Final Report

Prepared by

Colmar Brunton Social Research

PO Box 2212 Canberra ACT 2601

Tel: 02 6249 8566 Fax. 02 6249 8588

Contact : David Bruce

Raw Milk

Consumer behaviour and attitudes

prepared for

Food Standards Australia

New Zealand

Our ref: 70830

Your ref: RFQ2006/07-14

March 2009

Table of Contents

1. Executive Summary 1

1.1 Introduction 1

1.2 Key findings 2

1.3 Conclusions 6

2. Introduction 8

3. Objectives 9

4. Methodology 10

5. Findings 15

5.1 Motivations and First Experiences 15

Triggers to consuming raw milk 15

Catalysts 16

Raw milk consumer 'segments' 16

Other motivations to consume raw milk 18

Other barriers to consuming raw milk 19

5.2 Knowledge 21

The term "raw milk" 21

Information sources 21

Perceived benefits of raw milk 24

Attitudes towards pasteurisation 27

Perceived risks of raw milk 29

Knowledge of bacteria and risks associated with raw milk 32

Cow milk versus goat milk 33

5.3 Consumption, including purchasing and storage 34

Dual use of raw and pasteurised milk 34

Frequency of consumption 35

Method of consumption 35

Volume of consumption 36

Source of raw milk 37

Purchase frequency and volumes 39

Cost 41

If buying direct – knowledge of milk handling 42

Containers 42

Where raw milk is stored 43

How long raw milk should be stored 44

6. Appendix A: Discussion Guides 46

6.1 Original discussion guide 46

6.2 Revised discussion guide 52

1. EXECUTIVE SUMMARY

1.1 Introduction

Colmar Brunton Social Research (CBSR) was approached by Food Standards Australia New Zealand (FSANZ) to conduct exploratory qualitative research into consumer attitudes and practices around raw cow and goat milk.

The research was exploratory in nature, with the objectives being to explore:

Motivations driving the consumption of raw cow and goat milk, for example taste, health benefits, availability.

Knowledge and awareness of raw cow and goat milk consumption including knowledge/perceptions about risks to health and/or benefits, including sources of information.

Consumption behaviour including frequency of consumption, quantity of consumption, purpose, methods of storage and any treatment (eg scalding) prior to consumption.

An additional objective was to explore the **socio-demographic profile** of raw cow and goat milk consumers, including age, gender, race/ethnicity, health status, occupation (including identification of goat/dairy farmers), geographic location (eg. rural/urban). However, the qualitative nature of the study and the sample do not allow a definitive exploration of this objective.

The research involved a total of 39 40-60 minute in depth telephone interviews using a discussion guide developed by CBSR in collaboration with FSANZ. The research was conducted between June and November 2007.

The **sample** of participants for the research was primarily drawn from contacts provided by Real Milk Australia. The reader should consider this source of participants when interpreting the results of the study reported here, as it is possible (as in all qualitative research) that the participants may not be representative of all types of raw milk consumers in the community. All bar five of the participants in the study were either direct contacts from Real Milk Australia, or within two 'generations' of snowballed contacts from a Real Milk contact.

This report presents the findings of this research.

Definitions

'Raw milk' – means unpasteurised milk cow and goat milk. Where the term 'raw milk' is used it means both cow and goat milk – where a comment is made that relates only to one or the other of these types of milk, this will be specified. In this particular study all raw milk discussed was also un-homogenised (but in the wider context this is not necessarily the case).

'Pasteurised milk' – means the pasteurised milk typically consumed in Australia, and more or less without exception this refers to cow milk. In this study pasteurised milk was also assumed to be homogenised unless explicitly noted otherwise (again, this is not necessarily the case in the wider context).

'Commercially available raw milk' or 'commercial milks' – refers to raw milk products that are sold through retailers such as health and organic food stores as well as farmers or growers markets, and includes raw milks sold as cosmetic or pet milks.

'Producer' – refers to an individual or organisation that produces milk (ie: milks it directly from the animals). Can be an individual person up to a commercial dairy.

'Supplier' – refers to an outlet that supplies (including 'sells') a product, in this case a raw milk product. Suppliers *could* be producers, but the term is used to indicate a source of raw milk which is separated from the production (such as organic or health food shops, or farmer / grower markets) and where a consumer accessing raw milk through a supplier is one step removed from the production.

1.2 Key findings

Motivations

There are a number of **triggers** to the consumption of raw milk. These are:

- Obtaining information about raw milk;
- A family member obtaining information about raw milk;
- Being told about it by someone else, including being recommended by a health 'consultant' (to some extent this is a subset of the previous categories, but is a distinct enough situation due to the 'authority' or 'credibility' of the person providing this information or recommendation);
- A health problem – either as an adult or of an infant or child;
- A wider lifestyle change; and
- Becoming aware of a viable source of raw milk.

The likelihood of a trigger point actually resulting in an individual starting to consume raw milk appears to be increased by the presence of one or more **catalysts**. Observed catalysts were:

- Previous experience with raw milk, especially as a child.
- Living or working in rural areas where consuming raw milk is the norm, especially in the dairy industry.
- A pre-disposition to organic food and "healthy lifestyles".
- A pre-disposition to 'alternative' lifestyle and belief systems.

Four **segments** were observed amongst participants, based on their motivations to consume raw milk. The four segments were:

- **Opportunists**: typically people who live and/or work in rural areas, especially the dairying community, and for whom the primary motivation is convenience, low cost and easy availability.

- **Lifestylers:** the most emotionally committed segment, individuals who choose to consume organic and natural products (and often other compatible lifestyle choices). For this segment consumption of raw milk is part of a wider belief system, and is not done in isolation.
- **Nutrition seekers:** like the lifestyler segment, the nutrition seeker segment makes a conscious choice to consume raw milk. In this case, this choice is based on an acceptance of the perceived or promoted nutritional benefits of raw milk, often with a reference to technical or scientific[1] considerations.
- **The health concerned:** like the lifestyler and nutrition seeker segments, this segment makes a deliberate choice to consume raw milk (or in some cases, goat milk that happens to be raw) – the difference is that this segment is reactively responding to a health consideration rather than making a proactive choice.

These segments are not mutually exclusive. There are crossovers between them and any given individual can display characteristics of more than one segment, but in most individual participants a dominant segment was observed or could be inferred. There is insufficient data from this study alone to determine the relative size of these segments, or to exclude the possibility of other segments not included or not identifiable here.

Knowledge

The main sources of **information** about raw milk are word of mouth and personal experience and observation. A range of books and websites was referred to – the single information source most specifically referenced was the Weston A. Price Foundation, though this may reflect the origin of the sample used for the study as much as the breadth of information in the community. Common usage of terms such as 'the availability of nutrients', 'live food' and 'enzymes' suggest that a single source or language underlies many participants' knowledge.

Levels of knowledge varied considerably about raw milk. However, many participants (and particularly those from the segments other than the opportunists) were able to provide a considerable amount of information on subjects such as nutrient content, bacteria, and mechanisms for producing heath outcomes. In general, the knowledge presented by participants to support their opinions and behaviours was plausible (that is: it could be considered 'superficially fair or reasonable' by a layperson) and internally consistent.

Participants in the research saw several **benefits** of raw milk over pasteurised milk. Aside from cost and availability, in modern times where participants had an expectation of better hygiene and health of dairy animals there was a universal belief among participants that pasteurisation was detrimental to the nutritional value of the milk and unnecessary for protection of consumers.

The main benefits participants reported of raw milk were:

[1] No attempt has been made in this study to evaluate the quality of the science on which a conclusion about the value of raw milk is based. The primary point for this study is that the participant was making a decision based on their own personal interpretation of information they had obtained which referred or related to the nutritional composition of milk, rather than more general health or lifestyle benefits. The importance of this for the segmentation discussed here is to highlight the differing motivations and bases upon which a decision to consume the milk is founded.

- Nutritional content – all the original nutrients of the milk are present and in forms of which the body can make use.
- Health – many specific health benefits were considered likely, or observed, particularly to do with the digestive system and with respect to milk allergies or intolerances (including in infants).
- Knowing the source of the milk – this was a major benefit, and also an essential pre-requisite to consuming raw milk for many participants. They felt closer to the producer of the milk, knowing what the animals were fed, how they were looked after and other factors that were of interest and relevance to them.
- Taste – is a more sporadic benefit, as not all participants could tell the difference between raw and pasteurised cow milk, and not all liked the taste of goat milk. However, for some the taste was a major benefit and for many the taste was a factor in their continued use (and others disguised the taste by making shakes, smoothies and other derived products).
- Cost – many participants were able to obtain raw milk at a low cost. This was particularly a benefit for those who obtained raw goat milk from a producer rather than having to rely on buying commercially available raw milk from retail outlets. For those who had to purchase milk from suppliers (only cow milk consumers in this study), the higher cost of raw milk was more of a barrier to be overcome (especially when first purchasing it).

For consumers of raw cow milk, the benefits were vested very much in the unpasteurised nature of the milk. For consumers of raw goat milk the source of the benefits was less definitive – in particular some of the health benefits sought would be obtained from the consumption of *any* goat milk, and the choice of *raw* goat milk was more opportunistic.

Some participants felt that pasteurised milk was actively unhealthy, but more felt that people relying on its supposed nutritional value were not obtaining the benefits they expected. This was widely considered to be one of the factors underlying the dramatic increase in lifestyle diseases observed in western societies.

There was also a view amongst some participants (notably the nutrition seeking segment) that the process of homogenisation is a health risk, with the breakdown of fat into the milk resulting in smaller fat molecules that are absorbed into the vascular system of consumers.

Participants considered that so long as they knew the source of the raw milk, there were few **risks** associated with its consumption.

They considered that the milk itself was inherently a good, live, natural product that did not pose a threat unless contaminated by diseased animals or poor hygiene during milking. By knowing the source of the milk, they were comfortable that they avoided this risk and were left with a product they could trust and pasteurisation was therefore not necessary. None reported ever being sick as a result of raw milk, and most cited the good health of themselves and other consumers as proof of the quality and value of the milk.

Some participants noted that raw milk does not 'go off' in the same way that pasteurised milk does, but rather changes form and can continue to be consumed safely. Other participants felt that raw milk needed to be used more quickly than pasteurised milk.

Participants who milk their own animals were largely at pains to describe the care that they took to ensure hygiene was maintained. This included cleaning milking areas, washing udders and squeezing out the first drops of milk, using clean containers with lids where possible, the physical filtering of milk, and quick refrigeration.

Many participants were aware of information promoting the dangers of raw milk. They largely considered this ill-informed at best, and malicious scare-mongering at worst.

Consumption

Once they made the decision to obtain raw milk, all participants (by definition) had managed to do so. However, some did indicate that there had been a period of time when they had not been able to do so, and it is possible that access is a barrier to some prospective users. However, most participants indicated that it was relatively easy for them to get the milk once they decided they wanted to.

The main **sources** of raw cow milk in metropolitan areas were through organic/health food shops and through growers or farmers markets[2]. In regional areas these were less common sources, with direct supplies of fresh milk most commonly used by participants – milking their own animal, from commercial dairies and from small producers. All raw goat milk consumers in the study obtained their milk from their own animals or direct from a small producer.

The **volume** of milk obtained was in some cases limited by the producer or supplier. Participants who sourced the milk from shops and markets had to visit the outlet at particular times of the week to get milk, while those who obtain it directly had more flexibility in timing – but were not necessarily able to obtain unlimited supplies.

The **cost** of raw milk from shops and markets was considerably more per litre (around $3 to $5 per litre) than from a direct source (from $0.58 to $1.75 per litre). This means that metropolitan participants were paying more on average for their raw milk. The sample of raw goat milk consumers was limited, but from similar types of source goat milk appeared to be around twice the cost of cow milk.

Once the milk has been obtained, participants largely treat it in the same way they would treat any milk, or any other fresh produce.

Like pasteurised milk, raw milk which is bought commercially remains in the **containers** it is bought in. Those who get milk from direct sources universally re-used containers. Their preference was for glass bottles (usually reused fruit juice bottles) because they could be cleaned better and lasted longer. At a minimum, reused bottles were washed with the normal washing up - and many participants used a combination of cold water rinses, bottle brushes and hot soapy water to ensure clean bottles. Participants mostly felt that this was just good practice, and not something that was specifically to reduce risks associated with raw milk *per se*.

Amongst participants raw milk is universally **stored** in the fridge with other food products. If a particular location in the fridge is preferred, it is the coldest spot as this keeps the milk fresher longer, preserving its taste. They do not perceive any risk of contamination from raw milk to other products in the fridge.

