

# **Analysis of the competitive threat to Australian fresh avocado market from processed avocado products**

Kent Fanning  
The Department of Agriculture, Fisheries and  
Forestry, QLD

Project Number: AV11006

## **AV11006**

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**AV11006 (4 May 2012)**

**Analysis of the competitive threat to Australian fresh  
avocado markets from processed avocado products**

**Kent Fanning et al**

**Department of Agriculture, Fisheries and Forestry**

## AV11006

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### Purpose of report:

This report provides a description of

- fresh and processed avocado use in Australia,
- consumer attitudes to these products, and
- potential strategies to minimize the impact posed by imported processed avocado on Australian fresh avocado sales.

### Funding:

This project has been funded by HAL using the avocado industry levy and matched funds from the Australian government, with in-kind contributions from the Queensland Department of Agriculture, Fisheries and Forestry (formerly Department of Employment, Economic Development and Innovation) and Simpson Farms.



Horticulture Australia



**Queensland  
Government**

**Date:** May 2012

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## **Media Summary**

The project 'Analysis of the competitive threat to Australian fresh avocado markets from processed avocado products' was undertaken by the Queensland Department of Agriculture, Fisheries and Forestry in conjunction with Simpson Farms. This project was formulated in response to both the current importation of processed avocado products and the threat of large volumes of South American processed product entering the Australian market in the coming years.

The use of fresh avocado continues to remain strong and grow in both retail and food service markets. The current impact of imported processed avocado is small but the potential future impact could be high in both retail and food service markets. The best strategy for competing with imported processed products is increasing consistent supply of quality and suitability ripened Australian avocado to retain and grow these markets.

Fresh fruit generally have a price advantage over processed products on a \$/kg of product flesh basis. The gap is smaller when the true cost of labour, preparation, wastage, handling and storage are included in the cost/kg of fresh fruit pulp. Cafes and quick service restaurants are the primary domains where processed products (both Australian made and imported) become attractive due to these attributes and are subsequently utilised significantly.

Restaurants, clubs, pubs and hotels have been the key markets identified (by the HAL coordinated food service initiatives) to retain and increase use of fresh avocado, in the food service sector. These sectors value fresh avocado and the various training and promotion activities appear to be working well in developing its use. The current quality and ripeness of avocado being delivered appears to be generally good. However there is scope to better understand and strengthen the supply chain by including providers in future survey and promotion work.

A gap exists in both retail and food service markets for a whole avocado alternative that satisfies the need for a ready ripe, high quality, convenience format such as a fresh cut avocado product. Such a product could directly block imported product as it could only be Australian made given the relatively short shelf life. However the size of markets and whether products can be made and sold profitably are two key questions that need to be answered.

## Technical Summary

In recent years the US food market has seen the introduction of new forms of processed avocado products for both the retail and food service markets. Many of these products are grown and processed in Mexico using large processing operations and have begun arriving in both the Australian foodservice and retail markets. The expansion of avocado production in both Chile and Peru signifies a potential increase in processed avocado imports to the Australian market, representing a threat to the Australian fresh avocado market. The current and potential impact for both food service and retail sales of fresh avocado are considered in this report.

The aim of this study was to:

- understand the impact of current or potential imports of minimally processed avocado products on the market for fresh Australian whole avocado, and
- assess the market opportunities and challenges of competing with imported products for existing consumer and food service markets and potential new markets.

This was undertaken by:

- a search of the Innova Database
- assessment of commercially available products
- review of literature on avocado processing
- interviews across the various supply chains
- development of fresh cut prototype products for consumer research and appraisal from fresh cut industry experts
- conducting consumer focus groups and choice analysis in Brisbane, Sydney and Melbourne.

In brief, the use of fresh avocado continues to remain strong and grow in both retail (85% of total fresh Australian avocado sales) and food service markets (10% of total fresh Australian avocado sales). The current impact of imported processed avocado is small but the potential future impact could be high in both retail and food service markets. The best primary strategy for competing with imported products is increasing consistent supply of quality and suitability ripened fresh Australian avocado to retain and grow these markets. Secondary strategies include promoting and supporting Australian processed products, where appropriate, as a secondary block to imported processed product.

Restaurants, clubs, pubs and hotels are the key markets that have been identified by the HAL coordinated food service initiatives to retain and increase use of fresh avocado. Fresh fruit is valued in the menus of these establishments and processed products aren't viewed as substitutable for fresh. The current quality and ripeness of avocado being delivered appears to be good. However there is scope to better understand, connect and strengthen the supply chain by including providers in future survey and promotion work, formulating databases of information of suppliers by region and gathering information on volumes supplied/used. It is also recommended that future food service menu surveys provide information on the use of fresh versus processed product.

Fresh fruit generally have a price advantage over processed products on a \$/kg of product flesh basis. The gap is smaller when the true cost of labour, preparation, wastage, handling and storage are included in the cost of fresh fruit pulp. Cafes and quick service restaurants are the primary domains where processed products (both

Australian made and imported) become attractive due to these attributes and are subsequently utilised significantly. To assist competition with imported product in this segment, a level of support to Australian grown processed products is warranted.

Results from the consumer research show that Australian whole avocados were the overall preference for participants and fresh avocado use continues to remain strong in the retail market. However, local and imported processed avocado products hold appeal for some segments of the market.

The strongest incentive for purchasing processed avocado product in general is to avoid dissatisfaction with low quality avocados and to provide the convenience of a ripe, ready to use product. Price-sensitive consumers are motivated to trial imported processed avocado if available at a lower cost to whole Australian avocados.

Barriers to consumption of imported processed avocados are:

- perceived price
- country of origin
- perceptions of freshness
- environmental concerns
- perceived change in taste and texture prior to trial

Results suggest several messages with which to position Australian avocados against imported processed avocado products:

- Australian avocados are 'on your doorstep'
- Australian avocados – 'pure food for kids'
- Australian avocados are security for our economy and for Australian farmers
- Fresh is better, for taste, texture and nutrition

A gap exists for a whole avocado alternative that satisfies the need for a ready ripe, high quality, convenience format such as a fresh cut avocado product. Such a product could only be Australian made given the relatively short shelf life. However the size of markets and whether products can be made and sold profitably are two key questions that need to be answered.



## Introduction

In recent years the US food market, particularly, has seen the introduction of a variety of new forms of processed avocado products for both the retail and food service markets. Many of these products are grown and processed in Mexico using large processing operations and have begun arriving in both the Australian foodservice and retail markets. However the expansion of avocado production in both Chile and Peru, over the coming years, potentially means that there will be significantly more processed product trying to get into the Australian market. These products represent a threat to the use of Australian grown fresh avocado. Whilst the use of processed avocado products is probably more significant in food service, the current and potential impact for both food service and retail sales of fresh avocado were considered in this report.

The aim of this study was to:

- Understand the impact of current or potential imports of minimally processed avocado products on the market for fresh Australian whole avocado, and
- assess the market opportunities and challenges of competing with imported products for existing consumer and food service markets and potential new markets.

This was undertaken by:

- extensive searching of the Innova Database to source the variety of available products internationally, together with key product information
- detailed assessment of commercially available products using Simpson Farm's extensive knowledge of both Australian and international fresh and processed avocado markets
- review of literature on avocado processing
- interviews with those involved in the current HAL coordinated avocado food service survey, marketing and promotion initiatives
- interview with Avocados Australia regarding the quality survey and retail training initiatives
- development of fresh cut prototype products for use in focus groups and choice analysis, as well as market appraisal from fresh cut industry experts
- conducting consumer focus groups and fielding internet choice analysis surveys in Brisbane, Sydney and Melbourne.

## **Fresh avocado use in Australia**

The following breakdown shows the split of fresh avocado sales in 2010 (Avocados Australia, 2011):

- Supermarket 51%
- Independents 34%
- food service 10% (estimate)
- export 4%
- other 1%.

(Australian fresh avocado production 2010: 46577 tonne, 2011: 52728 tonne, 2012 [predicted]: 66521 tonne. Source: Avocados Australia)

## **Use of fresh avocado in food service**

Two recent surveys of avocado use in Australian food service menus have been undertaken in May 2009 (StollzNow Research, 2009) and November 2011 (StollzNow Research, 2012). 1101 and 1082 food service outlets were surveyed, respectively, to detail the use of avocado in Australian food service. In 2009, the outlets were split into five groups – restaurants, cafes, hotels, pubs, clubs. Cafes were found to be the heaviest users with 83% serving avocado in their meals and an average of 2.8 avocado meals on the menu. 50% of restaurants used avocado with an average of 1.9 meals, 60% of hotels used avocado with an average of 1.7 meals, 61% of pubs used avocado with an average of 1.9, and 58% of clubs used avocado with an average of 2.0 meals. Along with cafes being heavy users of avocados, they were also identified as the group for which there was the heaviest incentive to source cheaper products. Anecdotally, some cafes were using powdered avocado that was reconstituted prior to use.

In 2011 cafes were excluded from the survey and the outlets were split into four groups – hotels, pubs, clubs and restaurants. 61% of food service outlets (65% in 2009) were using avocado in their meals. Overall, the most popular meals where avocado was used were salad (18%), chicken (14%), other way (10%) and sandwiches/rolls (10%). In the hotels surveyed, 54% served avocado with an average of 1.8 meals using avocado on the menu. The top uses were in salad (20%), other way (15%), on sandwiches/rolls (10%), with chicken (9%), with fish (8%), with burger (7%), and with other seafood (7%). In the pubs, 57% served avocados with an average of 2.1 meals using avocado on the menu. The top uses were in salad (22%), with chicken (16%), nachos with guacamole/avocado (10%), on sandwiches/rolls (9%), other way (8%) and on burger (8%). 74% of the clubs served avocado with an average of 1.8 meals on menu. The top uses were with chicken (19%), on sandwiches/rolls (12%), nachos with guacamole/avocado (11%), on burger (7%), and with other seafood (6%). Of the restaurants surveyed 58% served avocados. There were an average of 2.1 meals on menu with the top uses being other way (19%), in salad (17%), with other seafood (9%), with a hot breakfast dish (8%), on sand/rolls (6%), with fish (5%), and pasta (hot, not a salad) (5%). The supply of avocados were generally very good (29%) or good (52%), with only 8% of the outlets rating the supply as poor (11% said they didn't know). Inconsistent quality/too much seasonal variation and not ripe/too green accounted for 71% and 22% of the dissatisfaction with the fruit. Generation of a confidential list of the major proveedores supplying this market and collection of volume sales may be useful to help track any ground being lost to processed products.

The foodservice marketing campaign, coordinated through HAL, currently includes chef training masterclasses and chef training classes for commercial caterers and TAFEs. The overall objectives of the campaign are to: get avocados on menu; encourage multiple and creative usage; increase volume usage; encourage use year

round. There appears to be very positive results from the work so far and the use of avocado is being grown through the various initiatives. Similar to the data collected from the food service menu survey, the supply of avocado has been rated as very good or good by 100% of chefs in 3 out of 4 training masterclasses in 2012, with only 12% rating supply as poor in one masterclass.

### **Use of fresh avocado by retail consumers**

The consumer research undertaken in 2009 by Bread & Butter (Herron, 2009) showed the following points:

- Taste is top driver of purchase. Health aspects also rate highly.
- Purchase triggers: price (41%), quality (35%), feeling like avocado that day (31%), buying for a specific meal (28%).
- Barriers: too expensive (47%), not everyone in the house likes them (32%), difficult to store (19%), poor quality (18%), don't have enough ideas (18%), have had too many problems with ripeness (17%).
- Factors most likely to increase purchasing: cheaper (37%), ripe enough to use straight away (11%), more ideas for recipes (10%), knew how to store (7%), knew how to pick good quality (7%).
- ways avocado was used in the last month: salad (75%), spread in sandwich (65%), sliced in sandwich (57%), made into a dip (38%), eaten on its own (38%), on crackers/crisp bread (28%), on nachos (25%), in Mexican dish (18%), on platter with other nibbles (24%), in sushi (15%), with prawns/seafood cocktail (11%), risotto/pasta (9%), on baked potato (7%), drink/smoothie/soup (4%).
- 81% used avocados within 3 days of purchase
- reasons for throwing out fruit: went off before I could use it (49%), too bruised (30%), over ripe (24%), woody/stringy (23%).
- Formats avocado are ever bought in: whole (83%), dip/guacamole (51%), restaurant (43%), in sandwich from shop (39%), spread in sandwich from shop (28%).

