000 or more per annum) were more likely than other income groups to claim there were "more advantages" than "more disadvantages" with genetic modification, to approve of genetic modification, to claim they were more informed about it as a subject, to claim that it was personally of importance to them, and to claim it had something to offer New Zealand.

However, this does not extend to the importance they placed on genetic modification as far as its importance to New Zealand's future is concerned. In fact, they were just as likely as the lowest income group (Under $20,000 per annum) to claim it was of importance to New Zealand's future (54%, compared with 52% respectively).

Region

The survey results have been analysed by three broad geographic regions; namely, North North Island (Taupo north), South North Island (Taupo south) and South Island.

There are few regional differences of significance.

Household composition

The survey results have been analysed by those respondents with pre- and school-aged children and those without.

Aside from the fact that respondents with children were more likely to claim that genetic modification is currently practised in New Zealand, there are no other significantly different results.