Views vary on how long raw milk can be stored. Some feel it keeps for around 3-4 days, this group being mainly comprised of participants (especially goat milk consumers) who get their

[2] There was only one metropolitan goat milk drinker in the study, so we were not able to explore the sourcing of raw goat milk in metropolitan areas.

milk fresh from a producer. A second group feel it lasts for around a week, these appearing to be those with a higher tolerance for the changing taste of the milk as it ages and those drinking commercial milks. A third (smaller) group feel that the milk keeps indefinitely, and although it changes form and taste considerably, it is still safe to consume. This last group consisted only of cow milk consumers who mainly used commercially available raw milks and all use the milk to make other products, particularly as it ages.

Consumption of raw milk for many participants was no different from how they might consume pasteurised milk. However, there did seem to be a higher degree of use of raw milk to make derived dairy products than might be expected from typical pasteurised milk consumers. Many use it to make yogurts and cheeses, with fewer using it for kefir, butter and other specific types of cheese.

Most participants consume raw milk on a daily basis. Typical weekly consumption is estimated to be in the order of 2-4 litres per week.

1.3 Conclusions

This study was designed to provide an initial insight into consumption of raw cow and raw goat milk. Participants for the study were obtained largely through direct and indirect contacts provided by Real Milk Australia, and thus any conclusions derived from the study must be under the caveat that other quite distinct consumer types and segments may exist in the community. The conclusions drawn here are based purely on the interviews conducted, and while the face validity of the information and conclusions has been considered, corroborating evidence from independent sources would be required before they can be considered in any way definitive or comprehensive. The results described here are a robust description of the information obtained from the participants in the study – but care must be taken in extrapolating these results to the wider community, or to draw generalisations about raw milk consumers more widely.

Overall, participants in the study clearly felt that raw milk was a healthy option with no real risks so long as they knew and were confident of the source. Many felt that pasteurised milk was at best neutral and at worst quite unhealthy to consume, and most would significantly reduce or stop entirely consuming milk if raw milk was not available.

Many were open to considering 'alternative' lifestyles and beliefs, and this seemed to be a catalyst for them to embrace the information they discovered about raw milk. A surprising proportion had some prior experience with raw milk (often as children), and this also appeared to have a catalytic effect.

There were four different segments of consumers observed in the research, who appear to have slightly different motivations for consuming raw milk (and there may be more that were not present or identifiable in this study). Information that particularly resonates for each segment varies somewhat, as does the level of emotional commitment to the product. For some segments, the choice of raw milk is not made in isolation but as part of a wider belief system – usually about organic, natural foods and lifestyles.

There is a distinction that needs to be made between consideration of raw cow milk and of raw goat milk. Cow milk participants were definitely seeking a benefit of unpasteurised milk, while goat milk participants were sometimes more interested in the benefits of goat milk than of raw milk *per se*. Consumption of the two milks also varies a little – with goat milk

generally being consumed more quickly. However, overall there appeared to be more similarities than differences between raw cow milk and raw goat milk participants – while there were differences in the details, the motivations and logistics seemed very similar.

This study suggests that metropolitan consumers may be more reliant on shops and markets to provide commercially available raw milks, while regional consumers may be more likely to use direct sources. This seems plausible at face value, but would require further investigation before it could be confirmed, especially as we were not able to speak to any metropolitan raw goat milk consumers. Metropolitan participants tended to be on higher incomes while regional participants were often on lower incomes. Again, this might be indicative of differences in the nature of consumers in these locations, but more corroborating evidence would be required to confirm this observation.

Once they have the raw milk in their homes, the overriding message from participants was that they basically do not consider it or treat it any differently to any other fresh produce. They keep it refrigerated to maintain its freshness and quality. A larger proportion of raw milk consumers appear to use raw milk in the making of derived dairy products, but only a relatively small proportion of participants pushed out the life of the milk beyond a week and used it in the various forms that it turns into after this time period.

Most participants expressed a wish that selling raw milk was not illegal so that consumers and producers would have a choice of the type of milk they chose to use.

2. INTRODUCTION

The production for sale of raw cow and raw goat drinking milk is prohibited in Australia with few exceptions. Those exceptions concern the production for sale of raw goat milk in New South Wales, Queensland, South Australia and Western Australia through licensed operators.

Food Standards Australia New Zealand (FSANZ) has commenced a risk analysis process that will examine the safety of raw cow and goat milk for human consumption. This analysis will include a comprehensive microbiological risk assessment. Consumer research is required as a support to this analysis to understand what attitudes (both positive and negative) exist in the raw milk consumer population and to obtain information about consumption behaviour.

Whilst the sale of raw drinking milk is prohibited or controlled, consumers are able to obtain raw milk through a variety of sources. In the case of raw cow milk this is primarily via cosmetic milks, and direct from large and small scale producers. In the case of raw goat milk (as outlined above) there are some licensed sellers in various States in addition to obtaining raw milk from one's own goat. There is also the opportunity for individuals to obtain milk directly from a cow or goat that they own, or co-own.

A brief Internet search on attitudes to raw milk consumption shows that there is a wide variety of opinions on the benefits of consuming raw milk as opposed to pasteurised milk. The diversity of opinions range from the simple (for example that it tastes better) to the sophisticated (for example, that the pasteurisation process destroys many of the nutritional benefits of milk).

In addition, the growth in promotion, purchase and consumption of 'organic' food stuffs in the wider community highlights the potential that consumers are interested in obtaining what they perceive to be 'pure' food. At the present time 'organic milks' do not refer to raw milk (pasteurised milk can equally be produced 'organically' and raw milk can be produced in-organically), but there may be a latent consumer desire to obtain raw milk from such 'organically oriented' consumers. Indeed, anecdotal feedback with such organically-focused people indicates the perception that organic milk readily available on the market is raw milk.

A number of advocates of raw milk are growing demand in other areas as well. On the internet there are a number of health practitioners advising the consumption of raw milk for a variety of reasons – that it is a healthier alternative for children or aged consumers through to curative properties for allergy sufferers and even cancer patients. These are not necessarily committed advocates of raw milk *per se*, but in some cases more incidental advocates who come to promote raw milk to achieve benefits that are relevant to their area of interest.

These areas for potential growth in demand indicate potential areas of misconception that may need to be countered. The power of the existing behaviour and attitude research is in describing and understanding the prevalent perceptions in the community so that alternative messages could be developed address high risk food practices.

3. OBJECTIVES

As presented in the briefing document, the key objectives of this research are to collect data on:

- **Motivations** driving the consumption of raw cow and goat milk, for example taste, health benefits, availability.

- **Knowledge and awareness** of raw cow and goat milk consumption including knowledge/perceptions about risks and/or benefits to health, including sources of information.

- **Consumption behaviour** including frequency of consumption, quantity of consumption, purpose, methods of storage and any treatment (eg scalding) prior to consumption.

- **Socio-demographic profile** of raw cow and goat milk consumers, including age, gender, race/ethnicity, health status, occupation (including identification of goat/dairy farmers), geographic location (eg. rural/urban).

As such, this research task is essentially a descriptive and exploratory one.

The qualitative nature of the project and the sample ultimately used for it preclude a definitive attempt to address the last of these objectives – the profiling of consumers. To do this would require a systematic quantitative approach to data collection. Information about the sample of participants in the study is provided here – but it is not appropriate to assume that this is in any way representative of all raw milk consumers in the community.

4. METHODOLOGY

A qualitative research methodology was employed for this project, with individual in-depth telephone interviews used to elicit information from participants. Interviews were semi-structured using an approved discussion guide and lasted typically between 40 and 60 minutes. The interviews also included a summary 'quantitative' section in which some data was systematically collated. The agreed interview guide was used to structure the analysis and reporting of the project, and data from the 'quantitative' section of the interviews is integrated through the report to support and clarify the main qualitative data.

The telephone interviewing approach allowed a wide geographic coverage, while also reinforcing the anonymity of participants – particularly important in the quality of data gathered for this project.

The discussion guide for the interviews was designed by Colmar Brunton Social Research (CBSR) in collaboration with Food Standards Australia New Zealand (FSANZ).

In total, 39 interviews were completed between August and November 2007. 38 of these were current consumers of raw milk, and one was with a person who was about to obtain a cow for the purposes of getting raw milk. The total number of participants was slightly fewer than originally intended, with the final number constrained by several factors. Pragmatically, the project's time and budget constraints influenced the final sample size, as they always do. However, the available sample of participants was also largely exhausted by the completion of the interview stage; and the researchers were confident that a saturation point had been reached. This means that no (or very little) new information was emerging from the last interviews, which is suggestive in qualitative research that sufficient data has been collected.

The first five interviews were conducted as a pilot. Participants in these interviews were identified from respondents to Colmar Brunton's national on-line weekly poll. Respondents to this survey were asked if they consumed raw milk, and those who indicated that they did[3] were re-contacted and an interview arranged if possible. The discussion guide used for these interviews can be seen in Appendix A.

An additional 12 interviews were then conducted in August 2007 using the original discussion guide. These interviews were largely conducted with raw milk drinkers identified through the Real Milk Australia organisation. Some contacts were provided directly by this organisation, and additional contacts were obtained by 'snowballing[4]' from these original contacts.

At this juncture there was a delay to the project while the nature and objectives were reviewed. In October the project re-commenced using a slightly different discussion guide with somewhat different emphases than the original guide (see Appendix A). A further 22 interviews were then completed in October and November 2007. These were sourced in a similar way to the previous 12 interviews – directly and indirectly from Real Milk Australia contacts.

---

[3] Many of the people who indicated they consumed raw milk were in fact simply consuming pasteurised milk which they did not use for cooking, rather than unpasteurised milk.

[4] Snowballing is the process of asking contacts if they know of any other suitable contacts. A limit is applied on the number of snowball contacts generated from any one contact, and the number of 'generations' that can be followed from an original contact.

It is standard practice in market and social research to pay an incentive to participants in qualitative research to reimburse any costs or time costs associated with participating and as a way of thanking them for their contribution. All participants in this study were paid $50 as a 'thank you' for their time and contribution to the project.

Sample details and limitations

The following tables show the demographic profile of the participants interviewed.

It is important to note that the sample of participants is not necessarily representative of the population of raw milk drinkers in Australia. The incidence of consumption of raw milk in the community appears to be very low, and certain aspects of obtaining it are illegal. This makes it difficult to obtain research participants utilising any normal random sampling approach.

The sample was therefore a necessarily opportunistic one, utilising contact lists from groups where the behaviour was more common. In the absence of many suitable starting points, ultimately the participants for the study were largely derived from direct contacts provided from one particular organisation (Real Milk Australia) and snowballing to friends and acquaintances of these original contacts. All bar the original five participants were either sourced directly from Real Milk Australia, or within two 'generations' of snowballing from a Real Milk contact.

The reader should be cognisant of both the sample profile and the sampling methodology when interpreting the results of this exploratory research. Using such an opportunistic and purposeful sample allows us to access people who may otherwise not be reached. However, it also limits our capacity to control the participant sample as fully as may otherwise be the case. In this study, the total number of participants who were included was ultimately limited by the number of contacts we could generate, and this was largely exhausted. Because of this, we had little capacity to then balance factors that might otherwise be considered in a qualitative sample, such as gender, age, metropolitan versus regional location, or type of raw milk consumed.

It is possible that important categories of users were not included in the research at all, and the relative balance of participant numbers from segments that *are* included in the research may not reflect their incidence in the community. The value of qualitative research is in generating insight into the range and inter-connection of important issues – but it is not a reliable method of determining the relative prevalence of these issues or of profiling consumers. The limitations described here are not intended to suggest that the participant sample was not able to advance our understanding of raw milk consumption; as a great deal of previously unavailable data has been generated. This discussion is intended to ensure the reader correct contextualises the information here and does not seek to extrapolate it beyond its capacity to be representative.

Table 1: Demographic profile of the interviewed sample

State	No. of participants
NSW	5
Vic	21
Qld	9
WA	1
ACT	3

Gender	No. of participants
Male	11
Female	28

Primary Raw Milk	No. of participants	Secondary Raw Milk	No. of participants
Cow	29 (inc 1 prospective user)	Goat	7
Goat	10	Cow	2

Gross annual household income from all sources	Metropolitan	Regional	Total
under $40,000	-	9	9
$40,001 - $50,000	1	2	3
$50,001 - $60,000	1	-	1
$60,001 - $70,000	1	5	6
$70,001 - $80,000	1	2	3
$80,001 - $90,000	2	2	4
$90,001 - $100,000	-	2	2
$100,001 or more	8	2	10
Don't know	-	1	1
Total	14	25	39

The sample of participants in the research was dominated by Victorian consumers. 28 of the 39 participants were female, and two thirds (25) were in regional areas. Most participants

were primarily consumers of raw cow milk, with 10 participants primarily consumers of raw goat milk.