The three key criteria for consumers in terms of quality and ripeness are:

- Dry matter of Hass > 23% and dry matter of Shepard > 21%
- ripeness levels be ripe to soft ripe (0.65 to 0.45 kilogram force)
- damage to flesh be less than 10% (Jaeger, 2008; Gamble et al, 2010).

Furthermore, 85% of consumers want fruit they can use immediately (Avocados Australia, 2012).

## **Processed avocado product overview**

### **Processed products**

From searches of the Innova Database, general web search, project team review of products, and interviews of the supply chain the following compilation of the major types of processed avocado product, listed below, was generated. Please see Appendix 1 for specific examples of the various products. Indicated uses were taken from commercial product packaging/information sheets/supplier interview.

#### **Product: Frozen halves**

Description: peeled and deseeded.

Ingredients: some have water, salt, citric and ascorbic acid added. Some state no ingredients.

Package: individually packed for retail

Storage: frozen

Indicated use(s): 'in salads, sandwiches and burgers'

Unit price: food service - \$12-14/kg. retail - \$16.53/kg.

Supplied by: Verfruco (Mexico), Fine Mexican Food Products (Peruvian product), Magnissis Pty Ltd (Australian company importing product from Mexico) etc.

#### **Product: Frozen slices**

Description: peeled, deseeded and sliced.

Ingredients: treated with ascorbic and citric acid.

Package: frozen together in vacuum pack

Storage: frozen

Indicated use(s): on pizza and cooked product offerings.

Unit price: food service (exclusively) - \$15-18/kg

Supplied by: Verfruco (Mexican), Simpson Farms (Australia) etc.

#### **Product: Frozen chunks**

Description: peeled, deseeded, sliced and chopped

Manufacturing process: peeled, deseeded and chopped and individually quick frozen (IQF)

Package: retail – resealable foil pouch.

Storage: frozen

Unit price: retail - South Africa, \$18.42/kg (US)

Supplied by: Verfruco (Mexican), Woolworths (South Africa)

#### **Product: Pulp**

Description: both flavoured and non-flavoured product made using standard heat treatment or high pressure pasteurization (HPP), which can be smooth through to chunky.

Ingredients: Very high percentage of avocado (90%+). Heat treated products have salt, gums, citric acid, ascorbic acid added to assist preservation/non-browning.

Package: food service - vacuum sealed bags/packs, plastic tubs, little sachets for individual servings. Retail – plastic wrapped trays/packs.

Storage: frozen or refrigerated.

Indicated use(s): 'it is ideal for wraps, burritos and baquettes and is a great alternative to fresh avocado in most dishes' (food service chunky product). 'as a starter for the production of avocado based dips, spreads, garnishes and cooking additives.... a food ingredient product manufactured to provide chefs, caterers and industrial dip manufacturers with the ideal avocado base' (food service non-flavoured pulp). 'slice and push up your favourite salads' (retail HPP firm product). 'delicious on toast, as a healthy alternative to your regular spread, or serve in salads, wraps or as a base for you own dips' (retail avocado spread).

Unit price: industrial smooth pulp product range from \$6-10/kg; food service smooth pulp products range from \$10-14/kg; industrial HPP chunky pulp products \$5-10/kg; food service HPP chunky pulp products \$12-16/kg; retail HPP products range from \$18.95 - \$28/kg.

Supplied by: Mexican Fine Food Products (Mexican), Heinz (Mexican), Calavo (US/Mexican), Fresherized Foods (US/Mexico), Simpson Farms (Australian), NewFresh Foods (Australian), Fressure Foods (New Zealand) are the major suppliers.

### **Product: Guacamole**

Description: flavoured products made using heat treatment or HPP.

Ingredients: Generally these products have a very high percentage of avocado (90%+) but there are a few retail products with lower content (50%) that have cream cheese as well. Combination of tomato, onion, jalapenos, chilli, salt, coriander, garlic, lemon juice concentrate, ascorbic acid, citric acid, gums, potassium sorbate are present.

Package: food service - vacuum sealed bags/packs, plastic tubs, little sachets for individual servings. Retail – plastic wrapped trays/packs.

Storage: Frozen or refrigerated.

Indicated use(s): 'ideal for nachos, as a sandwich filler, in fajitas, as a tasty dip' (retail HPP product). 'makes sandwiches and wraps easy' (retail HPP product). 'ideal with burritos, on a burger, in tacos, with salmon or as a fiery addition to pizza' (retail HPP product).

Unit price: food service heat treated products range from \$10-14/kg. retail HPP products range from \$18.95 - \$28/kg.

Supplied by: Mexican Fine Food Products (Mexican), Heinz (Mexican), Calavo (US/Mexican), Fresherized Foods (US/Mexico), Simpson Farms (Australian), NewFresh Foods (Australian), Fressure Foods (New Zealand) etc.

### **Product: Powder**

Description: Freeze dried powder that is reconstituted with water for use.

Indicated use(s): soups, chowders, pasta dishes.

### **Product: Avocado dips (other than guacamoles)**

Description: Avocado content is usually only 8-12% in these products, with cream cheese being the primary ingredient.

Indicated use(s): as a dip

Unit price: retail \$17.7/kg

Supplied by: retail – Chris', Black Swan, CopperPot, Coles brand.

In general, the range of avocado processed products mirrors the following outline of how fresh avocado is prepared for its many uses:

- Whole fresh avocados are cut in half, deseeded and then either left as a half, sliced/diced or mashed.
- The halved product is eaten straight from the peel or peel is removed and used as a half with addition of garnish.
- The sliced/diced product is then utilised in salads, as a side, filling in sandwich/roll/wrap, as topping/garnish, in sushi, mixed through pasta/rice.
- The mashed product is utilised as a spread, filling, base (for guacamole, dips).

## **Current availability and use of processed avocado products in Australian food service**

Processed avocado products are widely used in the Australian Food Service Industry. These products are predominantly frozen thaw back products. Processed avocado products are sourced globally by food service distribution companies based in Australia. These products originate mainly from processors in the following countries; Australia, New Zealand, Mexico, Peru, Chile and South Africa.

Avocado is seen as a healthy addition to menu offerings within all of the major Food Service Market segments including, industrial, catering, corporate, QSR, Fast Food, Restaurant and deli/sandwich. The category has seen steady sales growth due to an increased demand by end use consumers demanding more healthy alternatives and product market development efforts by producers and distribution partners to supply cost effective products into the market which are more convenient and easy to use than fresh product offerings. The main products used include, frozen chunky pulps, smooth pulps, finished products such as guacamoles and to a lesser extent frozen halves and frozen slices. Although the 2009 food service menu survey received anecdotal use of powder this appears to be not widespread. Australian made product is currently available for all these formats except for powdered.

Frozen slices are used by pizza stores, where slices are placed on top prior to cooking. They are not used as a thaw back product. Pulp and guacamole products are thought to be the most used products being utilised particularly in cafes. The chunkier pulp products are used as fillings and spreads. The smoother pulp products are used as spreads and avocado base for dips etc. Heinz is one of the major players with their Mexican-made Avocado Pulp product. Some of the processed product coming into Australia is used in quick service restaurants (eg., Subway who have existing supplier arrangement of subsidized/managed product from Mexico and McDonalds who are supplied by Heinz). Major food service distributors (including Bidvest, PFD, Countrywide, NAFDA) have a range of guacamole, pulp and salsa products for distribution, which are a combination of Australian made and imported.

Stewart White highlighted the fact that processed products are the domain of cafes and café suppliers. This is a food service segment that has been very difficult to engage with in the food service training initiatives. Similarly Neil Stollznow signaled these facts resulting in cafes not being included in the 2011 food service menu survey.

## **Current availability of processed avocado products in Australian retail**

The processed avocado products available in the Australian retail setting include frozen halves, firm and chunky HPP pulp product, guacamoles, and avocado dips (8-12% avocado with cream cheese base).

The 'Simply Avocado' frozen halves product (imported from Mexico) is found in the frozen section of Woolworths (see photo of packaging and product on page 21). The

range of Avo Fresh (Australian) HPP products, sold through Woolworths, include the squeeze bottle 'Soft Avocado' spread, 'chunky avocado', and 'firm avocado' (see Appendix 1). Fressure Foods (New Zealand product), sold through Coles, have a HPP 'Avocado Spread' product as well as HPP guacamoles (see Appendix 1). There are also Coles brand HPP guacamoles (imported from Mexico) (see Appendix 1). There are several thermally treated guacamoles (with avocado content ~50%), with some brands utilising Australian avocado pulp product. Similarly in the range of avocado dips, where cream cheese is the primary ingredient, Australian avocado pulp is used in some products.

## **Fresh cut products**

Fresh-cut fruit consumption is increasing due to the rising public demand for convenience and awareness of fresh-cut fruit's health benefits. Sales of fresh-cut products continue to grow, in overseas markets, through consumers' increasing willingness to pay for prepared, ready-to-eat or ready to-use fresh produce (Rico *et al.*, 2007). Fresh-cut avocado is a product that could be a substitute for fresh whole avocado in uses such as salads where retaining texture is important. A limited number of products, in retail fresh salad/meals, were found in the Innova Database (see Appendix 1). If fresh cut avocado products are suitable and viable for production and distribution in Australia, there is an advantage for local production due to the limited shelf life and difficult international distribution needed for such a product. To determine opportunities for fresh cut products, several product prototypes were developed (as outlined below) for use in the consumer focus groups and choice analysis as well as assessment by industry experts.

The following summary is a review of the current, pertinent literature that may assist the development of fresh cut products.

Control of enzymatic browning during processing and storage is important to preserve the original colour of fruits. Several methods have been used to attain the inhibition of polyphenol oxidase (PPO) activity in fruits and vegetables including chemicals (Janovitz-Klapp *et al.*, 1990; Lozano *et al.*, 1994; Fujita *et al.*, 1995), pH adjustment (Wesche-Ebeling & Montgomery, 1990; Siddiq *et al.*, 1992), exclusion of oxygen (Paulson *et al.*, 1980), refrigeration (Lozano *et al.*, 1994) and thermal treatments (Vamos-Vigyazo, 1981). The technology of combined methods is potentially a preservation procedure of choice for avocado products. Soliva-Fortuny *et al.* (2001) observed that the use of combined methods clearly maintained the initial colour of avocado puree. They reported that EDTA, added as an antioxidant agent, maintained the colour of the puree better than ascorbic acid. Nitrogen and vacuum atmospheres were the most effective in the inhibition of PPO activity, whereas air atmospheres gave high activity values, leading to higher colour changes. The presence of sorbic acid as an antimicrobial agent had a low effect on the browning of avocado puree.

In addition to browning, the product texture is of primary concern to the consumer as an indicator of its quality. Fresh-cut avocado undergoes considerable softening during storage due to the modifications in pectic substances caused by an increase in the fruit metabolism.

The microbiological quality of fresh-cut fruits and vegetables is particularly critical given their exposure during the cutting process, which can cause contamination by bacteria, fungi, and yeast (Raybaudi-Massilia *et al.*, 2009). Food safety and quality continue to be a basic requirement of any modern food system.

Intense light pulses (ILP) have received considerable attention, after its approval by the U.S. Food and Drug Administration (FDA) in 1996, as a decontamination method for food or food surfaces. Ramos-Villarroel et al. investigated (2011a) the impact of ILP on inactivation of *Listeria innocua* and *Escherichia coli* as well as quality changes in fresh-cut avocado. The growth of *E. coli* and *L. innocua* was more effectively inhibited when increasing treatment intensity. Oxygen concentrations were significantly reduced, whereas CO<sub>2</sub> and ethanol concentrations increased due to product respiration. Ethylene production was decreased by the effect of ILP treatments. The use of 30 pulses affected the colour and firmness of fresh-cut avocado, causing browning and softening.

The effect of modified atmospheres (MA) on the rate of quality change in 'Hass' avocado was studied by Hertog et al. (2003). Gas exchange rates and quality changes of avocados stored at 7°C in 32 different MA conditions were generated using a flow-through system. An integrated modelling approach was used to link rates of quality loss to the rate of gas exchange. This revealed a close quantitative relationship between the gas exchange of 'Hass' avocado fruit and weight loss, colour change as well as softening. High CO<sub>2</sub> lowered the respiratory quotient of avocado.