Regional participants' incomes were distributed across the range from under $40,000 to $100,000+ - but was skewed to the lower end of the scale. By comparison, eight of the 14 metropolitan participants had household incomes in excess of $100,000. It is possible that this reflects a real difference in the typical raw milk drinker in regional and metropolitan areas, but it is equally likely that this is a spurious pattern and it is not appropriate to draw any definitive conclusion based on this information in isolation.

Participants generally felt that they were of above average health, with 27 of the 39 choosing this description.

Table 2: Self-assessment of participants' health.

Health	Cow	Goat	Total
Above average health	21	6	27
Of average health	7	2	9
Below average health	1	2	3

In many participants' households there were other consumers of raw milk, including infants and children. Most participants reported that the other members of their family also consumed raw milk, with partners being the least likely to do so (see following table).

Table 3: Other household consumers of raw milk

Other consumers	Cow	Goat	Total
Under 4 years of age			
Male	2	4	6
Female	1	-	1
4 years – 10 years			
Male	4	-	4
Female	7	3	10
11 years – 18 years			
Male	5	6	11
Female	6	-	6
19 years or older			
Male	18	3	21
Female	3	-	3

Definitions

Throughout the course of this report, the following terms will be used with the meanings defined here.

'***Raw milk***' – means unpasteurised milk cow and goat milk. Where the term 'raw milk' is used it means both cow and goat milk – where a comment is made that relates only to one or the other of these types of milk, this will be specified. In this particular study all raw milk discussed was also un-homogenised (but in the wider context this is not necessarily the case).

'***Pasteurised milk***' – means the pasteurised milk typically consumed in Australia, and more or less without exception this refers to cow milk. In this study pasteurised milk was also assumed to be homogenised unless explicitly noted otherwise (again, this is not necessarily the case in the wider context).

'***Commercially available raw milk***' or '***commercial milks***' – refers to raw milk products that are sold through retailers such as health and organic food stores as well as farmers or growers markets, and includes raw milks sold as cosmetic or pet milks.

'***Producer'*** – refers to an individual or organisation that produces milk (ie: milks it directly from the animals). Can be an individual person up to a commercial dairy.

'***Supplier'*** – refers to an outlet that supplies (including 'sells') a product, in this case a raw milk product. Suppliers *could* be producers, but the term is used to indicate a source of raw milk which is separated from the production (such as organic or health food shops, or farmer / grower markets) and where a consumer accessing raw milk through a supplier is one step removed from the production.

5. FINDINGS

The 'Findings' section of the report documents the data obtained from the interviews, and also includes considerable commentary and interpretation. Throughout the report the main data referred to is the qualitative information from the interviews. Where possible, the 'quantitative' data is also included, sometimes in tabular format. It must be noted by the reader that these tables merely collate the data from the interviews, and are not in any way independent or representative survey data collaborating the qualitative data.

5.1 Motivations and First Experiences

Triggers to consuming raw milk

Note: This section looks at how people first come to choose to consume raw milk. The information in this section is drawn largely from the final batch of 22 interviews, as this question was not directly addressed in the earlier interviews.

There were a number of triggers to choosing to consume raw milk for the first time. These are the factors that prompt people to choose to have raw milk at a particular time in their lives. Triggers reported include:

1. Read information: (Typically in a book or on the internet)
    a. As part of wider interest in health/wellbeing, which leads to raw milk;
    b. Come across it in isolation (which can then be the starting point to look more widely at nutrition, health and diet issues).
2. Family member read information.
3. Told about it by someone else:
    a. Friends and colleagues.
    b. Health 'consultant' – nutritionist, naturopath, child health nurse etc.
4. Health problem – adult (eg: Digestive issues; Asthma).
5. Health problem – child (eg: Allergies; Lactose intolerance; Unsettled/sleep issues; Reflux; Asthma).
6. Lifestyle change.
7. Become aware of a practical source of raw milk (often for people who already have some interest in raw milk, but were not aware they could obtain it).

Catalysts

Catalysts are factors which cause something to happen or accelerate its progress. The concept is a useful one for the choice to consume raw milk, as many people reported factors that apparently contributed to their decision. These are not sufficient conditions in isolation to *cause* raw milk consumption, and may not be *necessary* – but are factors that increase the likelihood of a trigger event having an actual impact on behaviour.

Examples of catalysts reported were:

- Previous experience with raw milk, especially as a child.
- Living or working in rural areas where consuming raw milk is common (and perceived by some participants to be the norm), especially in the dairying community.
- A pre-disposition to organic food and 'healthy lifestyles'.
- A pre-disposition to 'alternative' lifestyle and belief systems.

These are important considerations, and often appear fundamental to the choice of raw milk.

The last two in particular are of especial significance to some consumers, as they define (or reflect) the underlying belief systems that result in the choice of consuming raw milk. For people who come to raw milk in this way, the choice of raw milk is not done in isolation – but rather in sympathy with many other similar choices of organic, natural foods and other lifestyle choices. Stereotypically these are 'hippie' values – but while some participants did broadly conform to this stereotype (and some explicitly recognised this), many others did not and the stereotyped imagery appeared of some - but very limited - value in understanding consumers.

These catalysts are contributing factors to the conceptualisation of raw milk consumer segments described in the Motivations section (section 4.2).

Raw milk consumer 'segments'

From the interviews, four 'segments' were identified amongst the raw milk consumers. These are defined by variations in motivations and triggers, and also appear to have behavioural correlates.

These segments of participants are not intended to be definitive. Some segments which exist in the community may not have been represented in or identifiable from the interviews conducted. We also have no way of determining the relative size of these segments from this data alone.

The value of the segments is in understanding the different ways that consumers come to raw milk, their different expectations, and in some cases the behaviours and attitudes that might be typical of a segment – but not of *all* raw milk consumers. There are meaningful differences between segments in specific ways, and understanding these differences gives a far more insightful understanding of the complexities of raw milk consumption across the community than would be obtained from assuming 'all raw milk drinkers are basically the same'.

The four segments identified are:

1. **Opportunists**: This segment is defined largely by the availability of raw milk, and seems particularly descriptive of many people who work in the rural and dairying communities. They are not strongly committed to the product emotionally, but use it because it is cheap, convenient and available. This group would most happily use pasteurised milk if raw milk was no longer available.

   "Went to work on a dairy farm. It's standard practice that workers on dairy farms get provided with milk for their personal use." [Male, aged 49]

2. **Lifestylers**: These are people who have made a lifestyle choice to consume organic and natural products, and this is often (but not necessarily) associated with other similar lifestyle decisions with respect to issues such as housing, energy, self-sufficiency and recycling as well as food. They seemed the most likely to produce their own milk, as well as other foods such as eggs and vegetables.

   This segment is probably the most emotionally committed to raw milk, and for them it is a wider belief system reflected in the specific choice to consume raw milk.

3. **Nutrition seekers**: Like the lifestyler segment, this segment is driven by a conscious choice to consume raw milk – but in this case based on an acceptance that raw milk is a nutritionally better product. Often they exhibit an openness to alternative philosophies (eg: herbalism, naturopathy), but the segment is defined by a reliance on their personal evaluation of scientific and / or technical information they obtain about the nutritional composition of milk, and the impact of the processes of production of commercial milk. While their conclusions may be different, consumers in this segment consider that their decision is based on the most credible science available to them just as much as other consumers who choose pasteurised milk based on the scientific evidence provided to them.

   This segment was typically concerned not just about pasteurisation, but also about homogenisation. Pasteurisation they largely saw as the process of turning a good, live food into a valueless, dead product. However, homogenisation they often felt was an actively dangerous process which converted the fats inherent in milk into a form where they could be absorbed into the bloodstream and contribute to cardiac disease and other health concerns.

4. **The health concerned**: This segment has much in common with the lifestyler and nutrition seeker segments in that it involves a conscious choice to use raw milk. However, while the lifestyler and nutrition seeker segments are 'proactive' choices made by individuals, the health concerned segment is more *reactive* to a specific health concern.

   There are two sub-segments of the health concerned segment: adult health concerns and infant/child health concerns. Adult health concerns tended to focus on digestive issues and respiratory issues, although others were mentioned and implied. Infant and child health concerns were often about allergies or lactose intolerance/digestive

issues.

It is worth noting that the health concerned segment often appeared to be attracted to goats milk in preference to cows milk. In some cases the choice of raw goats milk versus pasteurised goats milk was more to do with practical considerations such as taste[5], availability and cost than with the milk being raw *per se*. Some users of raw goats milk would equally happily consume pasteurised goats milk if that was what was available – whereas people who chose raw cows milk would not consider pasteurised cows milk.

These segments are not mutually exclusive, and any given individual can simultaneously exhibit elements of more than one. However, in any given individual participant, typically one or the other of the segments appeared dominant.

There are also 'levels' or 'degrees' within the segments. The opportunist and the health concerned segments tended to be the most prosaic, with decisions to consume raw milk based on less emotional considerations. In these segments the level of commitment to raw milk was generally lower – although those who consumed it for health benefits would typically prefer not to consume any milk than to return to pasteurised cows milk. Within the lifestyler and nutrition seeker segments there were cases of quite extreme views held on the benefits of raw milk, the detrimental effects of pasteurised milk and the reasons for the illegality of raw milk in Australia.

Other motivations to consume raw milk

Beyond the benefits of raw milk previously described, there is also a social or political connotation for some participants in consuming raw milk. This largely relates to the current prohibitions on the sale of raw milk and the lack of opportunity to choose to purchase and consume raw milk.

In most cases this is not their motivation to actually consume raw milk, but for some it *is* a motivation to *continue* to pursue sources of raw milk.

> *"I'm a believer in free choice. Things evolve to be perfect – why would we need to try to improve it? Pasteurisation might help some people, but it is not needed for <u>every</u>one and it takes away my personal choice." [Female, aged 39]*

> *"To support the raw milk industry – farmers and consumers should have a choice in a democratic society." [Male, aged 35]*

> *"Small dairies are dying out – farmers should be able to have farm sales of milk – something along the lines of community supported agriculture." [Male, aged 26]*

[5] There appears to be a greater difference in the taste of raw goats milk versus pasteurised goats milk than the equivalent difference for cows milk. This is typically ascribed to the length of time between milking and purchase of commercially available goats milk (necessarily a couple of days), which has a greater effect on taste than a similar time has on cows milk.

Many participants also used raw milk to make other dairy products. Some preferred to drink raw milk and only used soured or older milk to make cheeses, yogurts and kefir – but some enjoyed these products in their own right and used the raw milk to make them. Some deliberately made cheeses and yogurts in order to obtain particular health outcomes associated with the higher or different types of bacteria they contained.

Some participants also chose raw milk as part of a wider set of beliefs and values relating to the environment and sustainable living. This is largely the lifestyler segment, and these are people who keep and milk their own animals at least partly in order to reduce their impact on the environment.

Other barriers to consuming raw milk

Consumers of raw milk generally do not perceive that there is a risk associated with its consumption, so this is not (and does not appear ever to have been) a barrier to their consumption.

Very few participants reported ever experiencing any negativity or nervousness prior to first trying it (often they reflected on previous experience of it as a child, or were convinced of its benefits by whatever the trigger to their decision was), and those few who did tended to have been from the opportunist segment. Even those who were giving the milk to young infants did not report any particular initial concerns other than the likely taste.

However, even for those who have an interest or preference for consuming raw milk, there are barriers to doing so. The main barriers are:

a. <u>Legislation limiting availability</u>
   Probably the biggest barrier to many people appears to be obtaining the milk in the first place.

   In regional areas many participants reported that they could find direct sources of milk through word of mouth, local networks or directly approaching prospective sources. In metropolitan areas, where there is probably a higher reliance on commercially available raw milk products, finding places from which it is available seems to be matter of accidental discovery or extensive searching (and in some cases deliberate facilitation).

   In both places though, the difficulty in actually finding a source of raw milk had prevented some participants from using raw milk, and by extension could be expected to be preventing other prospective users from doing so.

   An associated issue is that commercially available milks are often labelled 'Not for human consumption', which a number of participants did note was something that may have initially put them off a little – though regular consumers subsequently appeared to feel this was simply to avoid legal issues and was not a real warning.

b. Variable supply

Supplies of raw milk are more variable than pasteurised milk. Commercially available raw milk products are often only available from isolated shops at specific times (often only once or twice a week), and the volume available to any one customer may be limited by the shop to ensure enough to go round or could be affected if the shop received a smaller than usual delivery.