When tissue integrity is damaged as a consequence of minimal processing operations, wounding-induced browning and deteriorative processes are triggered and can not be effectively prevent by MA packaging (MAP) system along. Polymeric films used in MAP have some limitations because of their structure and permeation characteristics. They may promote water loss resulting in texture changes, translucency and/or surface dehydration. They can even increase the formation of water condensates that favour microbiological proliferation. Traditional MAP atmospheres are not sufficient to ensure safety and achieve high-quality products. Combination of MAP systems with edible coatings can be a feasible way of improving microbial stability and quality of fresh-cut fruits and vegetables, thus extending their shelf-life.

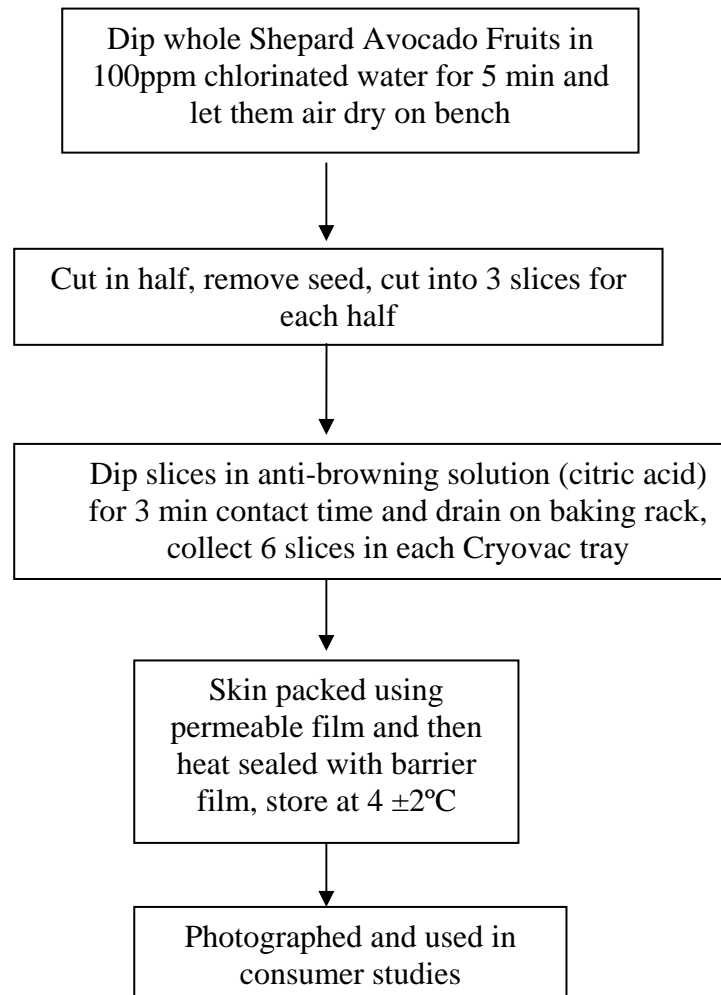
Ramos-Villarroel et al investigated (2011b) the effect of anti-browning compounds on the colour and firmness of fresh-cut avocado treated with intense ILP, as well as their impact on the survival of *Listeria innocua*. They found dipping solutions containing 2% (w/v) L-cysteine without ascorbic acid and combined with 1% (w/v) citric acid and 1% w/v calcium lactate most effectively preserved the initial colour and texture of ILP-treated fresh-cut avocado. Their results also showed ILP treatments could cause a reduction of more than 3 log cycles in the populations of *L. innocua* inoculated on fresh-cut avocado. Log reduction levels increased when anti-browning agents were combined with ILP treatments. They concluded the use of quality-stabilizing agents is a good option to guarantee both the microbiological safety of fresh-cut avocado treated with ILP as well as to improve its physical and chemical quality.



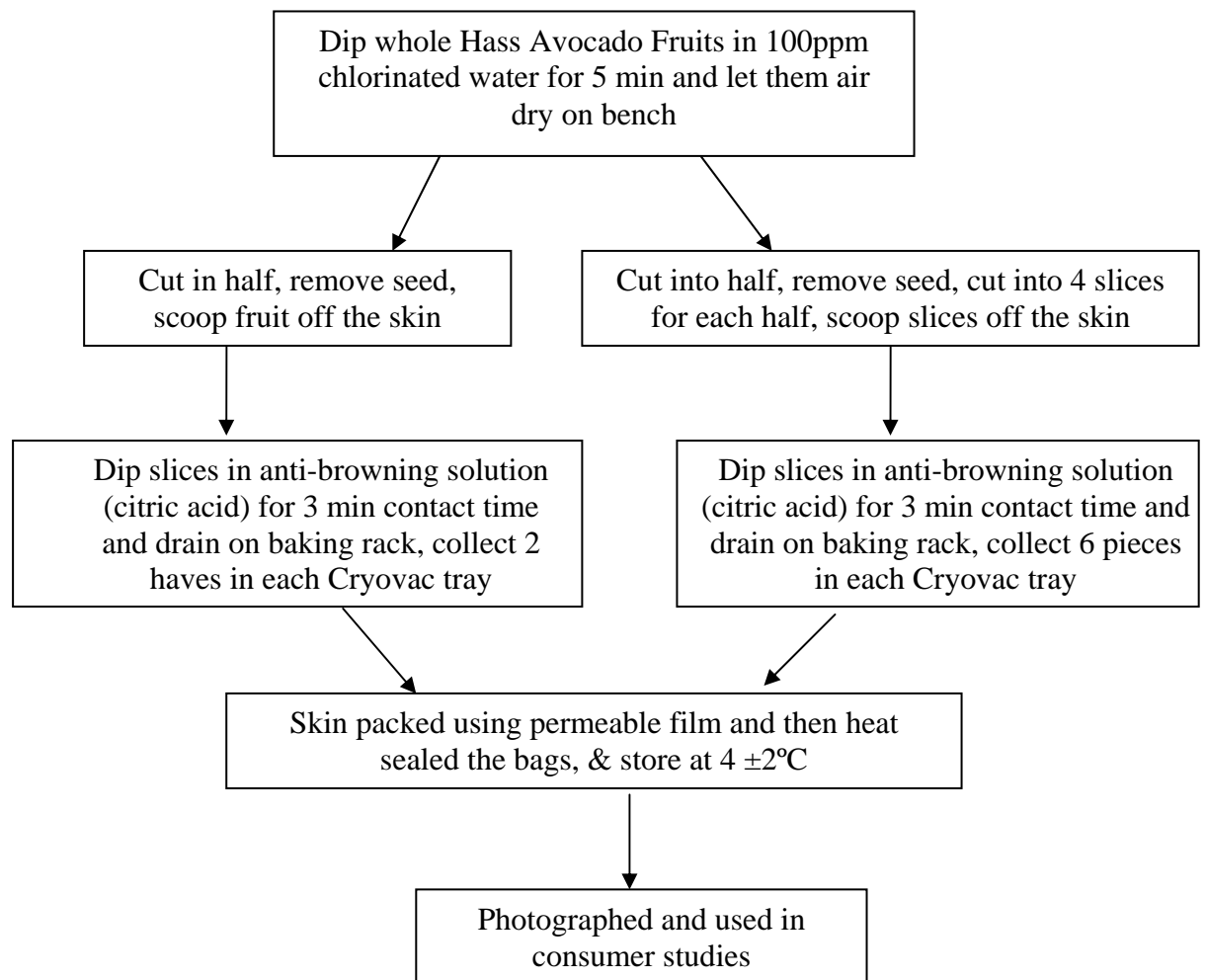
### Prototype fresh-cut products for focus groups

All cutting boards, knives, bowls, and containers were sanitised with a commercial sanitiser. Sanitation solution of 100 ppm chlorine was prepared.

1. Australian Shepard avocados were purchased from retail store in Brisbane. They were processed as per following protocol:



2. Australian Hass avocados were purchased from fruit shop in Toowong. They were processed as following protocol:



# Consumer Research

## Aims

The aim of this section of the project was to provide consumer insights to inform:

- the likely impact of imported processed avocado products on the Australian fresh avocado retail market, and,
- how best to position Australian avocados against processed products.

Discussions with Simpson Farms led to several related points of investigation. These included the context in which consumers would purchase processed avocado products, a segmentation of consumers, values related to whole and processed avocados, understanding consumer perceptions of fresh avocado and the relationship between preparation effort and buying behaviours.

## Samples

Fresh cut samples were prepared as outlined earlier (Appendix 2). The following commercial samples, representing the variety of processed avocado products available in the Australian retail setting, were purchased and used in the focus groups:

- Simply Avocado Frozen Halves (page 21),
- Fressure Foods All Natural Spicy Guacamole (page 45),
- Coles Spicy Guacamole (page 46),
- Avo Fresh Spicy Soft Avocado (page 47),
- Avo Fresh Spicy Chunky Avocado (page 48),
- Avo Fresh Seasoned Firm Avocado (page 49),
- Coles Avocado Dip (page 52).

## Method

The use of focus groups in consumer studies is a common method, in part because of their flexibility, but also as an appropriate means to understand consumer attitudes, behaviours and motivations (Flick, 1998; Schindler, 1992). Fitzpatrick (1997) considered focus groups particularly appropriate for concept testing and concept refinement within the new product development process. Although focus groups cannot be extrapolated to the general population, they can provide a holistic view of the context under study when used in a triangulation of methods in data collection (Denzin & Lincoln, 1998). Using more than one source of data gathering, enhances the validity of qualitative results. Focus group results of this study are complimented by an internet choice analysis.

When shopping for food, consumers are usually faced with a choice between competing products. The features of these competing products often vary. Typical features for food products can include price, process, country of origin, packaging and so on. Choice analysis is a well known approach within marketing for exploring the effects of and interaction between several product features on consumer acceptance (Green & Rao, 1971; Johnson, 1974). In choice studies consumers are presented with a variety of products or images, each differing from the others on a set of chosen attributes (Green & Rao, 1971; Green & Srinivasan, 1978; Green & Wind, 1975). The respondents are either asked to make a choice between several products, or to rank or rate products according to some criteria such as degree of acceptance or interest (Enneking, Neumann & Henneberg, 2007; Jaeger, 2000). Choice analysis reveals the relative importance of each attribute, thus providing concrete information about which product attributes and their interactions that are most important for acceptance and food choice.

## Focus groups

### Participants

Five group discussions were conducted in Brisbane, Sydney and Melbourne with a total of 31 people recruited by market research company I-View. Recruited participants were required to be avocado consumers and to be either the main grocery buyer or to share grocery purchasing activities. Further criteria were used to define individual groups (see Table 1). A moderator and an observer were present at each focus group. The duration of the groups were 1h and each session was audio taped and transcribed.

Table 1: Summary of group details

Sydney	Parents of children aged 5-18	4
	Double income no children	7
Melbourne	Parents of children 5-18	7
Brisbane	Parents of children aged 5-12	5
	Parents of children 13-18	8

### Interview structure

Group interview structure was devised after consultation with Simpsons Farms. Stimulus included actual products available in supermarkets, as well as fresh-cut product prototypes. Participants were encouraged to discuss the various products with some guidance provided by the moderator. Various exercises were conducted including a product sort, a sentence completion exercise and picture card evaluation exercise designed to elicit metaphors for values. Appendix 3 contains a typical moderator guide.

## Choice analysis

### Participants

The internet survey was fielded to an external recruitment agency data base (I-View). One hundred and fifty-seven respondents were recruited according to avocado consumption and main or shared grocery buying and the geographic locations of CBD Brisbane, Sydney and Melbourne. Eight cases were deleted due to survey skimming tactics.

### Stimuli

Choice analysis stimuli were both an image and product description. Product profiles were based on the results obtained from focus groups. Products were those that members perceived to be an alternative to fresh avocado. Attributes provided in the product description were price, country of origin, and ripeness. Price levels were based on historic data available on the Avocados Australia website (<http://industry.avocado.org.au/RetailPricing.aspx>) with the lowest price indicative of average price over 12 months for a whole avocado. Further price levels were equal increments taking into consideration a range of prices indicative of a fresh-cut avocado product and the actual price of the frozen avocado product. The price of frozen avocado packs at retail included two frozen avocados. However, due to the experimental design, frozen avocado was described as one frozen avocado in line with the other products. Country of origin levels were based on those countries currently importing processed avocado products into Australia. Details of the product profiles, attributes and levels of attributes are described in Table 4. Text descriptions were subject to pre-testing (n=30) for comprehension prior to administration of the main study.

Using the conjoint module of IBM SPSS 20, 20 orthogonal profiles (including four holdouts) were created from the attributes and levels and presented to participants in a random order. The context provided to participants was ‘how interested are you in this product for yourself or your family?’ Each participant rated each profile for interest (nine point anchored scale labelled 1 – ‘not interested at all’ to 9 = ‘very interested’, see Appendix 4).

Table 2: Conjoint study of avocado attributes and levels

Attribute	Number of levels	Level description
Product	3	One whole avocado
		One frozen avocado
		One fresh-cut avocado
Price	4	\$1.79
		2.29
		2.79
		3.29
Country of origin	3	Australia
		Mexico
		New Zealand
Ripeness	2	Ripeness info available
		No ripeness info available

### Data analysis

Statistical analysis was undertaken using IBM SPSS 20 using the SPSS Conjoint Analysis module which was limited to main effects. The software used a general linear model analysis to calculate part-worths (utility values with standard errors) for each level of attribute. An averaged relative importance value (percentage) was calculated for each attribute. Cluster analysis was undertaken on the conjoint data to understand if segments with similar patterns of response were apparent.

## Results

### Focus groups

### Participants

Overall, participant demographics were evenly spread across gender, age and level of education. Table 2 provides a summary of group demographics.

Table 3: Summary of group discussion demographic data

Gender	male	16
	female	15
Age	21-29 years	1
	30-39 years	7
	40-49 years	11
	50-59 years	10
	>60 years	2
Marital status	Single	5
	Married	23
	Other	3
Level of education	Some primary or high school	1
	High school or equiv	8

Tafe, trade or equiv	8
Bachelor	9
Postgraduate	5

## **Content analysis of focus group transcripts**

The strongest circumstances for using processed avocado products were to avoid lower quality avocado and to provide convenience.

### ***Quality***

Processed avocado products - particularly fresh-cuts and frozen products - were recognised as resolving problems associated with avocado ripeness and blemish. Although many participants were confident in their ability to choose an avocado, others relied on cues to purchase such as 'ripe and ready' stickers; however few had seen these and several participants found it difficult to locate a ripe avocado:

'If they didn't have (ripe) avocados when I did my weekly shop, but I want to have avocado in a salad, I'd probably get the substitute (fresh-cut)...because it's ripe' (female Sydney).

Preferences were almost unanimously for fresh whole avocado, yet consumers could see the value in fresh-cut and frozen avocados, particularly as a way of avoiding lower quality fruit:

'you can see if it's damaged or brown or got lumps in it' (male Brisbane)  
*and*

'because you might buy a dud one when you buy the fresh one' (male Melbourne).

### ***Convenience, price and novelty***

Perceived preparation effort and the convenience of processed products appear to promote interest. The fresh-cut product was appreciated for its immediacy - 'it's better because it's ready to use straight up'. Fresh-cut products were appropriate for salads, for children to use, and to use 'on the go'. Parents were encouraging their children's psychological investment and independence in good food and the fresh-cut product and other processed avocados were considered appropriate:

'avocados can be a bit messy – kids are into cooking – master chef' (female - Melbourne).

*and*

'good for kids if they bring friends' (female, Brisbane).

The frozen product was particularly appealing as a 'back-up item' - 'it would be good to have in the freezer so you always have some' (female, Melbourne). The frozen product was also valued for its packaging (see Image 1) as participants valued the convenience of using a half at a time:

'you can have one half and conserve the other' (female, Melbourne).

However, consumers felt that the outer sleeve needed to include a window to allow the purchaser to view the contents thereby providing confirmation of the quality of the product. There were also concerns on whether texture changes were apparent once defrosted.

The more processed goods such as the guacamole products were attractive for 'on the go' situations and consumers acknowledged purchasing them for entertaining –They were appropriate for sandwiches, spreads or dips.

Consumers were curious about the Avo Fresh products with few recognising or having bought the product. The appeal was one of novelty, however many noted the convenience aspect - 'I like it because it's all done for me' (male, Sydney), 'don't need to use a whole avocado. Can just screw the lid back on' (female, Melbourne), and 'they're processed but I'll still buy them, they're not a direct competitor to whole fresh avocados.' (male, Melbourne). Concerns with wastage were also voiced with some consumers suggesting that the 100% guacamole would be more convenient in smaller pouches.

Frozen avocado product from Mexico



Price was inevitably raised when discussing the attractiveness of processed avocado products. Although they could see value in processed avocado, price-sensitive consumers were averse to purchasing them due to perceptions of higher price. However, when faced with the choice of a whole fresh Australian grown avocado and a less expensive frozen pack of avocados from Mexico the majority of consumers asked admitted they would try the frozen.

Time-pressured consumers perceived price to be a reasonable trade-off for convenience:

'I'd consider that if I was in a hurry and I knew I was pressed for time. I would pay for the convenience of that (fresh cut product). Knowing it probably would be more expensive, that would be the trade off I'd make' (male, Melbourne)

The competing concepts of time and cost are what divide those that would consider purchasing the whole avocado 'substitutes' and those that would not.

'I think you would get professional couples that would buy them. Cost would be an issue for parents'. (male, Melbourne).

This is confirmed by the responses to the processed products by dual income, no children participants – of which all the processed products on offer were attractive to varying degree.

‘It is avocado (fresh cut product). It’s not so much a substitute. It’s a substitute for time’. (female, Melbourne)

### ***‘Fresh only’ consumers***

Although most see the value in some of the products, there are those that were vehemently against processed avocado products of any kind. This seems to stem from a traditional value system that resists convenience as a concept - ‘A whole one is already very convenient and easy to prepare’ (female, Sydney) and ‘(Avo Fresh) has the same shelf life as an avocado – how lazy are we getting?’ (male, Melbourne). Others simply perceive fresh as best, and this was often related to either a superior taste or to the perceived loss of vitamins and minerals when the fruit is processed.

Perceived price was a considerable barrier for ‘Fresh only’ consumers with many believing processed products would be more expensive because ‘you pay for the convenience..I’d almost have a guilt feeling’ (male, Sydney). Occasional opinion stemmed from a sense of safety:

‘It’s all the bacteria that can grow in it (the processed products). Kids open it and don’t shut the lid properly then it gets contaminated’ (male, Brisbane).

## **Values**

### ***Whole avocados***

Values associated with whole fresh avocados relate to the higher order values of Health and Hedonism (Schwartz & Boehnke, 2004). Avocados are a popular option for parents who see it as their role to provide children with healthy foods. Parents struggle to find produce that is both nutritious and appealing for children. Avocado satisfies this need - ‘it’s easy to introduce kids to’ (female, Melbourne) *and* ‘it’s hard to find other fruit and vegetables with the same benefits’ (female, Brisbane).

They are also revered for the pleasure (Hedonism) associated with them, particularly the satisfying and taste/texture properties of the food:

‘it accompanies what you have with it. If you have a chicken sandwich, it gives it a bit extra. A bit of flavour, a boost’ (female, Brisbane) *and* ‘it compliments other things’ (female, Sydney).

Value metaphors elicited via the story cards were associated with health and nature. Chosen pictures associated with whole avocados tend toward natural or farming landscapes or pictures of active people, particularly sports associated in the minds of the consumers with healthy Australians. Pictures of children were also chosen often. Explanations were around purity, and children’s health and enjoyment - ‘children are active, they need energy and power’ (male, Sydney). Other values elicited via the story cards were those associated with security and being relaxed, and being in harmony with nature: ‘strength – knowing it’s an Australian grown, and you’re getting a good product’ (male, Melbourne) and ‘fresh, simple and clean’ (male, Sydney).



### ***Processed avocados***

Values associated with processed avocados were aligned with quality of life, particularly in relation to family life-stage. Time-stressed working parents, professional couples, and young professionals saw virtue in the frozen and fresh-cut products:

‘two years ago when I was a single working mum, working six days a week, I would have bought that (the fresh-cut slices) because it’s easy’ (female, Melbourne). Other values are related to stimulation, particularly the novelty of frozen, fresh-cut and Avo Fresh products with many participants expressing surprise at the number of avocado products on the market. This curiosity would seem to promote trial of these products (without considering the attribute of price). However, this trial would only translate to repeat purchase if the product in question satisfied expectations in taste and texture.

The guacamole imported from Mexico was valued for its perceived authenticity. A number of consumers felt that this was appropriate as guacamole is a Mexican national dish – and therefore an acceptable import.

### ***Imported processed avocados***

Several points are worth acknowledging prior to discussing values related to imported processed avocado products: Consumers were exposed to products imported from New Zealand and Mexico, as these were products currently available in supermarkets. Discussion about imported processed avocado products reflects this and may not be indicative of the reaction to products from other exporting countries.

Values associated with imported avocado products reflect the conflict that certain participants felt in purchasing imported food products in general. This is indicative of the concept of ethnocentrism, defined as the belief among consumers that it is inappropriate, or even immoral, to purchase foreign products because to do so is damaging to the domestic economy, costs domestic jobs, and is unpatriotic (Klein & Ettensoe, 1999). Ethnocentric tendencies can range from low to high and has been shown to be an influence of some importance on the purchase decision of food in Australia (Philp & Brown, 2003). This ethnocentric standard was not shared by all group members, with country of origin (COO) a minor feature for around half the participants. Therefore, the following examination is largely indicative of the sample that perceived COO to be a significant factor in their purchase decisions.

Negative attitudes toward imported product primarily reflect the higher order values of security and safety. Specifically, security values reflected patriotic emotions and a sense of duty toward Australian farmers and a responsibility to support the Australian economy:

‘Australian farmers are important because they have to make a living. They don’t always get the best deal competing with bigger companies’ (male, Brisbane).  
and

‘In our economic climate, the way things are, why would we want to import something from Mexico when we’ve got good Australian products being grown here and these guys are starving’ (male, Brisbane).

Those against the import of food perceived politicians and importing companies to be responsible. However, one consumer felt that imports were a necessary ‘evil’ – ‘having

imported avocados...I don't agree with this, but it keeps the price low to some extent' (female, Sydney).

The sometimes passionate display of patriotism from some older male respondents during group discussions of COO seemed to moderate the responses of others. Younger participants (<35 years) showed in their body language and responses to be sensitive to, and uncomfortable with debates on COO. This was particularly apparent when discussion turned to the safety of imported food products and whether imports from 'less developed' countries were 'risky'.

Participants regularly associated imported avocado products with the danger of the unknown. Discussion about foreign food standards were usually restricted to Mexico which high ethnocentric consumers perceived as a less developed country:

'it's not where I'd be happy for my food to be produced. I wouldn't want to eat what comes from that polluted, desolate environment' (female, Brisbane),

and

'You don't know what's been sprayed on it' (female, Melbourne)

Others had faith in the stringency of Australian import laws:

'the government wouldn't put it's population at risk. So, I don't think it would be unsafe to eat an avocado from Mexico' (female, Sydney).

Attitudes to product safety differed between imports from New Zealand and those from Mexico. Consumers credited New Zealand food standards as being similar to Australian – whereas Mexico was associated with deficient food quality and standards. This phenomena has been noted in the literature with the perceived similarity of the consumer's culture or belief system with that of the exporting country appearing to be an important influence on product evaluation (Juric & Worsley, 1998):

'I don't know the intricacies of the NZ food standards but they're a fairly close neighbour. Mexico is different' (male, Brisbane).

However, reference to stories from the popular broadcast media about the authenticity of New Zealand imports reinforced the idea that Australian produce was preferable. Media reports that describe the practice of food imports to New Zealand being relabelled as New Zealand produce before being exported to Australia was a contentious issue.

An obvious divide was found in all groups between consumers who value price over country of origin, and those that fervently oppose imported products.

'I wouldn't buy Mexican avocados...Never, I wouldn't sacrifice quality for cheaper price' (male, Brisbane).

and

'We bargain shop, looking for cheapest price... when you have a family; you have to look at prices' (female, Brisbane).