For those who obtain their milk direct from producers, those who rely on commercial dairies are the least impacted by variable supplies. Those who rely on private sources are often impacted by issues such as the animals suckling young, drought, holidays, and competing demands from other consumers.

When supply is not available for a short period, participants tended to either use a small amount of pasteurised milk or stopped consuming milk until their normal supply resumed.

When supply is affected for longer periods, participants would actively seek other sources. In metropolitan areas where the reliance was largely on commercial products, this was generally not the case and there were no meaningful indications of how participants would have reacted. For those in regional areas, it typically meant trying to find an alternative source – which often meant travelling considerably longer to get milk (which many seemed willing to do until a more local supply could be resumed).

c. Price

Raw milk (and other raw dairy products) can be considerably more expensive if they have to be purchased commercially by comparison to being obtained directly from producers. For participants obtaining raw milk directly from a source, price was often a factor in *favour* of raw milk (often being considerably cheaper), but for some of those using commercial raw milks, the higher price was a barrier (at least initially).

5.2 Knowledge

Overall, participants' knowledge of raw milk varied considerably. Some participants could talk in great detail about raw milk – its production, perceived nutritional and health benefits, composition, and in some cases politics. Other participants knew little of the product beyond their own personal experience and motivations. A number of participants indicated that they had read or heard more specific information, but could no longer recall the details.

Participants from the nutrition seeker and lifestyler segments were the most likely to be able to quote a wide range of details about the product. These were individuals who had based their conscious decision to use raw milk on this information, and in many cases could provide a significant level of information about it.

The small number of participants from the opportunist segment appeared to know the least about the product – for them it was not so much a conscious research-based decision to use it, and their level of information was correspondingly less.

Those from the health concerned segment were variable. Some could quote quite broad levels of information about raw milk, while others were only really aware of its characteristics in relation to their specific health issue. Others still had only a general sense that it was beneficial, but were not sure how or why.

In almost all cases, the knowledge demonstrated by participants appeared plausible (that is: it could be considered 'superficially fair or reasonable' by a layperson) and internally consistent.

The term "raw milk"

Most participants were comfortable with and used the term "raw milk". It appears that this terminology is suitable for communicating with these consumers at least.

Amongst non-consumers the meaning of the term can be confusing. As part of the initial recruitment of participants for this study Colmar Brunton ran a question on our regular on-line poll asking whether people regularly consumed raw milk. Some 40 people responded that they did – but when re-contacted only seven of these were consuming unpasteurised milk. The rest were confused about the meaning of the term, assuming it meant that they did not use it in a cooked form.

This is potentially important, as it suggests that the term can likely be used effectively to communicate with users, but may cause confusion amongst non-users and would need to be clearly defined when used with this audience.

Information sources

There was a relatively small range of information sources quoted by participants. A number of these are directly or indirectly linked to the foundations of the philosophies of the Real Milk Australia organisation - which may reflect the nature of the participant sample as much as the full range of information sources in the community.

Table 4: Source of information used.

Information Source	No. of participants
Word of mouth (friend/family member/colleague)	17
The Weston A. Price Foundation (website/literature)	13
Books/studies (not specified)	10
Internet sites (not specified)	9
Real Milk Australia	7
Book: "Nourishing Traditions" – Sally Fallon	5
Studying naturopathy/nutrition/veterinary science	3
Book: "The untold story of milk" – Ron Schmid	3
Book: "Natural Farming" – Pat Colby	3
Doctor Mercola website (www.mercola.com)	3
Book: "Nutrition and Physical Degeneration" – Weston A. Price	2
Goat Associations	2
Information from milk producer or supplier	2
Health professionals (maternity nurse, doctor)	2
Alternative health professionals (homeopathic doctor, reiki practitioner)	1
Working knowledge of the dairy industry	1
Nourished magazine	1
US dairy goat journal	1
Gordon Rubin book	1
Mark McCafferty website	1

It was noticeable across the interviews that participants used language and terminology that appeared derived from a common source. The most obvious example of this was use of the phase 'the availability' of nutrients in raw milk. This is not a common-language use of this term, and likely indicates that participants were repeating back language that had been used in communicating this concept to them. The consistency of using this term suggests that many participants were quoting from a single source, or from a body of communication which uses this term in this way.

Participants also constantly referred to raw milk as a 'live' food, and pasteurised milk as a 'dead' product.

Another example of a term which was used unusually commonly was 'enzyme'. This was the very first point raised by many participants in discussing the benefits of raw milk, and again the consistency of this usage suggests some common antecedent.

What makes a credible or trustworthy source of information?

There were a number of factors that participants indicated they consciously believe they look for in a credible information source. This use of the term "consciously believe" is not to

imply that participants have been mislead or are attempting to be misleading – simply that psychological studies have shown that most people are not able to consciously identify all of the (or even the main) factors that affect their attitudes and in particular their behaviour.

It is unlikely that people consciously consider the credibility of a source of information when they are exposed to it – rather forming an opinion instinctively based on their own existing knowledge and experience, and on how closely it conforms with their pre-existing views and opinions. A number of participants acknowledged this, while most took a few moments to gather some thoughts on the subject (suggesting that this level of conscious consideration had not previously occurred).

For this reason, a simple review of the information sources quoted is a more reliable indication of what participants consider to be credible – rather than this elaboration of why they are credible. That said, there are some insights to be gained from the views which were consciously expressed, as these also reflect their values and self-reflection.

Many participants indicated they had not come across any non-trustworthy sources of information. Those few who did indicate seeing such information nominated the dairy industry (as having vested interests in the *status quo*, and therefore not producing reliable information) or (less often) public health agencies (who either rely on old science, or are overly influenced by the dairy industry).

Factors that participants felt made a more credible source were:

- Personal experience – either of consuming or producing the product;
- Research – quoting results of research and other studies (both controlled studies – such as one participant from the nutrition seeking segment who quoted relevant CSIRO research that they had come across through their work - and anthropological studies based on historical community level data);
- The background of the author – their education and profession, and by implication their perceived objectivity;

Many participants found it difficult to judge why a source of information would be credible – relying on their instinct or intuition. Combined with the predisposition people have to accept information that is congruent with their existing attitudes and/or behaviour, this is an important point.

While the bulleted reasons above are likely the same reasons for credibility that might be cited by other individuals who reject the exact same pieces of information, it is likely that an individuals underlying beliefs are critical in determining what is considered credible information and what is not.

Participants in the study – all raw milk consumers – tended to express at different points in the interviews an openness to 'alternative' belief systems, scientific interpretations and lifestyles[6]. Examples include:

- Many participants used the term 'organic' to describe their preferences for foods, and in some cases they would not consume any non-organic produce at all.

[6] 'Alternative' in the sense of being different to the mainstream or predominant views in the community.

- A number expressed a preference for using naturopaths and herbalists in preference to conventional western medicines. Others ran businesses along these lines, as well as in sustainable farm practices, nutrition, and the arts.

- Several, especially the lifestyler segment, deliberately live alternative lifestyles, including self-sustainable properties (in one case including not using commercial power supplies), and in at least three cases either home-education or alternative school philosophies for their children.

Only one participant described themselves as a 'radical hippie' – but most exhibited, in one way or another, an openness to unconventional thinking that is typical of this sub-culture. While the stereotyping associated with this sub-culture should not be overstated, it does provide some modicum of insight into the lifestyler segment in particular. This openness may substantially contribute to the instinctive or intuitive response to a particular piece of information, and by implication to their assessment of the credibility or trustworthiness of the source.

It is for this reason that such an openness, along with past experience of raw milk (especially as a child), is described as a catalyst for consumption. It is not a *sufficient* condition to cause a person to consume raw milk – and it may not even be a *necessary* condition – but it is likely that it acts to increase the likelihood that a given individual will be persuaded by a particular piece of information to convert to raw milk consumption.

Perceived benefits of raw milk

There were numerous perceived benefits of raw milk identified by participants in the research. The list below documents the full range of benefits that were mentioned across all interviews – though it should be noted that very few individual participants identified all (or even most) of these. No assessment has been made regarding the scientific validity or otherwise of the perceived benefits that consumers identified. The discussion below is reporting the breadth of what consumers **believe** to be the benefits of consuming raw milk.

The most commonly mentioned benefits of raw milk were nutritional and health related, though the full range of benefits does go beyond these areas.

1. Nutrition

    a. 'Science'-based nutrition: not surprisingly, this was the cornerstone of the nutrition seeker segment's perceived benefits, but also was referred to by the lifestyler and the health concerned segments.

        This approach was predicated on the nutritional value of raw milk being the starting point for any evaluation of the nutritional value of the processed version. Pasteurised milk was considered to have much of its nutritional value destroyed by the heat-treatment process. The most common impacts cited were:

            i. Enzymes that assist in digestion (especially of lactose) are destroyed;

            ii. Good bacteria (that amongst other things helps keep bad bacteria from growing in the milk) is destroyed;

iii. Vitamins are destroyed (especially A, B and C);

iv. Calcium becomes unavailable to be extracted by the body; and

v. The composition of proteins is altered.

The main view expressed was that raw milk was a live food, with pasteurised milk believed as being dead and having no nutritional value. Some participants (from the nutrition seeker segment) noted that the altered or dead nutrients remained in the milk (such as histamines), but few offered the view that pasteurised milk was actually harmful.

Bigger concerns were held over the effects of homogenisation by participants who went into detail about their scientific understanding of raw milk and nutrition. They noted that the process of homogenisation involves breaking down the fat molecules into a smaller form that effectively is dispersed into the milk (to avoid the layered cream effect). However, these smaller molecules can then be absorbed into the bloodstream in a way that the original molecules could not – thus adding to the fats which are present in the vascular system. This was not ever discussed in relation to issues of fat and weight control, but rather with respect to vascular disease.

b. Value based nutrition: more the foundation of the lifestyler segment, this was based less on the science of nutrition and more on the values of whole or natural products.

Raw milk was described as 'the way it was meant to be' and in a variety of other similar ways. It was often noted that raw milk had been consumed for thousands of years before the process of pasteurisation, and still is in many other parts of the world.

Participants who expressed this view as their dominant view also seemed most likely to cite examples of contemporary health problems such as osteoporosis, diabetes and other conditions as being confirmatory (or in extreme cases as proof) that pasteurisation was not beneficial.

"2 generations ago there were no allergies, no cancers, all those things – and now we have all of this. It suggests something wrong has happened, and our philosophy is to get back to nature." [Female, aged 45]

"I'm not a scientist, it's my intuition. Like raw fruit and vegetables, it's healthier that way." [Female, aged 39]

"Natural sources are better than processed sources." [Male, aged 30]

2. <u>Health</u>

Numerous perceived health benefits were specified. Most participants who had only recently converted to raw milk (in the last 12 months) did not report having seen any obvious health changes in the short time they had been consuming it. However, many participants with longer experience did report seeing benefits – particularly

those who came to raw milk through the health concerned segment. Participants from this segment who were continuing to consume raw milk were largely doing so because they perceived a tangible benefit from doing so.

27 of the 39 participants described themselves as being of above average health, and just three as being of below average health.

Some participants were not looking for any specific health benefits, but rather just general overall health benefits.

The following list details the specific health benefits sought, expected or observed. Benefits reported as being specifically observed by at least one participant are indicated with an *.

- Reduced digestive problems* (including lactose intolerance*, bloating*, flatulence*, infants being 'chucky' or unsettled after feeding*);
- Reduced eczema and skin conditions;
- Improved immune system, allergies and hay fever;
- Reduces mucus and phlegm production*, often linked in participants' answers with better breathing and a reduction in asthma*;
- Better teeth and nails*;
- Children and family being very healthy overall and less incidental illness*;
- Obtain more calcium, good for bone health;
- Heat treated fats far more unhealthy than non-heat treated fats;
- Treatment / management of Diabetes;
- Reduced joint stiffness (the "Wulzen factor[7]" from unpasteurised butter); and
- Some participants reported that they had heard stories of raw cow milk or goat milk being associated with extreme health outcomes such as preventing cancer, but little emphasis was placed on these isolated anecdotes, and no participant directly claimed such a benefit.

3. <u>Know where the milk comes from</u>
This was a significant consideration for many participants – with both a health and a nutrition motivation.

The underlying benefit was to know that the animals have been looked after and are healthy – but more importantly what they have been fed and that they have not been given drugs like antibiotics.

[7] The Wulzen Factor refers to a plant sterol known as Stigmasterol which is present in unpasteurised milk and which has been linked to reduced joint stiffness.

For many participants the issue of organic/pasture-fed animals is as important as the unprocessed nature of the milk in driving their usage. Amongst many participants the choice of an organic/pasture-fed source of milk was central to their preferred source of raw milk, and a number reported changing sources to obtain this.