Other participants were conscious of COO to a point. When asked if attitudes would change if frozen avocado product from Mexico was cheaper than whole fresh Australian avocados, consumers commented that they would buy both products.

Consumers equated the time taken in export transit with freshness, 'If it's on my doorstep obviously it's gotta be fresher than something that's coming from overseas' (female, Brisbane).

The environment was also a concern:

'I've got a problem with food miles...it's an environmental issue' (female, Sydney).

A few participants saw avocados as an essentially Mexican product due to the Australian experience with Mexican food, of which avocado is a staple. Because of this linkage, these consumers felt that imported avocado products from Mexico were acceptable:

'for me it's actually the climate where it has been grown...so a Mexican avocado is better than one from New Zealand' (female, Sydney).

As previously stated, around half of the group participants were comfortable with imported avocados. Although many of the discussions around the picture association exercise for imported avocado products centred on themes of hygiene, barren primitive landscapes, and uncertainty, one male in his early 20s described his picture as:

'an open window to things to arrive – I don't have a problem with imported products' (male, Melbourne).

### ***Perception of fresh vs processed***

Participants were asked as a group to sort a collection of avocado products into clusters according to some criteria. Participants were not given direction but allowed to develop the clusters amongst themselves and to come to a consensus on how they were to be grouped as well as group membership.

Product sorting continually resulted in groups defined as natural versus varying degrees of processing. Image 1 provides a continuum or scale of processing that resulted from one group sort activity: whole avocados at one end of the scale were described as completely natural and the dip product at the other end the most processed. Although the type of sorting did not differ within and between groups, decisions as to what products belonged to which groups did produce discussion. Whole fresh avocados were either a group of their own, or grouped with fresh-cut avocados and frozen avocados. Frozen and fresh-cut avocados were perceived to be in the 'true form' of an avocado and therefore differentiated from those products that had been manipulated or 'smashed' such as the guacamoles and Avo Fresh products. Frozen and fresh-cut avocados were considered to be an avocado 'substitute' or fresh avocado option. However, for several participants packaging was a barrier to fresh:

'anything in the fruit section that's in a package is not fresh to me' (female, Sydney).

Processed products were classified as either 'naturally' preserved or preserved with additives. Naturally preserved products included vacuum packaging and lemon juice as a preserving ingredient. Preserved with additives product included the Avo Fresh products and the avocado dip. Avo Fresh products were inevitably a group of their own, and this is logically a result of the packaging and branding. The Avo Fresh products were continuously perceived to be more processed and preserved than the 100% guacamole products. This was due to the added ingredients in the spicy product and the gum added in the firm avocado product. The Coles dip was not considered to be an avocado product, but an avocado flavoured product.

Products were occasionally regrouped according to usage. Whole fresh avocado and fresh-cut avocados were appropriate for salads and specific events such as picnics and barbeques; frozen avocados a ‘stand by’ product for emergencies; guacamoles appropriate for entertaining and for specific meals as a sauce; Fresh Cut products for children and a convenient spread, and dips for entertaining.

Image 1: A ‘scale’ of level of processing



## Choice Analysis

### Participants

As shown in Table 4, over 60% of participants consumed avocados fortnightly or more. A little over half were the main grocery buyer of the house and for the remainder shopping was a shared activity. This is reflected in the relatively even gender split for the group. A high proportion of consumers bought their avocados from major supermarkets (78%). Age was well represented in the categories from 25-64, with fewer participants in the 18-24 and 65+ years groups. The education levels of participants were over-represented for high school year 12 at 31% compared to the Australian average of 21%, and 31% Tafe, Trade or equivalent compared with the Australian average of 17% (ABS, 2011).

Table 4: Characteristics of choice analysis participants (n=149)

Characteristics		%
Gender	male	56
	female	44
Age	18-24 years	7
	25-34 years	19
	35-44 years	20
	45-54 years	21
	55-64 years	21
	65+ years	12
Level of education	Some primary or high school	6
	High school or equiv	31
	Tafe, trade or equiv	31
	Bachelor	21
	Postgraduate	11
Marital status	Single	25

	Married	70
	Other	5
Dependent children under 18	Yes	30
Who buys groceries?	Me	57
	Shared activity	43
Mainly purchase avocados?	Major supermarket	78
	Independent supermarket	9
	Fruit and vegetable shop	13
Avocado consumption	At least weekly	35
	Around fortnightly	29
	Around once a month	24
	Less than once a month	12

### Choice survey

The results of the analysis (Table 5) indicated that for this sample, the most important attribute is Country of Origin at 38.3%, followed by Product at 31.3%, Price at 24.8% and Ripe information 5.6%.

Part-worths of the levels of attributes reveal that whole avocado is preferred, with fresh-cut avocado second. Australian produce received higher part-worths, with New Zealand second. As would be expected, prices followed a linear pattern where lower prices were preferred over higher. The number of reversals of expected direction for price was high at 32, and this suggests a price-COO trade-off. Pearson's  $R$  was high at .95 and Kendall's Tau for holdouts was decent at .67 suggesting the fit of the data was good.

Table 5: Importance percentage and utility values of attributes and levels

Attribute and level	Utility
<i>Product (mean importance)</i>	31.3%
One whole avocado	.91
One fresh-cut avocado	-.13
One frozen avocado	-.78
<i>Ripe (mean importance)</i>	5.6%
Information present	.002
Information not present	-.002
<i>Price (mean importance)</i>	24.8%
\$1.79	-.388
2.29	-.776
2.79	-1.164
3.29	-1.552
	$\beta = -.388$
<i>Country of origin (mean importance)</i>	38.3%
Australia	-1.279
New Zealand	-2.558
Mexico	-3.837
(Constant)	7.2
Fit (Pearson's $r$ )	9.50

## Simulations

A series of product simulations were conducted to understand how utility changed in relation to product mix. Table 6 provides a description of a set of simulated products and utility. Australian whole avocado was preferred, even at higher prices to whole avocado from New Zealand and Mexico. Interestingly, low cost New Zealand whole avocado was preferred to Australian fresh-cuts, but low cost Mexican avocado was not. Imported frozen avocado received the lowest utilities overall.

Table 6 Product simulations

No.	Product	COO	Price	Utility
1	One whole avocado	Australia	1.79	6.49
2	One whole avocado	Australia	2.29	6.09
3	One whole avocado	Australia	2.79	5.71
4	One whole avocado	New Zealand	1.79	5.00
5	One fresh-cut avocado	Australia	2.79	4.67
6	One fresh-cut avocado	Australia	3.29	4.28
7	One whole avocado	Mexican	1.79	3.97
8	One frozen avocado	New Zealand	1.79	3.31
9	One frozen avocado	Mexican	1.79	2.29

## Segmentation

A cluster analysis of part-worths was applied, and inspection of the agglomeration schedule and dendrogram reveal four segments with relatively stable characteristics. Group two with 105 of the 149 respondents was the largest group, and group four the smallest with eight members. For all groups, fresh avocado was preferred over fresh-cut and frozen. No significant results were found for demographics between groups. However, no direct comparisons could be made due to the disproportionate numbers within groups. An inspection of simulations within segments revealed trends in the data. Caution should be applied when interpreting these, due to the disproportionate group size.

### *Group 1 - Avocado lovers*

Of the 24 people in this group, half ate avocados weekly. This group were primarily interested in whole avocados and had little regard for COO. In simulations, this group showed the highest utility for low cost Mexican and New Zealand whole avocados with very little interest in other products. This group would seem to be a target for whole avocados only.

### *Group 2 - Non-committals*

This group was the largest at 105 people, with an equal spread across Brisbane, Sydney and Melbourne. The non-committals were moderate in their views. This group had quite a low utility for whole avocado and the highest utility for frozen avocado. A high utility for frozen product was also evident in the simulation exercise where imported frozen products for this group were almost three times the utility of the next highest group. This group prefer fresh but are the most likely to consider a frozen product.

### *Group 3 - Fresh-cut potentials*

The 12 people included in this group were not located in Brisbane, and had a higher income. This group had the lowest utility for frozen avocado, and the highest utility for fresh-cut avocado and this was similar to that of whole fresh. This group were not averse to New Zealand product. This group seems to be a target for fresh-cut product, and they are opposed to frozen product.

#### ***Group 4 - Patriots***

The smallest group at eight people, they were primarily located in Melbourne. This group were defined by the very high utility for Australian COO, and lowest utility for all others. They had the lowest utility for whole fresh avocado. Simulations reveal that this group strategised their decision-making process for this exercise, and only scored Australian produce high. All imports were scored low regardless of product type and price. It is difficult to tell whether this group actually shop according to COO or whether they were emphasising their belief structures with their responses.

### **Summary**

#### **The likely impact of imported processed avocado products on the Australian fresh avocado retail market**

Australian whole avocados were the overall preference for participants. However, the results from focus groups and the choice analysis suggest that for a number of participants imported processed avocado products have an appeal.

The strongest incentive for purchasing processed avocado product in general is to avoid dissatisfaction with low quality avocados and to provide the convenience of a ripe, ready to use product. These findings are substantiated by the results of previous Australian avocado consumer research (Herron, 2009; Gamble et al., 2010), which found problems with ripeness and low quality of fruit to be a barrier to purchase or source of dissatisfaction.

Country of origin was a barrier to purchase of imported product for the majority of consumers with almost all preferring to purchase Australian goods. For a small extreme portion of consumers, COO was paramount as can be seen with the *Patriot* segment of the choice analysis whose responses solely reflected the source of product. However, if minimally processed avocado imports are available at a lower cost than whole Australian avocados, price sensitive consumers would trial these products. The frozen Mexican avocado, made using small avocados, currently retailing at \$2.81 for two frozen avocados (170g flesh), is lower in cost per fruit than the average price of two larger whole fresh avocados (260g flesh) (Avocados Australia <http://industry.avocado.org.au/RetailPricing.aspx>). However the frozen halves are more expensive than fresh fruit on a \$/kg base and fresh fruit equivalent to the size of frozen halves (85g flesh per fruit) would be lower priced than average price reported in the retail pricing tracker. This indicates that price sensitive consumers may find the product attractive if the value of the size of fresh avocados is not indicated. In the choice analysis the *Non-committals*, the largest group at 105 respondents, were the most receptive to frozen avocado product and were moderate in their responses to COO. This suggests that frozen Mexican avocados may impact the Australian fresh avocado market. However, it is worth noting that many focus group participants view this product as primarily a 'back up' item, rather than a fresh option.

Focus group participants in Melbourne and dual-income couples (with or without children) were the most receptive to processed avocado (when not taking price, and

COO into consideration). Frozen and fresh-cut products held an appeal for around half the focus group participants. The *Fresh-cut potentials* were open to, as the name suggests, fresh-cut products and were not averse to New Zealand product. Guacamole was a context specific product that was already being purchased by consumers. Guacamole from Mexico was of interest to a set of consumers due to perceived authenticity.

Results from focus groups and the choice analysis reveal that product from New Zealand is accepted over Mexican product. New Zealand was thought to be a safe exporter. This can be attributed to the perceived similarity of the New Zealand culture to that of the Australian. Mexico was perceived as 'third world', and of having low food standards.

Drivers to consumption were:

- price if less expensive than Australian avocados
- ready ripeness
- avoid low quality avocados
- preparation effort
- entertaining
- novelty/choice
- easy for children
- low wastage
- perceived authenticity of a Mexican product

Barriers to consumption were:

- price
- country of origin
- perceptions of freshness
- environmental concerns
- perceived change in taste and texture prior to trial

### **Positioning Australian avocados**

A preference for whole fresh avocados exists for all consumers. Fresh-only consumers are present as indicated by the choice analysis group *Avocado lovers*. These consumers eschew all products but whole avocados, they respect traditional values, and consider convenience foods lazy.

When discussing COO, many participants associated Australian products with fresh food, security in the form of food safety and hygiene, and supporting the Australian economy and farmers. Many, but not all, participants related imported product with the unknown. In general, attitudes to New Zealand produce were less extreme than attitudes to Mexican product. This can be attributed to the perceived similarity of the New Zealand culture to that of the Australian. Mexico was perceived as 'third world', and of having low food standards.

The results from focus groups and choice analysis suggest that the Australian whole avocado industry focus on several themes:

- Australian avocados are 'on your doorstep'
- Australian avocados – 'pure food for kids'
- Australian avocados is security for our economy and for Australian farmers
- fresh is better, for taste, texture and nutrition



- provide cues to ripeness
- continue to pursue improving quality parameters

To position against imports it is suggested to promote the impression of the unknown standards of other countries. However, it is important to do so in a way that does not alienate low ethnocentric consumers.

## Discussion

### Overall Assessment of Processed products

#### Whole, sliced, diced products

##### Food service

The sort after product in this area has been a frozen, sliced avocado product that you can take from a freezer bag and place on a salad, put into sushi, place on a sandwich etc. There has been extensive work in this area but there are still issues with the robustness of product after thaw back. Products can be slimy, gooey; they lose texture and have water drip loss and oil drip loss. Subsequently, the frozen products are generally viewed as not being substitutable for fresh halves or fresh sliced avocado in salads, as a side etc.

The potential advantages against fresh fruit include no skin/seed waste to dispose of, less time required for preparation, no avocado handling/ripening skills or time required, ripeness, 100% flesh integrity, months-years of shelf life. The potential disadvantages against fresh fruit include unacceptable texture, fruit of earlier maturity for some products (stage 2 or 3 for imported Mexican product) to that which Australian consumers prefer, freezer storage space requirement.

In terms of raw material costs, the 'Fresh Avocados Masterbook for Food Service' has indicated the price for fresh avocado, in commercial kitchens, as \$5.13/kg. This appears to be a base price and has been recalculated as \$5.1-\$8.3/kg for fruit with no unusable (damaged) flesh (based on \$20-\$30/tray with tray giving 3.6-3.9kg of flesh). Without consideration of the value of convenience (reduced preparation time, ripening and handling time/skills, etc.), fresh fruit is cheaper than this range of processed products, which range from \$12-18/kg, even if 10% and 20% waste (of the flesh) is factored in (price of usable flesh becomes \$5.7-9.4/kg, 10% waste, and \$6.5-9.7/kg, 20% waste).

Without specific intellectual property around a processing/freezing system to retain fruit texture quality, there is little advantage for Australian made frozen product versus an imported product.

If the texture and flavour of fresh cut products could be adequately preserved, they would offer a direct substitute to fresh avocado used in salads etc. The combination of technologies used (packaging, treatments etc.) would need to preserve colour, flavour and texture. An industry expert suggested that the price of such products, ex-factory, would be 3-4 times that of the raw material (split of costs being approx 25-30% cost raw material, 25% labour, 25% packaging, 25% distribution). If fruit cost \$5/kg then ex-factory price may be in the vicinity of \$15-20/kg. A shelf life of at least 10-15 days would be required. Other challenges in making such products include:

- food service supply chain can be found wanting in terms of product handling and refrigeration
- challenge of lowest margins winning contracts
- sophisticated fresh cut operations require significant capital investment.

Another suggestion from industry expert was the need to undertake thorough market research (estimated cost of \$60-80K) to formulate a suitable business model to pursue development of this product.

## Retail

As per relevant general information from food service section.

The focus groups showed that the strongest incentives for using processed products were to avoid fresh fruit with insufficient quality and to provide convenience of a ripe, ready to use product. Marketing messages for the commercial products are promoting these attributes, whilst indicating these products to be direct substitutes to fresh:

- 'Posh up your favourite salads' (Avo Fresh firm avocado)
- 'see the goodness...quality avocado...ready to use today' (Simply Avocado frozen halves).

The focus groups showed that perception of a suitable texture is still a concern of frozen halves, for some consumers, and this product type of product is more of a back up, stand by item. The Avo Fresh firm product is a refrigerated firm pulp that may retain texture more akin to fresh avocado than (some) frozen products. However the consumers in the focus groups didn't like this product and the Avo Fresh products, in general, are still not necessarily viewed as competing with fresh but more of a novelty purchase.

The potential advantages against fresh fruit include less time required for preparation, no avocado handling/ripening skills or time required, ripeness, 100% flesh integrity, weeks-months of shelf life. The potential disadvantages against fresh fruit include unacceptable texture, fruit of earlier maturity for some products (stage 2 or 3 for imported Mexican product) to that which Australian consumers prefer, freezer storage space requirement.

In terms of material costs, frozen half avocado costs \$16.53/kg versus \$15.40/kg flesh of whole, fresh avocado (based on \$2 for 200g giving 130g flesh). These products become price comparable, per kg of flesh, when fresh avocado is \$2.15 per 200g whole fruit (130g flesh). If 10% of flesh is damaged, at \$2 per fruit, then the usable flesh price becomes \$16.90/kg flesh and the frozen product is slightly cheaper. However if the avocados were purchased at \$1.50 each (assuming 200g fruit) then even with 20% flesh damage the fresh fruit is cheaper per unit of usable flesh (\$14.42/kg). The Avo Fresh firm Avocado product is significantly more expensive, being \$28/kg, than both fresh avocado and frozen halves.

From both the focus groups and choice analysis, fresh cut avocado products appear to have potential in the retail market. They do represent a substitute for fresh avocado and are viewed as having convenience (reduced preparation effort and time) plus suitable quality and ripeness. As per comments in food service section, there are the food technology challenges to preserve colour, flavour and texture and the estimated ex-factory price of \$15-20/kg (based on \$5/kg raw material cost) may well be too high. A shelf life of at least 8 days would be required.

Other challenges in developing such products include:

- very high quality fruit and process is necessary as consumers can eye ball products and slight blemishes etc. may dramatically affect ability to sell product
- sophisticated fresh cut operations require significant capital investment.

Market research is required to determine potential market size and profitability of these products.

## **Chunky pulp products**

### **Food service**

The texture and flavour of this product result in the closest product to fresh, mashed avocado. These products are not directly substitutional for fresh avocado in salads etc.

The potential advantages against fresh fruit include no skin/seed waste to dispose of, less time required for preparation, no avocado handling/ripening skills or time required, 100% flesh integrity, months-years of shelf life. The potential disadvantages against fresh fruit include disposal of packaging, fruit of earlier maturity for certain imported products (stage 2 or 3 for imported Mexican product) to that which Australian consumers prefer, freezer storage space requirement.

In terms of raw material costs these products are more expensive than fresh avocado, ranging from \$12-16/kg versus \$5.1-\$8.3/kg for fruit with no unusable [damaged] flesh (based on \$20-\$30/tray with tray giving 3.6-3.9kg of flesh) and \$5.7-9.4/kg and \$6.5-9.7/kg for 10 and 20% waste, respectively. These figures not consider the value of convenience that these products offer (reduced preparation time, ripening and handling time/skills, etc.).

### **Retail**

As per relevant general information from food service section.

The focus groups showed that the strongest incentives for using processed products were to avoid fresh fruit with insufficient quality and to provide convenience of a ripe, ready to use product. Marketing messages for commercially available products indicate direct substitute to mashed avocado and are around ripe and ready, and ease of use, including:

- 'ready to use...perfectly ripened' (Fressure Foods avocado spread)
- 'makes parties and snacks easy' (Avo Fresh chunky avocado)

These type of products were viewed as being suitable for 'on the go' applications in the focus groups.

The potential advantages against fresh fruit include less time required for preparation, no avocado handling/ripening skills or time required, 100% flesh integrity, weeks of shelf life. The potential disadvantages against fresh fruit include disposal of packaging, fruit of earlier maturity for certain imported products (stage 2 or 3 for imported Mexican product) to that which Australian consumers prefer, fridge storage space requirement.

In terms of material costs, the Fressure Foods avocado spread costs \$19.50/kg versus \$15.40/kg flesh of whole, fresh avocado (based on \$2 for 200g giving 130g flesh). The flesh costs become the same, between fresh and processed product, when fresh avocados reach \$2.52 for 200g whole fruit (130g flesh). At \$2 per fruit, if 20% of flesh is damaged (usable flesh price becomes \$19.20/kg flesh) then the fresh and processed product are very similar in price per usable flesh. The Avo Fresh chunky avocado product is significantly more expensive, being \$28/kg, than both fresh avocado and Fressure Foods avocado spread.

## **Smoother pulps and guacamoles**

### **Food service**

These products are either a base to make dips, guacamoles etc. from or are the finished product (guacamole). Marketing messages include:

- 'always ripe and ready...for immediate use' (Fresherized Foods)
- 'consistent flavour and texture' (Fresherized Foods)
- 'no labour costs' (Fresherized Foods)

The potential advantages against fresh fruit include no skin/seed waste to dispose of, less (no) time required for preparation, no avocado handling/ripening skills or time required, 100% product integrity, months-years of shelf life. The potential disadvantages against fresh fruit include fruit of earlier maturity for certain imported products (stage 2 or 3 for imported Mexican product) to that which Australian consumers prefer, freezer storage space requirement.

If there is 20% waste in fresh avocado (usable flesh price of \$6.5-9.7/kg) then the upper range of fresh price and lower range of the processed products (range from \$10-14/kg) becomes price equivalent on a raw material base. This does not consider the value of convenience that these products offer (reduced preparation time, ripening and handling time/skills, etc.).

### **Retail**

These products are generally flavoured guacamoles.

Marketing messages include:

- 'ready to use...perfectly ripened' (Fressure Foods guacamole)
- '100% satisfaction guaranteed' (Coles guacamole)
- 'makes sandwiches and wraps easy' (Avo Fresh soft avocado)

Consumers in the focus groups indicated the use of these products when entertaining.

The potential advantages against fresh fruit include little or no time required for preparation, no avocado handling/ripening skills or time required, 100% product integrity, weeks of shelf life. The potential disadvantages against fresh fruit include fruit of earlier maturity for certain imported products (stage 2 or 3 for imported Mexican product) to that which Australian consumers prefer, fridge storage space requirement.

In terms of material costs, guacamoles cost \$18.95-19.50/kg versus \$15.40/kg flesh of whole, fresh avocado (based on \$2 for 200g giving 130g flesh). If 20% of flesh is damaged (usable flesh price becomes \$19.20/kg flesh) then the fresh and processed product are similar price. At \$2.46-2.54 per whole fresh avocado (200g total, 130 flesh), with no unusable flesh, fresh and processed guacamoles become price equivalent per kg of usable flesh. The Avo Fresh soft avocado product is significantly more expensive, being \$28/kg, than both fresh avocado and processed guacamoles.

### **Powder**

Is more an industrial ingredient that is considered only to be suitable in foodservice. It is used in a range of international products where small amount of avocado is used, and probably doesn't compete with fresh avocado.

### **Avocado dips (avocado content of ~10%)**

In the food service setting it is expected that a base avocado pulp would be used as an ingredient to make these products. In the retail setting, these products appear to not compete with fresh avocado being viewed more as 'avocado flavoured' products by consumers.

### **Summary**

The use of fresh avocado continues to remain strong and grow in both retail (85% of total fresh Australian avocado sales) and food service markets (10% of total fresh Australian avocado sales). The current impact of imported processed avocado is small but the potential future impact could be high in both retail and food service markets. The best primary strategy for competing with imported products is increasing consistent supply of quality and suitability ripened fresh Australian avocado to retain and grow these markets. Secondary strategies include promoting and supporting Australian processed products (including investigation of fresh cut products, which could only be Australian made for domestic supply), where appropriate, as a secondary block to imported processed product.

### **Price**

In general, Australian fresh avocado is cheaper in regards to \$/kg of usable flesh versus currently available food service and retail processed products.

### **Food service**

The sale of Australian fresh avocado through the various food service channels is estimated at 10% of total annual sales (Avocados Australia, 2011). The direction of the food service initiatives (coordinated through HAL) are rightly focused towards restaurants, pubs, clubs and hotels, where fresh, quality product is required and appreciated. For example some of the large, commercial caterers involved in the food service training initiatives insist on showing the cut fruit in a visible sense (canteens, cafeterias etc) so that they are highlighting their fresh offerings. The education, training and promotion activities are working well to increase use of fresh avocado by presenting chefs with new recipe ideas, storage and handling tips and ways to use avocados cost-effectively. Although the current avocado supply appears to be generally good, to enable growth in restaurants, pubs, clubs and hotels, a supply chain that continues to quality product of suitable ripeness is obviously required. Previous reports, (Inovact Consulting, 2009; Tandan, 2012), stress the importance of the relationship and connection between the providers and end user (chef, restaurant owner, food purchasing manager of hotel etc.) in the food service chain. The provider is the sales person of the fresh fruit in this context (Inovact Consulting, 2009). To maximize the benefit of the work being done in the food service initiatives, this key part of the supply chain should be included as much as possible. Initiatives such as;

- inviting and including providore(s) as part of the masterclasses and training classes,
- developing a list of providores with contact names and details to present to participants of masterclasses and training classes, and including this list in the general food service educational and promotional materials,
- having a list of providores available on the Australian Avocados website to help connect different parts of the supply chain,

may help to enable growth of the use of fresh avocado. There may also be benefit in gathering greater information on the overall quality and suitability of ripeness of fruit being delivered to end users.