There was little or no discussion from participants of the attractiveness of 'cross variable' combinations of organic and unpasteurised milk – eg: the relative attractiveness of non-organic unpasteurised milk compared to organic pasteurised milk. It was clear that some participants had chosen to move from non-organic to organic sources of raw milk once they found such a source.

4. Taste

   Not all participants reported being able to taste the difference between raw and pasteurised milk, but those who did almost universally preferred the taste of raw milk (those who did not were typically goat milk drinkers, who consumed the milk in a variety of ways other than drinking it in its plain form).

   It was sometimes noted that they hadn't really noticed the taste difference when switching to raw cow milk, but that they noticed it very much when they subsequently consumed pasteurised cow milk.

   a. Fresher (if obtained directly, most participants get that day's milk).

   b. Some participants reported particularly liking the unseparated cream, giving a much creamier tasting milk (particularly cows milk).

   c. The taste variations at different times of the year, or from different breeds of animals.

5. Price

   This was especially an issue for the opportunist segment – as dairy workers evidently often get the milk free of charge.

   Commercial raw goat milk in particular is quite expensive (up to $5 per litre was reported), and quite often it can be obtained direct at substantially lower prices. This is an explicit issue for some people, and in some cases was the core reason why they consumed raw goat milk as opposed to commercial pasteurised goat milk.

Attitudes towards pasteurisation

It was universally felt by participants that pasteurisation did not have any benefits, at least for them.

Some participants felt that pasteurisation was a process that may have a place under certain circumstances – when disease is present in animals, or where farming and milking practices

are poor. However, their view was that when they were confident of the source of the milk (which they all were), there was really no need for pasteurisation.

Many participants (especially those not in the opportunist segment) felt that pasteurised milk was a dead, pointless product that was not worth consuming. Some believed that the reliance by western cultures on the supposed nutritional value of pasteurised milk was one of the reasons for the growth of diseases that are common in such contemporary societies – obesity, diabetes, osteoporosis and the like.

A few believed pasteurised milk was actively harmful, though more felt it was the process of homogenisation that made commercial milks particularly dangerous through changes to the way the fats are dealt with by the human body.

Again with the exception of the opportunist segment, participants generally expressed a desire for raw milk to be legally available and for consumers (and producers) to at the very least be able to choose what type of milk to consume.

There was a view amongst some participants that mandatory pasteurisation was simply a mechanism for large commercial interests to control the market – preventing small producers from selling milk directly and allowing prices to be maintained.

Benefits of pasteurised milk

On the whole, the only benefits reported by participants of pasteurised milk were convenience, availability and price (for those buying commercially available raw milk products).

Most participants explicitly or implicitly recognised that there is a place for pasteurisation if the source of milk is not clean and hygienic, and many that there was good cause for pasteurisation to have been widely practiced in the past.

However, most participants believed that in contemporary Australia there was no permanent need for pasteurisation as animal health and milk production processes are (or should be) of a sufficiently high standard to render it unnecessary. Some reported that they felt it is a way that allows big commercial operations to not look after their animals as well, to use more drugs (eg: antibiotics) and 'unnatural' processes (eg: grain feeding) to artificially boost milk production without having to be so concerned about the quality of the milk ultimately produced. Some see mandatory pasteurisation as a way of controlling production and pricing by preventing competition from small producers.

Participants who source milk from a direct source were almost universally of the view that pasteurisation was not necessary for their milk because they knew and trusted the source of their milk – they knew how the animals were kept and fed and how they were milked.

A variety of information was provided in support of this, including references to testing that is done in dairies, through to the closed production processes of modern dairies.

Very often participants cited as evidence that raw milk had been consumed for thousands of years, and still was consumed in many places. They noted that modern western society has a number of health problems that seem to have appeared or dramatically increased in the last 100 years (such as diabetes, childhood obesity and food allergies) – since milk had been pasteurised – but these conditions were not seen in countries with more traditional diets

(including raw milk). This was also widely seen by participants as an argument to support the nutritional and health benefits of raw milk. In some cases this argument was given a broader scope to all processed foods, while for other participants it was very specifically about raw milk.

This is considered as evidence by respondents that there is no fundamental need for milk to be processed in any way – that it is a perfectly good food in its natural state.

> *"Why take perfectly good food, take it apart and put it back together to a man-made recipe?" [Female, aged 62]*
>
> *"I understand years ago there was a need for pasteurising, but not now with the hygiene in dairies." [Female, aged 33]*
>
> *"I drink raw milk by the glassful – I wouldn't drink a glass of pasteurised milk – there's no point." [Female, aged 48]*

Perceived risks of raw milk

The perceived risks of raw milk were very low. Many consumers felt that the risks associated with raw milk were no more than with any other fresh product – and some felt that raw milk was a *less* risky product than pasteurised milk.

> *"I have 100% confidence that raw milk, as a natural healthy product, will not make us sick." [Female, aged 48].*

Many participants felt that communication about the risks of raw milk was based on old or poor science at best, and at worst that it was deliberate scare-mongering by parties with vested interests in maintaining the *status quo*.

Many participants had heard that pasteurisation was intended to reduce the risk of Tuberculosis (TB) – but the prevailing view was that TB was not present in Australian animals and therefore this was a spurious benefit. There was recognition that diseases in animals could be passed on through consumption of milk, but it was considered that modern dairy herds were sufficiently well maintained and tested for this to not be a concern.

There were few risks considered to come inherently from the product itself. Consumers saw the nutritional and "pathogenic"[8] content of the raw milk to be more balanced, natural and healthy than that of pasteurised milk. Most considered that if it was handled appropriately (which largely meant being kept refrigerated) then there was no more, and possibly less, risk associated with raw milk.

Many consumers also noted that because of its bacterial content raw milk does not 'go off' or 'rot' in the same way that pasteurised milk does – it sours and separates, but is still consumable in this form. Some even noted that refrigeration was not strictly necessary, but was preferable to suit our palates and keep the milk fresher for longer, making it more drinkable. This bacterial content was considered to reduce the risk of raw milk as a product, as it would thus not cause food poisoning even if consumed after this souring process had taken place.

[8] The term 'pathogenic' was used by several participants, notably those from the nutrition seeking segment.

The largest risk from raw milk was believed be related to the source of the milk – in particular to the health of the animals (the principle that disease in animals can be passed to humans by consumption of the milk) and from contamination during the milking process (especially unclean udders, and dust or other contaminants getting into freshly obtained milk in the dairy).

This made knowing the source of the milk very important for many participants. For almost all of the participants who got their milk directly from the source, their confidence in the source was extremely high. This was typically predicated on several sources of evidence:

- The producers consuming the milk themselves.
- Other consumers using the milk safely, including people who recommend a source or pass them on to a source.
- Knowledge of the background of the people providing the milk (eg: 'she is a nurse, so I trust she understands the hygiene').
- Having visited the source and seen the setting, animals and/or milking procedures – and being satisfied with what they had seen.
- Information provided by the source about their procedures and philosophy.

Most participants who get their milk directly from the source (and some who do not) indicated that they would not consume raw milk unless they were confident of the source.

Milking practices

A number of participants in the study milked their own animals, and some of these supplied milk to other people (either by sale or by giving it away). All of these participants were small scale producers milking in most cases one animal, though in several cases a small herd of goats, and all milked by hand. These participants were asked to describe their milking processes. Almost all described in some detail the steps they took to minimise the risk of contamination during milking, including:

- cleanliness of the milking area, which participants described as being swept and / or washed regularly (daily to weekly);
- cleaning udders prior to milking (primarily non-chemical based washing; though one participant from the lifestyle segment was very explicit that nothing more than a dusting was required);
- separating the first few squirts of milk from each teat and disposing of it;
- using clean containers with lids where possible (containers were typically buckets and other similar containers, washed between uses);
- straining the milk to remove physical impurities (typically done with cheesecloth or some other material); and
- refrigerating it as soon as possible.

Most of these participants were at pains to convey that they take the hygiene of the milk very seriously and took steps to ensure it was maintained. Many also noted that this was not about raw milk risks per se, but just good common sense hygiene as applied to the particular setting.

It is worth noting that some participants described first buying an animal to milk with little or no experience of dairy practices.

Commercially available raw milk

Consumers of commercially available raw milks (including those sold 'not for human consumption') generally did not know its source, and largely assumed that because the milk was being sold that therefore the source was suitably safe. Being labelled as not for human consumption had been an initial barrier to some participants, but through their method of introduction to raw milk (or to the particular source of raw milk) they appeared to have typically formed the impression that this labelling was simply to avoid legal issues and did not really apply.

This was not the case for *all* commercial buyers – those who bought from organic shops with local or dedicated suppliers often *did* have information about the producers, and sometimes emphasised they knew it was an organic/pasture fed source.

Steps taken to reduce risks

Although raw milk was not seen by participants to be a high risk product, many described some clear steps taken to reduce risks. However, no participant indicated that these were steps specifically taken with raw milk because it was unpasteurised – but either they were just good practices for fresh produce that they used for *all* fresh produce, or were taken to keep the milk as fresh as possible for as long as possible. They also spoke more often about maintaining the benefits of raw milk than about preventing any risks associated with raw milk.

This said, there was considerable variation in how long people thought it appropriate to store raw milk – from 3 days to a week was the normal range, though some people noted it could be kept indefinitely if you didn't mind the effect in terms of consistency and taste. One participant had milk in the fridge that had 'been there for weeks' - she opened it during the interview and reported that it smelt OK and that while she wouldn't drink it (for taste reasons), she used that type of milk for cheese making.

Those who thought it should only be kept for 3-4 days were probably the most likely to take steps to keep the milk refrigerated as much as possible. However, this was more due to the expected shorter shelf life than because it was a contamination risk.

Raw milk was universally kept in the fridge with other foodstuffs – and no participant reported trying to keep it in such as way as to avoid contaminating other foods - they did not see that such 'contamination' was possible. If a particular location in the fridge was selected, it would be the coldest part of the fridge to keep the milk fresh for longer.

A number of participants collected the raw milk using Eskies and ice to ensure it stayed refrigerated during collection and transport (which sometimes entailed trips of up to an

hour), and/or that they made sure they came home to the refrigerator immediately after collecting the milk. Again though, these were usually described as good general practices and most reported doing this with other fresh produce. A very small number of participants did note that this was something that they did only with raw milk.

Those who milked their own animals described milking processes to ensure good hygiene, including the use of clean closed food-safe containers, clean milking areas, steps to reduce contamination at the time of milking, filtering of the fresh milk, and quick refrigeration.

Most participants (both milkers and consumers) re-used containers. Most used glass bottles (generally old fruit juice bottles) where possible, but plastics were used where glass was not easily available. These included plastic milk bottles and Foodsafe plastic containers with lids. At a minimum these containers were cleaned in the general washing up – and most participants described more elaborate processes involving several rinses and the use of bottle brushes. Glass was universally considered the better material because it could be cleaned more thoroughly, and users of plastic bottles typically reported using them only a few times before replacement.

In general though, there was very little that participants consciously did to reduce the risks associated with raw milk that they would not consider good practice with any fresh product. They reported treating it like any other fresh product, and largely applied the same practices and standards that they would with anything else. This was largely considered common sense.

Knowledge of bacteria and risks associated with raw milk

As noted previously in this report, participants generally did not see any risks associated with raw milk consumption – so long as the source was known and they were confident about the quality of the milk produced. They saw little, if any, risk from the milk itself, or from its pathogenic content (a word that a number of participants used – especially those from the nutrition seeker and the health concerned segments).

Knowledge of bacteria within raw milk was very variable. Most participants were aware of the presence of bacteria in raw milk (and indeed all other products).

The most confident in their knowledge could talk about bacteria reproducing differently in different mediums and at different temperatures. They were aware that milk represents an ideal environment for bacteria to flourish in. Many indicated that one of the main benefits of raw milk by comparison to pasteurised milk is that the killing of good bacteria means that as bad bacteria are introduced to the milk over time, there are no good bacteria to prevent them spoiling the milk. This was seen as the reason why pasteurised milk rots and cannot be consumed, while raw milk merely sours and is still perfectly healthy to consume.

The least confident were aware that they knew nothing specific about bacteria. In the middle were participants who were vaguely aware of issues about bacteria, but not in detail – or they could no longer recall the details. In this middle group, the prevailing view was that whatever it was about raw milk and bacteria, it was generally *good* and not bad.

Cow milk versus goat milk

The above descriptions are largely those which are ascribed to raw milk versus pasteurised milk. However, there is an intertwined issue of goat milk versus cow milk.

Goat milk was described by participants who consume it as being more similar to human breast milk than cow milk, and more easily digested than cow milk. Often people who came to raw milk through the health concerned segment (especially infant health) were seeking goat milk rather than cow milk (and often goat milk rather than any particular need for *raw* goat milk).

Some of the health and nutrition benefits that goat milk drinkers describe are a blend of the benefits of goat milk and the benefits of raw milk, and the source of the benefit does not often seem to be explicitly considered by participants.

For drinkers of raw cow milk, the benefits are very clearly vested in the unpasteurised nature of the raw milk – although there are also benefits from unhomogenised milk and from organic/pasture fed cows.

For drinkers of raw goat milk the unpasteurised nature of the milk is not always the primary source of the benefit to be obtained. Presumably these consumers would be more open to a pasteurised product of similar cost and availability than would raw cow milk consumers.

5.3 Consumption, including purchasing and storage

In this section of the report a combination of qualitative and quantitative data is reported. The quantitative data is sourced from the participants in the interviews, and therefore is a numerically-based summary of the qualitative information – not an independent corroboration. Exact numbers reported here are indicative only, based on the small and potentially unrepresentative sample used for the study. The quantitative results should NOT be used to extrapolate to the wider population of raw milk users without additional, supporting data.

This study did not attempt to estimate the proportion of the community that consumed raw milk. However, as part of the recruitment process Colmar Brunton ran a question on our weekly on-line poll about consumption of raw milk.

In response to the question 'Do you or does anyone you know consume raw (unpasteurised) cow or goat milk?', from a national sample of 1,000 people, only 40 (4%) people answered 'yes' to this question. Our subsequent recruitment efforts indicated that only 7 (0.7%) people from this source were suitable participants in the research. The remaining 33 people consumed pasteurised milk, but considered it raw if they did not use it in cooking.

While this proved to be a relatively ineffective way to source participants to be interviewed, it did provide some indication of the level of raw milk consumption in the community. In this survey, less than 1% of respondents consumed or knew someone who consumed raw milk.

Dual use of raw and pasteurised milk

For many participants the decision to consume raw milk is a choice that has been taken quite deliberately, and participants who had made this choice typically consume pasteurised milk (if at all) only if raw milk is not available. Those who were more functional drinkers of raw milk (the opportunist segment) would just as happily consume pasteurised milk if that was what was available.

'Not available' happens for two main reasons: they run out of raw milk in between the occasions when they get it; or their supply becomes inaccessible for some reason (eg: drought, greater demand from other people, animals calving/kidding and the milk being used for suckling, etc).

Some kept a small amount of long-life UHT milk or pasteurised milk frozen against future need, while a smaller number mentioned storing some raw milk frozen against future needs (most did not have spare raw milk that can be frozen, and there was a view that freezing the milk was not ideal for its subsequent texture and taste).

Many participants indicated that they would dramatically decrease their consumption of milk if only pasteurised milk was available, while others would cease altogether until they could get raw milk again.

Some participants used pasteurised milk for specific purposes such as cooking (where the temperatures involved meant that raw milk was going to be heat-treated and therefore

ceased being raw anyway) or for visitors or family members who do not drink raw milk – but most report using raw milk for all household milk needs.

Frequency of consumption

The majority of participants (32 of the 38 current consumers – one participant has not yet begun consuming raw milk) consume raw milk daily, and often more than once a day. As is likely the case with pasteurised milk, individual preferences for milk consumption vary considerably. However, the overall impression was that raw milk was *at least* as much a part of consumers' diets as pasteurised milk typically would be for mainstream consumers and in many cases a greater part of the diet.

Method of consumption

The typical raw milk drinker interviewed in this project appeared to consume raw milk more or less as they would have consumed pasteurised milk, using it for cereal, in tea and coffee, in milkshakes and smoothies, as well as drinking it plain.

The use of raw milk to make smoothies in particular was often reported, and it seems possible that this is a form of consumption often used with raw milk. In this form it was sometimes described as a 'meal replacement'.

There did appear to be a far wider use of raw milk in the making of additional dairy products than might be expected of pasteurised milk users. Many participants reported using the milk to make yogurts (18 of 38) and cheeses (13 of 38), as well as some who made kefir – a product not dissimilar in appearance to drinking yogurt.

This was the case with both raw goat and raw cow milk consumers.

A number of participants reported that they made these types of products mainly with the milk as it got older and the taste become either stronger (goat) or sourer (cow), but others specifically use the freshest milk they could get to make these products.

Home treatment of milk

No participants pasteurised milk themselves – as this was considered to precisely cancel out the benefit of consuming raw milk. The only participants who had *ever* pasteurised the milk at home were those in the opportunist segment, and they had quickly given this practice up as being not worth the effort.

Some participants did consider that they 'treated' the milk in some way. A small number of participants shook the milk prior to use (to mix up the cream), and those who milked their own animals always physically filtered the milk prior to consumption. Some who considered that they treated the milk were using it to make other products – such as kefir, yogurt and cheeses.

A number of participants prepared fruit smoothies or milkshakes with raw milk, and this was sometimes done to mask the taste, particularly as the milk aged.

Cheese and yogurt making

Cheese and yogurt making practices varied somewhat across participants. Some made various products by introducing a culture and allowing the milk to sit un-refrigerated overnight or for several days to form the desired product. This process was described by a number of participants for making kefir, as well as cheeses and yogurts. Kefir was made in a continuous process by adding some of the old culture into new milk and allowing the process to repeat.

Cheeses were made by allowing the milk to separate into curds and whey, with the curds being used to make cheeses (primarily softer cheeses were mentioned by participants). Some participants preferred to do this with very fresh milk – others used milk up to several weeks old, believing it to be still suitable for this use despite no longer being palatable to drink.

Volume of consumption

Like frequency, volume of consumption varied considerably based on personal preferences. Typical personal consumption was in the 2-4 litres per week range.

Goat milk consumers in the study consumed on average a higher volume of milk per week than did the cow milk consumers (both personally and as households), though this may be related to the sources of the different types of milk used by participants (see next section) as much as to the distinction between cow and goat milk *per se*.

Table 5: Volume of raw milk consumed by participants.

Consumption of raw milk	Cow	Goat	Total
Personal			
Average (Litres per week)	2.4	3.7	**2.8**
Max (Litres per week)	6	11	**11**
Household			
Average (Litres per week)	7.4	11.7	**8.7**
Max (Litres per week)	20	30	**30**

Based on 28 raw cow milk drinkers and 10 raw goat milk drinkers.

Where there was a limitation on consumption, it was often the amount of raw milk available. Those who purchased milk from organic or health stores were often limited to a set order or a maximum number of units per person. Those who obtained milk from more direct sources may be limited by what was available to be shared amongst the people who wanted it.

However, many participants reported that their usage was not limited by supply, but rather that their typical consumption was dictated largely by preference.

Commentary on consumption

The over-riding impression given by participants was that their consumption of raw milk in liquid form was not qualitatively different to the way mainstream consumers would consume pasteurised milk. Frequencies and volumes vary with individual preferences, but generally they used raw milk in similar ways that pasteurised milk would be used.

If they differed from pasteurised milk consumers, it was that some raw milk consumers deliberately consume substantial volumes of milk specifically because of its perceived health and nutrition benefits.

Raw milk users did also seem considerably more likely to use milk to make other dairy products such as yogurts and cheeses than might be expected from typical pasteurised milk consumers.

Source of raw milk

Raw milk was obtained from five different sources:

Table 6: Source of raw milk used by participants.

Type	Source of Milk	Total**	Metro-politan	Regional	Cow	Goat
Supplier	Health food/organic store	**13**	8	5	13	-
Producer	From friend/family member /other person who milks own animals	**10**	3	7	5	5
Producer	Milk own animal	**7**	-	7	2	5
Producer	Commercial dairy	**6**	-	6	6	-
Supplier	Growers/farmers market	**4**	4	-	4	-

** Based on 38 participants. Two participants regularly obtain their milk from two separate sources.

Amongst participants in the research, the most common source of raw milk was from organic or health food stores, with cosmetic milks the most widely used by participants in this study. This source was the most common amongst metropolitan consumers, but not unheard of amongst regional consumers. No goat milk participants used this source. A smaller source, but similar in nature and similar in usage, was growers or farmers markets – being used by metropolitan cow milk consumers.

Obtaining milk direct from a small producer (family, friend, other person) was the second most common source amongst participants. Both goat milk and cow milk participants used this source, though it was one of two sources used by goat milk consumers compared to a wider range of cow milk sources.

'Milking own animal' was the other source of goat milk used by participants, but this was less common amongst the cow milk consumers. Some participants who milk their own goat indicated that the small size of the goats made this more practical than cows for hobby farm type properties – but none indicated that they would prefer a cow and only milked goats because they couldn't fit in a cow on their property.

A number of regional cow milk participants obtained milk direct from a commercial dairy, and several (including some who no longer use this source) indicated that they had previously used (other) dairies as well.

Initial awareness of source

Participants became aware of the source of raw milk through a variety of means.

- For those who milk their own animals, the question is largely redundant. However, many of the participants who do milk their own animals had obtained them after moving somewhere which allowed it (lifestyler segment), or after getting advice that resulted in them wanting to consume raw milk (the health concerned segment). A number had not had any experience with dairy animals or processes prior to getting the animal.

- Those who obtained it from another person directly often got it from a source that is, or is used by, the person who first made them aware of raw milk. These types of relationships were often quite personal and long-lasting, with the consumer returning to the source after temporarily using an alternative source if and when necessary.

- Those who got milk from a commercial dairy were particularly cautious about their relationship with the dairy involved, because of the illegality of selling raw cow milk. Often they first became aware of a dairy that had raw milk available through word of mouth or a network, and this was their first source of raw milk. In a number of cases this involved extensive travel (the longest reported was a 3 hour return trip, made weekly and specifically for the purpose of obtaining raw milk). A number of participants reported subsequently finding alternative sources that they now preferred to use. In these cases, the switch was usually made to be closer to a dairy or to a source which was philosophically organic/pasture fed.

- Those who got their raw milk from an organic/health food shop or from a growers/farmers market, typically either found the milk by accidental discovery or extensive searching. This group was usually influenced by the factors that are typical of the lifestyler segment and were already seeking other organic and natural or healthy food options. This was the typical experience of metropolitan participants, but a number of regional participants also reported this type of experience.

Reason for choosing source

Reasons for choosing particular sources were largely limited by availability. Once a participant found a viable source, with the exception of switching to a closer dairy or to an organic source of milk, the only other reason reported for switching sources was the previous source becoming unavailable.

Participants who get their milk directly described having a close relationship with their source, often a personal relationship. Confidence in the source of milk was something that most participants placed very highly in their considerations (a number indicated they would not consume raw milk if they did not know and have confidence in the source), and the producer-consumer relationships seemed very strong.

No participant reported having switched sources of raw milk because they were unhappy with the quality of the milk provided.

Ease of getting raw milk

Participants who were interviewed were all, by definition, successfully sourcing raw milk. It cannot be inferred that *all* people who wished to obtain raw milk were able to do so – and in fact by implication the reverse is true, as a number of participants had previously not been able to get raw milk until they discovered a source.

However, overall most participants did not feel it was difficult to source raw milk once they decided they wanted it. Many participants became aware of raw milk and/or formed an intention to use raw milk as a result of information directly or indirectly through the Weston A. Price Foundation or Real Milk Australia – and through these sources it is evidently possible to find a list of health or organic shops which stock commercially available raw milk products.

Regional participants seemed to suggest that it was relatively easy to obtain raw milk, especially once they started to develop a network of other consumers. Metropolitan participants appeared to have slightly more difficulty in finding sources unless they were aware of a mechanism to find one (eg: another consumer, or on the Weston A. Price Foundation/Real Milk Australia website).

Typically participants were travelling no more than 30 minutes to obtain their raw milk, and most were not travelling more than 15-20 minutes. However, at least two participants had previously or on occasions due to interrupted supply, regularly travelled over an hour (one way) in order to get raw milk.

Purchase frequency and volumes

Most participants purchase milk once a week. A few purchase twice weekly, and some less frequently. There are a number of factors that impact on frequency of purchase.

Table 7: Frequency of raw milk purchase by participants.

Frequency of Purchase	Total	Metro-politan	Regional	Cow	Goat
Daily (usually self milk)	7	-	7	2	5
Several times a week	2	1	1	2	-
Twice weekly	6	1	5	5	1
Weekly	18	9	9	17	1
Fortnightly	2	1	1	1	1
Monthly	3	2	1	1	2

Based on 28 raw cow milk drinkers and 10 raw goat milk drinkers.