To assess the growth of fresh avocado used and any potential ground being won/lost to processed products, in the coming years, more information could be gathered through initiatives such as the food service menu survey, such as:

- Generation of a confidential list of the major proveedores supplying the food service market and collection of volume sales to each category of establishment (cafes, restaurants, pubs, clubs, hotels), and any relevant qualitative information, to help track volume use of fresh avocado, identify growth (and potential growth) segments, as well as track any ground being lost to processed products.
- Asking end users to specify any use of processed product (and which specific type(s) of processed product is used), which applications/dishes use which product and key determinant of using processed vs fresh (eg price, ease of use etc.).

Apart from quick service restaurants (which appear to be sewn up with processed product), cafes are the establishment type where processed products are being utilised the most. There are a combination of reasons for this including staff having less time for food preparation, lower training, less innovation, cheaper priced meals, and more casual meals, which result in more focus on preparation/storage cost, ease of use etc. It is anticipated that some of these end users will not be won back to fresh avocado use on a regular basis. However Australian grown and made products are utilised by cafes and perhaps the general communication to the café market should be around using Australian grown and processed products wherever/whenever fresh isn't used.

## **Retail**

Australian fresh avocado is preferred over processed products, particularly when it is cheaper. The key way for Australian fresh, whole avocado to maintain and grow its market share, at a retail level, is to have quality fruit (dry matter >23% Hass, >21% Shepard), flesh damage less than 10%) at ripe to soft ripe stage. The quality of avocado fruit is improving with the % of Hass having more than 10% of the fruit blemished improving from 28% (2008) to 18% (2010), as measured by the Avocado Retail Quality Surveys. However there is still a way to go with this as well as the fact that some fruit at the beginning of seasons still fall short of the minimum dry matter requirements. Along with the quality surveys and retailer training program (Avocados Australia, which commenced in August 2011) there are several other projects looking to increase quality (AV09001 – National Avocado Quality & Information Management System, AV10019 - Reducing flesh bruising and skin spotting in Hass avocado), which together should help increase total purchases of fresh avocado and consumer confidence in fruit quality.

There are currently many different ways in which avocados are presented to consumers, in regards to convenience and packaging. These range from 'ripe and ready' packs located in the refrigerated fruit and vegetable section, ripe and ready fruit marked with a sticker, to buckets of mixed ripeness. The Avocados Australia retailer training program appears to be significant in managing to shift how avocados are handled and presented in store. Avocados Australia has also released an 'Australian Avocados' sticker to help brand Australian fruit. There are plans for this to be developed to be an Australian Avocados Ripe and Ready sticker.

Interestingly Chiquita had a Fresh and Ready avocado product, in the US market, which used special packaging (breathe way technology packaging, Landec own the patent on technology and had a supply agreement with Chiquita) to extend shelf life and present consumers with a packaged ready to eat avocado but this was withdrawn in April 2012. Literature in this area includes work done with MAP (Meir et al. 1997, Pesis et al. 2002), temperature (Meir et al. 1997, Pesis et al. 2002), use of applications of 1-methylcyclopropene (Pesis et al. 1997, Hershkovitz et al., 2005) and methyl cellulose-



based coating (Maftoonazad and Ramaswamy, 2005). As is the case in many retail outlets, Chiquita use 'Fresh and Ready' stickers to identify fruit that are ready and ripe.

A couple of other US retail strategies, mentioned by Avi Crane (formerly Californian Avocado Commission vice president) in Talking Avocados (Summer 2012), may be of interest for the Australian market. The first was that Walmart are the biggest retailer of fresh avocado in the US. Secondly the Southern Californian retailer Stater Bros apparently offer a truly 'Ripe for tonight' product to its customers. Crane believes this will be repeated around the US in the coming years and he estimates that Stater Bros have the highest per store sales of avocado in the market. Perhaps there is value in examining how Walmart and/or Stater Bros manage and present their avocados to consumers.

To directly compete with products perceived as equivalent to fresh but more convenient (because they are not cheaper if quality of fresh is okay), there may be scope (as part of the retailer training strategy and/or supply agreements with large growers/wholesalers) to have a certain percentage of fruit in ripe and ready formats each day. A range of example fresh and ready avocado packs, from retailers in various countries, are in Appendix 1.

Another way of positioning a small amount of fruit, to directly compete with processed guacamole type products, may be via putting fresh fruit with products that they can be used with. For example, perhaps a tray of ripened fruit could be placed with dry guacamole mix product (which retails for approx \$2 per pack in Australia) or fresh ingredient guacamole ingredients all packaged together (avocado, chilli, tomato, coriander, capsicum etc – see example in Appendix 1).

The other potential benefits of increasing the percentage of known ripe and ready fruit (signaled by packaging, sticker, other point of sale signage etc) and communicating this (via packaging, sticker, video or radio clip etc) to consumers include;

- significantly reduce the damage that consumers inflict on fruit in handling them.
- Grow the market for consumers who want/need to use the fresh product straight away by having a suitable product for them all the time
- Grow the market for consumers who struggle with picking, handling, storing and using fresh avocado by making this process simple(r).

If deemed to be cost effective, review of scan data for processed avocado purchases, from retail outlets, would be useful to monitor the sales of processed avocado products.

### **Fresh cut**

Fresh cut products have a window of opportunity as a substitute for fresh avocado and could only be supplied to the Australian market by an Australian manufacturer, due to the short shelf life of such products. However market research is necessary to quantify the opportunity particularly with regard to

- cost required to manufacture and distribute,
- potential size of food service and retail markets, and
- price paid for product by food service user, retailer and retail consumer.



## **Technology Transfer**

- There have been informal meetings with current fresh cut companies to discuss opportunities for such Australian grown and made products. Depending on the interest of Australian companies to pursue development of these product types, there may be further discussions to formulate proposals for further work in this area.
- To circulate this information to the Australian Avocado industry a suitable article, summarising the key parts of the project, has been proposed for submission to Talking Avocados.
- A presentation of the results of this project, by the whole project team, to a suitable audience including Avocados Australia and HAL is proposed for July/August.
- On December 29<sup>th</sup> 2011, Channel 10 interviewed Dianna Liu and Kent Fanning and then ran a story on the work being done in this project.

## **Recommendations**

- Continue to increase the quality of fresh Australian avocados.
- Continue to increase retailer and consumer training on how to present, select, handle, store and use fruit.
- Increase availability of ripe and ready avocado for retail consumers and investigate suitability of various formats.
- Gather more information on the supply of fresh avocados from providore to chef/food service purchaser and look at ways of strengthening this key part of the food service supply chain.
- Investigate further the opportunities for Australian grown and made fresh cut avocado product for both food service and retail markets. This would presumably require input from a commercial champion to support market research to determine potential viability.

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## Appendix 1 – Commercial product examples

### Woolworths Food Avocado Chunks

**Product ID:** 1131182  
**Company:** WOOLWORTHS  
**Country:** South Africa  
**Category:** Vegetables  
**Event:** New Product  
**Event Date:** Oct 2011  
**Region:** Africa  
**Currency:** ZAR  
**Price in US \$:** 6.45  
**Price in Euro:** 4.53  
**Local Price:** 44.95  
**Price / Kg in US \$:** 18.42  
**Price / Kg in Euro:** 12.95



### Product Description

**Description:** Individually quick frozen avocado chunks in a resealable foil pouch.  
**Claims / Features:** Equivalent of 5 avocados. Suitable for vegan.  
**Patent**

### Ingredients and Nutrition

**Ingredients:** Avocado.

**Nutrition:** Per Serving size: 100g, Total Fat: 14.7g, Protein: 0.2g, Total Carbohydrates: 8.7g, Energy(kj): 695, Protein(g/mg): 0.2g, Dietary Fibre(g/mg): 6.7g, Total Fat(g/mg): 14.7g, MonounSaturated Fat(g/mg): 9.8g, servingtype: 100g, PolyunSaturated Fat(g/mg): 1.8g, Saturated Fat(g/mg): 2.0g, Sodium(g/mg): 7mg, Total Carbohydrate(g/mg): 8.7g, sugar: 0.7g Fat: 14.7g; Protein: 0.2g; Carbohydrate: 8.7g

### Product Analysis

**Primary Package:** Foil Pouch  
**Individual Pack Size:** 0.35 kg  
**Total Pack Weight:** 0.35 kg  
**Quantity Per Pack:** 1  
**Shelving Details:** Freezer  
**Barcode:** 6 009173 168887 W

### Product Variants

Product Variants	Flavours / Taste	Positioning
Woolworths Food Avocado Chunks	Avocado	Ready Prepared, Vegetarian

## Fressure Foods All Natural Spicy Guacamole

**Product ID:** 1144365  
**Company:** FRESSURE  
**Country:** Australia  
**Category:** Savoury Spreads  
**Event:** New Product  
**Event Date:** 11/2011  
**Region:** Australasia  
**Currency:** AUD  
**Price in US \$:** 4.14  
**Price in Euro:** 2.91  
**Local Price:** 3.90  
**Price / Kg in US \$:** 20.70  
**Price / Kg in Euro:** 14.56



### Product Description

**Description:** All natural spicy guacamole made with perfectly ripened avocados and other fresh ingredients. Packed in 2 x 100g peel and serve plastic trays, held in a cardboard sleeve.  
**Extra Notes:** Keep refrigerated. Once opened consume within 6 hours to avoid browning.  
**Claims / Features:** All natural. Ready to serve. No additives. No preservatives. Made with 2 fresh avocados. Mild spiciness. Fressures cold pasteurization process, uses only cool pressurized water. No heat treatment. Lean on the environment. No water. No fuss.

**Patent**

### Ingredients and Nutrition

**Ingredients:** Avocado, jalapeno pepper, salt, coriander, onion, garlic.

**Nutrition:** Per 100g, Energy(kj): 670, Total Fat: 14 g, Protein: 2 g, Total Carbohydrates: 7 g, Protein(g/mg): 2g, Total Fat(g/mg): 14g, MonounSaturated Fat(g/mg): 10g, servingtype: 100g, PolyunSaturated Fat(g/mg): 2g, Saturated Fat(g/mg): 2g, Sodium(g/mg): 300mg, Total Carbohydrate(g/mg): 7g, sugar: 1g, transTotal Fattyacids(g/mg): <1g  
**Fat: 14 g; Protein: 2 g; Carbohydrate: 7 g**

### Product Analysis

**Primary Package:** Plastic Tray  
**Secondary Package:** Cardboard Sleeve  
**Individual Pack Size:** 0.1 kg  
**Total Pack Weight:** 0.2 kg  
**Quantity Per Pack:** 2  
**Shelving Details:** Fridge  
**Barcode:** 9421027274006

### Product Variants

Product Variants	Flavours / Taste	Positioning
Fressure Foods All Natural Spicy Guacamole	Avocado; Spices, not specified; Guacamole	Natural, No Additives/Preservatives, Ready Prepared, Ethical

## Coles Spicy Guacamole

**Product ID:** 1140934  
**Company:** COLES  
**Country:** Australia  
**Category:** Savoury Spreads  
**Event:** New Product  
**Event Date:** 10/2011  
**Region:** Australasia  
**Currency:** AUD  
**Price in US \$:** 4.02  
**Price in Euro:** 2.83  
**Local Price:** 3.79  
**Price / Kg in US \$:** 20.11  
**Price / Kg in Euro:** 14.15



### Product Description

**Description:** Mashed spicy flavored avocado in a plastic film-wrapped tray comes in a recyclable cardboard sleeve.  
**Claims / Features:** Suitable for vegetarian. Made from two fresh avocados. No added flavors, colors and preservatives. Naturally cholesterol free. 100% satisfaction guaranteed. Comes in a recyclable cardboard sleeve. Ideal with burritos, on a burger, in tacos, with salmon or as a fiery addition to pizza.