For those who buy commercial raw milk products from organic or health stores, or from markets, purchase behaviour was frequently driven by availability and the delivery of supplies to the outlet. In many places, this seems to happen weekly on a set day, and

customers arrive to collect their milk the same day. Some customers have standing orders, for others it is a case of 'first in, best dressed'. The amount that is purchased through these stores is limited in some cases to allow more people to access a limited supply. This was largely accepted by consumers, many of whom were happy to have less milk themselves if it meant more people were able to get the benefits of consuming raw milk.

For those who got milk direct from a producer, the reasons for the weekly timetable are less definite. In many cases it appears to be driven largely by convenience, with making weekly trips to the source becoming the routine. Weekly collections did appear to be quite stable, being on the same day and often the same time each week. The volume which was collected on each occasion was either designed to suit the needs of the consumers, or limited by what was available for them from the total amount produced.

A further factor in the weekly routine seems to be the view amongst many consumers that this is about how long the milk can be stored and used. Some participants believed that the milk should be used within 3-4 days, and these participants tended to be those who obtained it more than once a week (including daily milking of their own animals).

The volume of milk obtained on each occasion was usually intended to be about a suitable supply for the period until they next obtained it. Few participants talked of obtaining extra and freezing it for future use. There were different views on the suitability of raw milk to freezing. Most participants who commented on freezing the milk indicated that they thought it had a detrimental effect on the texture and consistency of the milk, but that they did not feel it was particularly bad for the milk from a nutritional or health perspective.

Many participants' consumption of raw milk was limited only by their needs, or at least their needs were in balance with the amount they could obtain. However, a few – especially those limited by volumes available through commercial outlets – did indicate that they would buy more if it was available.

Table 8: Volume of raw milk purchased by participants.

Volume of purchase (L)	Total	Metro-politan	Regional	Cow	Goat
Average	6.8	4.5	8.4	7.1	5.5
Max	27	10	27	27	10

Based on 28 raw cow milk drinkers and 10 raw goat milk drinkers.

Not surprisingly, there was something of a relationship between how much milk participants got, and how often they got it. However, due to differences in consumption patterns, this is not a neat pattern. The participants who were obtaining milk twice weekly were obtaining the greatest volume per occasion, and also therefore per week on average. These were largely families with high consumption who needed to obtain milk twice weekly to meet their needs for sufficient fresh milk.

Table 9: Volume of raw milk purchased by participants by frequency.

Frequency of Purchase	Average Volume (L)
Daily	5
Several times a week	3
Twice weekly	10.5
Weekly	7
Fortnightly	7.5
Monthly	3

Cost

Of the 39 participants, seven milk their own animals and three others got their milk free (either from a dairy where they worked or from family members). On average, across all the participants, the average price paid for cow milk was $1.80 per litre, and for goat milk $1.20 per litre. However, there are considerable differences based on the location of the consumer – and this is largely driven by the sources available to them.

Given the qualitative nature of the sample, specific averages may not be all that reliable. However, the average price paid by metropolitan participants was more than twice that paid by regional participants, while cow milk was more expensive than goat milk

Table 10: Price per litre paid by participants.

Price $ p/L	Total	Metro-politan	Regional	Cow	Goat
Free	10	1	9	4	6
$0.60	3	-	3	3	-
$1.00	1	-	1	1	-
$1.10	1	-	1	1	-
$1.20	2	-	2	2	-
$1.25	1	1	-	1	-
$2.00	4	2	2	2	2
$2.50	4	1	3	4	-
$2.75	1	-	1	1	-
$3.00	5	3	2	4	1
$3.45	1	1	-	1	-
$3.50	2	2	-	2	-
$5.00	1	1	-	-	1
Overall average		**$ 2.68**	**$ 1.11**	**$ 1.80**	**$ 1.20**

However, this is largely due to the greater reliance of metropolitan participants on stores and markets to obtain milk, while regional participants are more likely to get their milk from their own animal free or direct from a producer. Table 11 shows that commercial dairies ($0.58 per litre) and small producers ($1.23 per litre) were considerably cheaper sources than stores and markets ($3.00 per litre). Goat milk was typically twice as expensive as cows milk *from the same type of source*.

Table 11: Price per litre paid by participants by source.

Type	Source of milk	Cow	Goat	Total
Supplier	Commercial dairy	$0.58	-	$0.58
Producer	From friend/family member/other person who milks own animals	$0.81	$1.75	$1.23
Producer	Health food/organic store	$2.84	$5.00	$3.02
Supplier	Growers/farmers market	$3.00	-	$3.00

If buying direct – knowledge of milk handling

Those who bought or obtained raw milk direct from the producer – be it a person milking a single animal or a commercial dairy – felt they had a reasonable understanding of the way the milk was handled before they got it.

In the case of large commercial dairies there was an expectation that the milk handling processes were suitably hygienic, and several (mostly the nutrition seeker segment) commented on seeing (in a small number of cases) or being aware of (more typically) regular testing In most cases where milk was obtained from the dairy it was from large refrigerated tanks prior to being loaded on tankers. In all cases, the participants were of the view that they were getting that day's milk from the most recent milking.

In the case of smaller producers often the customer had a relationship to some degree with the producer. Most reported that they had seen or regularly saw the milk being produced, and all were comfortable with what they had seen (although a number acknowledged that they didn't really know what to look for in assessing dairy processes). All participants reported that they either got 'that day's milk', or milk accumulated within the last 2-3 days at most in the case of single animal producers whose daily supply was limited. All participants reported that the milk was either refrigerated when they got it, or still warm from milking if very fresh.

Containers

Participants who purchased commercially available raw milks obviously got the milk in the container in which it is sold, and none reported decanting the milk from these containers into any other container other than for the purposes of making other dairy products.

Those who got their raw milk direct mostly supplied their own containers, although a small number of dairies (and other producers) operated a bottle-swap system. All participants who supplied their own containers re-used them, and most used and preferred glass bottles (empty fruit juice bottles were widely used). Participants' preference for glass was for two reasons – it cleans more thoroughly and can be used more often, and they felt it tends to

protect the flavour of the milk better. No comments were made by participants about any potential impact of transparent bottles on the nutritional content of the milk. Participants who used plastic bottles generally indicated they discarded them regularly.

All participants cleaned the re-used containers thoroughly. The minimum cleaning described was washing with the rest of the household dishes. However, many used a combination of elements such as cold water rinsing to remove residue; bottle brushes to clean inside bottles, lids and screw tops; total draining and air drying; and sterilising in high temperature dishwashers. None reported using chemical based sterilising product (as this was often counter to their views on use of chemicals and non-natural products).

One or two participants indicated that they sometimes got the raw milk in containers like plastic Foodsafe lidded jugs rather than bottles and then decant some milk into other bottles when they got it home. However, the majority of participants kept the milk in the containers they transport it in.

Most participants indicated the importance of keeping the raw milk refrigerated. Several noted that they transported the milk in Eskies with ice and/or ensured that they took it home immediately to be refrigerated.

Where raw milk is stored

All participants kept the raw milk in the fridge with other foodstuffs. Very few gave any consideration to the particular location within the fridge that it was stored, and those few who did chose a spot largely for being the coldest spot.

Participants stored the milk in the containers it was transported in (see above), and it was kept in closed containers in the fridge. This was not to protect other foods from any potential contamination from the milk (not a risk they perceive), but rather to protect the milk from ageing for as long as possible and from picking up odours and tastes from other items in the fridge.

Some participants who obtained large supplies of milk weekly or less often did store some in freezers (which necessitates the use of plastic containers), or in additional extra cold fridges. The purpose of this was to extend the fresh life of the milk.

The overriding belief underlying storage of raw milk was that it was no different in any way to any other fresh product. There was a recognition from some participants that raw milk could be stored more or less indefinitely without going off – though very few kept it for anywhere near that long, using it up through normal consumption. Others believed it did not need to be refrigerated – but only did this in order to make other products.

No participant identified specific ways in which raw milk should not be stored. Some, particularly those who felt it should be consumed within 3-4 days, were likely to feel it benefited from remaining particularly well refrigerated, but this was the only specific consideration mentioned.

How long raw milk should be stored

Opinions varied on how long raw milk could be stored for. These views largely fell into three categories:

- Less time than pasteurised milk – about 3-4 days. This view was the most common from participants who obtained milk direct from producers or milked their own animals (with about two thirds of those who sourced fresh milk taking this view). It was rarely based on a direct comparison with pasteurised milk, but rather an expectation that this was the duration the raw milk stayed at its best (ie: did not start to show signs of ageing – souring in cows milk and developing a stronger taste in goat milk) . Many small producers advised consumers acquiring the milk that this was the appropriate timeframe for consuming the milk.

  Where a reflection was made to pasteurised milk, it was that the processing – like all processing – was intended to artificially extend the life of the product, but at a detriment to its nutritional value.

  Some in this category were aware that it could be kept longer, but they usually consumed their milk within this time because of their consumption volume and they preferred the taste of the fresh milk.

  This was the most common view on storage life amongst goat milk consumers (largely because the taste becomes very strong more quickly). Cow milk consumers were more evenly distributed across all three categories, though this was the more common view amongst those who obtained fresh milk.

- About the same time as pasteurised milk – about a week. This category included participants who purchased commercial milks that have use by dates of around this length of time, as well as those who obtained it direct but who had a higher tolerance to aging milk or who used it to make other products.

  This timeframe was largely based on the perceived time before the milk becomes noticeably less pleasant, and again some participants were aware that the milk could be kept longer without spoiling or going putrid in the way that pasteurised milk does.

  No goat milk participants felt the milk could be kept longer than this, but it was a common view amongst cow milk participants.

- Longer then pasteurised milk – indefinitely. A small number of participants took the view that the milk does not go off at all, but rather changes form and remains consumable. Some harnessed this property of the milk and consume it in all its different forms over an extended time.

  Only cow milk participants felt that the milk could be kept longer than a week, and most of these were purchasing commercially available milk at organic/health food stores rather than fresh milk.

Information on storage life given by producers and suppliers

Most fresh milk consumers who did not milk their own animals were given the date that the milk was produced, but few were given explicit information about how quickly it should be consumed. Those who used larger dairies largely believed that the dairies assumed the consumers would know what they were doing with it. Smaller producers gave more information, which tended to be more in the vein of guidance rather than hard and fast rules. No participant reported getting a 'use by' date from a direct producer.

Commercially available raw milks bought from organic/health food shops and from markets often had a use by date – in particular the most widely used cosmetic milk. Some participants followed these rigorously, others paid no attention at all – this appeared to be largely dependent on the individual level of confidence and knowledge about the product. Those who tended to believe the milk kept longer were all more 'sophisticated' users who used the raw milk to make a variety of other dairy products, particular as the milk aged.

Some milk available from growers or farmers markets and some organic/health food shops had a production date, but not a use by date.

6. APPENDIX A: DISCUSSION GUIDES

6.1 Original discussion guide

Hello, my name is [RESEARCHER] from Colmar Brunton Social Research.

PRIVACT ACT REQUIREMENTS

- The purpose of this interview is to understand consumption of raw cow or goat milk in Australia. From your perspective we are interested in understanding your purchase and usage patterns of raw milk, including benefits motivations of consumption. There are no right or wrong answers, we're just interested in your views and opinions.
- This interview will take approximately 1 hour. Is that okay with you?
- Please be assured that information and opinions will be used for research purposes only. The answers you provide will be combined with the feedback we receive from other interviews we're conducting. No one's individual responses will be able to be identified during analysis and reporting.
- As we are going through the interview - I would prefer it if you answered all the questions, but if there is anything you would prefer not to answer or if you have opinions that you would prefer to keep to yourself, then that's fine.
- Do we have any questions before starting the interview?

QUANTITATIVE SECTION

Firstly, I have a few questions about you...

1. Record Gender.....?

CODE	READ (SR)	
01	Male	x
02	Female	

2. How old are you?

CODE	DO NOT READ (SR)	
00	Record age	

3. Who else in your household consumes raw milk?

CODE	DO NOT READ (SR)	
00	Record gender & age	
00	Record gender & age	
00	Record gender & age	
00	Record gender & age	
00	Record gender & age	
00	Record gender & age	

4. What do you do for work? (Industry and occupation). (Especially record if a goat or cow farmer).

CODE	READ (SR)	
01	Record occupation	

5. Including pensions and allowances, what is your household's annual gross income (i.e. before tax) from all sources?

CODE	READ (SR)	
01	Under $40,000	
02	$40,001 - $50,000	
03	$50,001 - $60,000	
04	$60,001 - $70,000	
05	$70,001 - $80,000	
06	$80,001 – $90,000	
07	$90,001 - $100,000	
08	$100,001 or more per year	
97	Don't know	
99	Refused to answer	

6. Record State of residence...

CODE	READ (SR)	
01	NSW	
02	Vic	
03	Tas	
04	Qld	
05	SA	
06	NT	
07	WA	

7. Do you live in a metropolitan or regional location?

CODE	READ (SR)	
01	Metro	
02	Regional	

8. What ethnic group do you identify with? Which part of the world were you born in?

CODE	READ (SR)	
01	Record ethnic origin	

9. How would you rate your general health?

CODE	READ (SR)	
01	Extremely healthy	
02	Of average health	
03	In ill health	

10. **IF IN ILL HEALTH** Record details of any health problems...

CODE		
01		

11. Now thinking about raw milk, do you drink...

CODE	READ (SR)	
01	Raw cow milk	x

02	**Raw goat milk**	

12. How often do you drink raw milk?

CODE	READ (SR)	
01	More than once a day	
02	Once a day	
03	A few time a week	
04	Once a week	
05	Fortnightly	
06	Once a month	
07	Less often	

13. How much raw milk would you drink in an average week? How much raw milk does your household drink in an average week?

CODE	Record personal consumption	Record household consumption
Self		
Other 1		
Other 2		

14. Where do you store raw milk at home?

CODE	(SR)	
01	Refrigerated with other household food stuffs	
02	Refrigerated away from other household food stuffs	
03	Elsewhere (record)	

15. Do you prepare raw milk in any way before drinking?

CODE	(SR)	
01	Yes	
02	No	

16. **IF DO PREPARE** Record preparation method...

CODE	(SR)	
01	Prep method	

17. **IF DO PREPARE** How often do you prepare raw milk before drinking? Is it...

CODE	(SR)	
01	Every time	
02	Most of the time	
03	Some of the time	
04	Occasionally	

18. Apart from drinking, how else do you or members of your household use raw milk?

CODE	(MR)	
01	Cooking	
02	Yoghurt making	
03	Cheese making	
04	Beauty/skin care	

05	**Other - record**	

QUALITATIVE SECTION

1. CONSUMPTION BEHAVIOUR

Discuss purchase of raw milk/method to obtain

Where purchased – organic markets, health food stores, deli, direct from farmer, etc.

Ease to purchase – how easy to find raw milk, distance needed to travel to obtain, etc.

Frequency of purchase

Volume per purchase per occasion

Approximate cost

Discuss frequency of consumption… Differentiate between self and others in household. Pay particular attention to consumption habits of children and elderly.

Why that frequency?

Why not more often?

Why not less often?

When did you start consuming raw milk?

Discuss volume of consumption…

Why that volume?

Discuss purpose of consumption – why consume…

Probe to understand convenience, health benefits, access.

Discuss storage methods…

Why store raw milk in that fashion

If stored in the fridge with other household food stuffs, discuss where in the fridge stored – in the door, on bottom shelf, etc. and why.

Any way that raw milk should not be stored – why?

What is the maximum time you would store raw milk? – Would you store it for more, less or same time as pasteurised milk?

When you purchase/obtain raw cow milk does the provider suggest how long it should be stored? Is there a use by date on the container?

Discuss home treatment (if any) prior to consumption… (ie the treatment they do)

Why treat/not treat

What are the benefits of treatment

Does the milk lose anything through treatment

2. KNOWLEDGE OF RAW MILK

Discuss reasons for consuming raw milk

Why raw milk as opposed to pasteurised milk

Discuss benefits of drinking raw milk

Probe on taste benefits, ease of access/convenience, health benefits, nutritional benefits

Do you think pasteurised milk is nutritionally different to raw milk?

Discuss risks of drinking raw milk

Probe on health or nutritional risks

Whether think raw milk has ever made them sick – ever had gastro, diarrhoea, fever after drinking raw milk – cause and effect factor

Ever had these symptoms a week after drinking raw milk

Aware of bacterial/germ infections in raw milk – good bacteria v's bad bacteria, awareness of how bacteria grow, etc.

Whether do anything to reduce risks of raw milk – storage methods, preparation

Discuss information sources regarding the benefits and risks of drinking raw milk

Probe on word-of-mouth sources, medical/health professionals, independent research, advocate associations

Probe on trustworthy sources – what makes them trustworthy

3. MOTIVATIONS

How started drinking raw milk

Who influenced consumption – family, cultural driver, health advice, etc.

Any worries or nervousness when started

What about raw milk encourages continued use

Probe on taste, availability, health or nutritional benefits

If recommending raw milk to someone else, how would you encourage someone else to try it?

4. CLOSE

Obtain name and address details for incentive purposes.

That's the end of the discussion. As this is market research, it is carried out in compliance with the Privacy Act and the information you provided will be used only for research purposes.

Thank you for your time. Just to remind you, I'm from Colmar Brunton Social Research. Please contact me on 02 6249 8566 if you have any questions about the research.

6.2 Revised discussion guide

Hello, my name is [RESEARCHER] from Colmar Brunton Social Research.

PRIVACT ACT REQUIREMENTS

- The purpose of this interview is to understand consumption of raw cow or goat milk in Australia. From your perspective we are interested in understanding your purchase and usage patterns of raw milk, including benefits motivations of consumption. There are no right or wrong answers, we're just interested in your views and opinions.

- This interview will take approximately 1 hour. Is that okay with you?

- Please be assured that information and opinions will be used for research purposes only. The answers you provide will be combined with the feedback we receive from other interviews we're conducting. No one's individual responses will be able to be identified during analysis and reporting.

- As we are going through the interview - I would prefer it if you answered all the questions, but if there is anything you would prefer not to answer or if you have opinions that you would prefer to keep to yourself, then that's fine.

- Do we have any questions before starting the interview?

QUALITATIVE SECTION

5. FIRST EXPERIENCES

I'd like you to think back to the first time you chose to consume raw milk...can you tell me a bit about how that came about? *USE FOLLOWING PROBES ONLY IF NEEDED*

WHEN / HOW OLD

SITUATION / TRIGGER

GENERAL MOTIVATIONS / BENEFITS EXPECTED

NERVOUSENESS / NEGATIVES

PEOPLE / CULTURAL INFLUENCES / PAST EXPEREINCES

6. CURRENT CONSUPMTION

How often do you consume raw milk now?

Differentiate between self and others in household. Pay particular attention to consumption habits of children and elderly.

How come you have it that often?

How much raw milk do you consume?

How come you have that particular amount?

Do you consume only raw milk, or a combination of raw milk and pasteurised milk?

What do you use raw milk / each type of milk for?

7. PURCHASE BEHAVIOUR

Where do you get raw milk from?

organic markets, health food stores, deli, direct from farmer, etc.

How come you get it from _____?

ie: why not from a farmer? Or why not a commercially available product?

How did you find out that you could get raw milk from _____?

IF NOT BUYING COMMERCIALLY AVAILABLE MILK:

What made you choose this particular source? (ie: this particular dairy etc)

Probe for what evidence or proof they looked at – eg: how can you tell it is clean?

How easy is it get?

how easy to find raw milk, distance needed to travel to obtain, etc.

How often do you get raw milk?

How come?

How much do you get per occasion?

How come?

Approximately what does it cost?

IF DIRECT FROM FARM OR DAIRY:

Do you know how long it is between when the milk is produced and when you get it?

How is the milk stored until you get it? (eg: chilled; closed containers etc)

What containers are used to transport the raw milk?

What materials are they made of? Who supplies them?

8. STORAGE BEHAVIOUR

Where is the raw milk stored in your home?

Why store raw milk in that fashion

If stored in the fridge with other household food stuffs: where in the fridge stored – in the door, on bottom shelf, etc. and why.

What is the milk stored in at home?

Are the containers reused? And if so: How are they cleaned?

Are there any ways that raw milk should not be stored? How come?

What is the maximum time you would store raw milk? – Would you store it for more, less or same time as pasteurised milk?

When you purchase/obtain raw cow milk does the provider suggest how long it should be stored? Is there a use by date on the container?

9. MOTIVATIONS

What are the reasons you consume raw milk as opposed to pasteurised milk? OR
What are the reasons you use one type of milk over the other?
Discuss benefits of drinking raw milk

Probe on taste benefits, convenience, health benefits, nutritional benefits

Benefits of raw milk	Benefits of pasteurised milk

What about raw milk encourages your continued use

Probe on taste, availability, health or nutritional benefits

Do you think pasteurised milk is nutritionally different to raw milk?

Do you treat the milk in any way prior to consumption?

How come?

What are the benefits of treatment

Does the milk lose anything through treatment

10. KNOWLEDGE OF RAW MILK

Are your aware of any risks of drinking raw milk

Probe on health or nutritional risks

What do you know about bacteria in raw milk?

Aware of bacterial/germ infections in raw milk – good bacteria v's bad bacteria, awareness of how bacteria grow, etc.

Do you do anything to reduce risks of raw milk?

storage methods, preparation

What information sources have you used regarding the benefits and risks of drinking raw milk?

Probe on word-of-mouth sources, medical/health professionals, independent research, advocate associations

Who are the most trustworthy sources of information about raw milk?

How come?

QUANTITATIVE SECTION

To finish off, I just need to clarify a few details...

19. Now thinking about raw milk, do you drink...

CODE	**READ (SR)**	
01	Raw cow milk	
02	Raw goat milk	

20. How often do you drink raw milk?

CODE	**READ (SR)**	
01	More than once a day	
02	Once a day	
03	A few time a week	
04	Once a week	
05	Fortnightly	
06	Once a month	
07	Less often	

21. How much raw milk would you drink in an average week? How much raw milk does your household drink in an average week?

CODE	Record personal consumption	Record household consumption
Self		
Other 1		
Other 2		

22. Where do you store raw milk at home?

CODE	**(SR)**	
01	Refrigerated with other household food stuffs	
02	Refrigerated away from other household food stuffs	
03	Elsewhere (record)	

23. Do you prepare raw milk in any way before drinking?

CODE	**(SR)**	
01	Yes	
02	No	

24. **IF DO PREPARE** Record preparation method...

CODE	**(SR)**	
01	Prep method	

25. **IF DO PREPARE** How often do you prepare raw milk before drinking? Is it...

CODE	**(SR)**	
01	Every time	
02	Most of the time	
03	Some of the time	
04	Occasionally	

26. Apart from drinking, how else do you or members of your household use raw milk?

CODE	**(MR)**	
01	Cooking	
02	Yoghurt making	
03	Cheese making	
04	Beauty/skin care	
05	Other - record	

27. Record Gender.....?

CODE	**READ (SR)**	
01	Male	**x**
02	Female	

28. How old are you?

CODE	**DO NOT READ (SR)**	
00	Record age	

29. Who else in your household consumes raw milk?

CODE	DO NOT READ (SR)	
00	Record gender & age	
00	Record gender & age	
00	Record gender & age	
00	Record gender & age	
00	Record gender & age	
00	Record gender & age	

30. What do you do for work? (Industry and occupation). (Especially record if a goat or cow farmer).

CODE	READ (SR)	
01	Record occupation	

31. Including pensions and allowances, what is your household's annual gross income (i.e. before tax) from all sources?

CODE	READ (SR)	
01	Under $40,000	
02	$40,001 - $50,000	
03	$50,001 - $60,000	
04	$60,001 - $70,000	
05	$70,001 - $80,000	
06	$80,001 – $90,000	
07	$90,001 - $100,000	
08	$100,001 or more per year	
97	Don't know	
99	Refused to answer	

Record State of residence...

CODE	READ (SR)	
01	NSW	
02	Vic	
03	Tas	
04	Qld	
05	SA	
06	NT	
07	WA	

32. Do you live in a metropolitan or regional location?

CODE	READ (SR)	
01	Metro	
02	Regional	

33. What ethnic group do you identify with? Which part of the world were you born in?

CODE	READ (SR)	
01	Record ethnic origin	

34. How would you rate your general health?

CODE	READ (SR)	
01	Extremely healthy	
02	Of average health	
03	In ill health	

35. **IF IN ILL HEALTH** Record details of any health problems...

CLOSE

Obtain name and address details for incentive purposes.

That's the end of the discussion. As this is market research, it is carried out in compliance with the Privacy Act and the information you provided will be used only for research purposes. **If our discussion has raised any questions or concerns for you about raw milk please consult your health care professional.**
Thank you for your time. Just to remind you, I'm from Colmar Brunton Social Research. Please contact me on 02 6249 8566 if you have any questions about the research.

This document takes into account the particular instructions and requirements of our Client. It is not intended for and should not be relied upon by any third party and no responsibility is undertaken to any third party.

Colmar Brunton Social Research

PO Box 2212

CANBERRA ACT 2601

Ph. (02) 6249 8566

FAX. (02) 6249 8588

ACN NO: 090 919 378

ABN NO: 63 090 919 378