**Patent**

### Ingredients and Nutrition

**Ingredients:** Avocado pulp, Jalapeno puree (vinegar, Jalapeno, Pepper, Salt), Dried Onion, Dried Red Pepper, Salt, Dried Garlic, Jalapeno Pepper Powder.

**Nutrition:** Per 100g, Energy(kj): 795, Energy(kcal): 0.189, Total Fat: 17.0 g, Protein: 2.0 g, Total Carbohydrates: 10.0 g, Protein(g/mg): 2.0g, Dietary Fibre(g/mg): 5.0g, Total Fat(g/mg): 17.0g, MonounSaturated Fat(g/mg): 12.0g, servingtype: 100g, PolyunSaturated Fat(g/mg): 2.0g, Saturated Fat(g/mg): 3.0g, Sodium(g/mg): 300mg, Total Carbohydrate(g/mg): 10.0g, sugar: 1.0g, transTotal Fattyacids(g/mg): 0.0g  
**Fat: 17.0 g; Protein: 2.0 g; Carbohydrate: 10.0 g**

### Product Analysis

**Primary Package:** Plastic Film-Wrapped Tray  
**Secondary Package:** Cardboard Sleeve  
**Individual Pack Size:** 0.2 kg  
**Total Pack Weight:** 0.2 kg  
**Quantity Per Pack:** 1  
**Shelving Details:** Fridge  
**Barcode:** 9300601506477

### Product Variants

Product Variants	Flavours / Taste	Positioning
Coles Spicy Guacamole	Avocado; Spices, not specified	Low Cholesterol, No Additives/Preservatives, Ready Prepared, Ethical, Vegetarian



## Avo Fresh Spicy Soft Avocado

**Product ID:** 1061979  
**Company:** NEW FRESH  
**Country:** Australia  
**Category:** Savoury Spreads  
**Event:** New Product  
**Event Date:** 06/2011  
**Region:** Australasia  
**Currency:** AUD  
**Price in US \$:** 4.76  
**Price in Euro:** 3.34  
**Local Price:** 4.48  
**Price / Kg in US \$:** 29.72  
**Price / Kg in Euro:** 20.90



### Product Description

**Description:** Spicy soft avocado with fresh chillies, in a 160g squeeze plastic tube.  
**Extra Notes:** May contain avocado peel. Keep refrigerated. Use within 5 days of opening. Made in Australia.  
**Claims / Features:** Contains 2 avocados. Fresh ingredients. Fresh for 5 days after opening. Ripe and ready made easy. Avo Fresh use only hand picked avocados. Smooth and spreadable Avo Fresh Soft makes sandwiches and wraps easy. Slice Avo Fresh firm and push up your favorite salads. Hand made style Avo Fresh chunky makes parties and snacks easy. National Heart Foundation Approved.

**Patent**

### Ingredients and Nutrition

**Ingredients:** Fresh avocado, fresh chillies, fresh coriander, spices, lemon juice concentrate, sea salt, vegetable gum (E415).

**Nutrition:** Per Serving size: 16g, Total Fat: 14.8 g, Protein: 1.8 g, Total Carbohydrates: 2.2 g, Energy(kj): 718, Energy(kcal): 171, Protein(g/mg): 1.8g, Cholesterol(g/mg): 0mg, Total Fat(g/mg): 14.8g, MonounSaturated Fat(g/mg): 8.3g, servingtype: 100g, PolyunSaturated Fat(g/mg): 2.6g, Saturated Fat(g/mg): 3.9g, Sodium(g/mg): 210mg, Total Carbohydrate(g/mg): 2.2g, sugar: <1g, transTotal Fattyacids(g/mg): 0g  
**Fat: 14.8 g; Protein: 1.8 g; Carbohydrate: 2.2 g**

### Product Analysis

**Primary Package:** Plastic Tube  
**Individual Pack Size:** 0.16 kg  
**Total Pack Weight:** 0.16 kg  
**Quantity Per Pack:** 1  
**Shelving Details:** Fridge  
**Barcode:** 934397100022

### Product Variants

Product Variants	Flavours / Taste	Positioning
Avo Fresh Spicy Soft Avocado	Avocado; Chili, not specified	Heart Health, Ready Prepared

## Avo Fresh Spicy Chunky Avocado

**Product ID:** 1065577  
**Company:** NEW FRESH  
**Country:** Australia  
**Category:** Vegetables  
**Event:** New Product  
**Event Date:** 12/2010  
**Region:** Australasia  
**Currency:** AUD  
**Price in US \$:** 4.54  
**Price in Euro:** 3.20  
**Local Price:** 4.28  
**Price / Kg in US \$:** 28.39  
**Price / Kg in Euro:** 19.97



### Product Description

**Description:** Seasoned chunky avocado in a 160g plastic container.  
**Claims / Features:** Contains 2 avocados. Fresh ingredients. Fresh for 3 days after opening. National Heart Foundation approved. Great for parties and snacks.

**Patent**

### Ingredients and Nutrition

**Nutrition:** Per Serving size: 16g, Total Fat: 2.4 g, Protein: <1 g, Total Carbohydrates: <1 g, Energy(kj): 115, Protein(g/mg): <1g, Cholesterol(g/mg): 0mg, Total Fat(g/mg): 2.4g, MonounSaturated Fat(g/mg): 1.3g, PolyunSaturated Fat(g/mg): <1g, Saturated Fat(g/mg): <1g, Sodium(g/mg): 34mg, Total Carbohydrate(g/mg): <1g, sugar: <1g  
**Fat: 2.4 g; Protein: <1 g; Carbohydrate: <1 g**

### Product Analysis

**Primary Package:** Plastic Container  
**Individual Pack Size:** 0.16 kg  
**Total Pack Weight:** 0.16 kg  
**Quantity Per Pack:** 1  
**Shelving Details:** Fridge  
**Barcode:** 9343971000053

### Product Variants

Product Variants	Flavours / Taste	Positioning
Avo Fresh Spicy Chunky Avocado	Avocado; Herbs, not specified; Spices, not specified	Heart Health, Time Saving

## Avo Fresh Seasoned Firm Avocado

**Product ID:** 981577  
**Company:** NEW FRESH  
**Country:** Australia  
**Category:** Vegetables  
**Event:** New Product  
**Event Date:** 12/2010  
**Region:** Australasia  
**Currency:** AUD  
**Price in US \$:** 4.54  
**Price in Euro:** 3.20  
**Local Price:** 4.28  
**Price / Kg in US \$:** 28.39  
**Price / Kg in Euro:** 19.97



### Product Description

**Description:** Peeled, seeded and ready-to-serve avocado, great for parties and snacks.

**Claims / Features:** Contains 2 avocados. Fresh ingredients. Fresh for 3 days after opening. National Heart Foundation approved.

**Patent**

### Ingredients and Nutrition

**Nutrition:** Per Serving size: 16g, Total Fat: 2.7 g, Protein: <1 g, Total Carbohydrates: <1 g, Energy(kj): 124, Protein(g/mg): <1 g, Cholesterol(g/mg): 0mg, Total Fat(g/mg): 2.7 g, MonounSaturated Fat(g/mg): 1.5g, servingtype: serving, PolyunSaturated Fat(g/mg): <1g, Saturated Fat(g/mg): <1g, Sodium(g/mg): 34mg, Total Carbohydrate(g/mg): <1g, sugar: <1g  
**Fat: 2.7 g; Protein: <1 g; Carbohydrate: <1 g**

### Product Analysis

**Primary Package:** Plastic Container  
**Individual Pack Size:** 0.16 kg  
**Total Pack Weight:** 0.16 kg  
**Quantity Per Pack:** 1  
**Shelving Details:** Fridge  
**Barcode:** 9343971000060

### Product Variants

Product Variants	Flavours / Taste	Positioning
Avo Fresh Seasoned Firm Avocado	Avocado	Heart Health, Time Saving

## Ocado Guacamole Dip

**Product ID:** 937295  
**Company:** OCADO  
**Country:** United Kingdom  
**Category:** Savoury Spreads  
**Event:** Brand Extension  
**Event Date:** 11/2010  
**Region:** West Europe  
**Currency:** GBP  
**Price in US \$:** 1.61  
**Price in Euro:** 1.13  
**Local Price:** 0.99  
**Price / Kg in US \$:** 10.71  
**Price / Kg in Euro:** 7.53



### Product Description

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**Description:** Smooth and creamy blend of avocado, tomatoes, sour cream, mayonnaise and a hint of chilli.

**Extra Notes:** Not suitable for freezing. Contains egg and milk.

**Claims / Features:** The Ocado range is good quality, sensibly priced and, of course, responsibly sourced. Suitable for vegetarians.

**Patent**

### Ingredients and Nutrition

**Ingredients:** Avocado puree (59%) (avocado, acidity regulator (citric acid), thickener (xanthan gum), antioxidant (ascorbic acid)), sour cream (12%), mayonnaise (12%) (rapeseed oil, water, egg yolk, sugar, thickeners (corn flour, xanthan gum), salt, acidity regulator (acetic acid), preservative (potassium sorbate)), tomatoes (6%), lemon juice concentrate (5%), chillies (3%), garlic granules, salt, coriander, onion powder.

**Nutrition:** Per 100g, Energy(kj): 815, Energy(kcal): 197, Fat: 18.5 g, Protein: 2 g, Carbohydrate: 5.7 g, Sugar: 1.1g, Saturated Fat(g/mg): 4.1g, Dietary Fibre(g/mg): 1.2g, Sodium(g/mg): 0.4g, Other Essential Vitamins: salt: 0.9g  
**Fat: 18.5 g; Protein: 2 g; Carbohydrate: 5.7 g**

### Product Analysis

---

**Primary Package:** Plastic Pot  
**Individual Pack Size:** 0.15 kg  
**Total Pack Weight:** 0.15 kg  
**Quantity Per Pack:** 1  
**Shelving Details:** Fridge  
**Barcode:** 5060034482796

### Product Variants

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Product Variants	Flavours / Taste	Positioning
Ocado Guacamole Dip	Avocado; Tomato, not specified; Chili, not specified	Time Saving, Ethical, Vegetarian

## Copperpot Classic Dip - Guacamole

**Product ID:** 477350  
**Company:** COPPERPOT  
**Country:** Australia  
**Category:** Savoury Spreads  
**Event:** Range Extension  
**Event Date:** Aug 2007  
**Region:** Australasia  
**Currency:** AUD  
**Price in US \$:** 3.39  
**Price in Euro:** 2.38  
**Local Price:** 3.19  
**Price / Kg in US \$:** 16.93  
**Price / Kg in Euro:** 11.91



### Product Description

**Description:** Guacamole dip in a plastic container held in a cardboard sleeve.  
**Claims / Features:** No added gluten. No artificial colorings. No artificial flavorings. Certified halal.

**Patent**

### Ingredients and Nutrition

**Ingredients:** Avocado (48%) (avocado pulp, salt, food acids [E270, E300]), cream cheese (milk, cream, milk solids non-fat, salt, vegetable gum [E410], food acid [E270], starter culture), sweet chilli sauce (chillies, garlic, salt, food acid [E260], vegetable gum [E415], suga

**Nutrition:** Per Serving size: 20g, Fat: 16g, Protein: 3.3g, Total Carbohydrate: 7.9g, Energy(kj): 785, Sugar: 1g, Sodium(g/mg): 285mg  
**Fat: 16g; Protein: 3.3g; Carbohydrate: 7.9g**

### Product Analysis

**Primary Package:** Cardboard Sleeve  
**Secondary Package:** Plastic Container  
**Individual Pack Size:** 0.2 kg  
**Total Pack Weight:** 0.2 kg  
**Quantity Per Pack:** 1  
**Shelving Details:** Fridge  
**Barcode:** 9310866000290

### Product Variants

Product Variants	Flavours / Taste	Positioning
Copperpot Classic Dip - Guacamole	Guacamole	Halal, Ready Prepared, Gluten Free, No Additives/Preservatives, Allergy, Vitamin/Mineral Fortified
Copperpot Classic Dip - Roasted Capsicum	Capsicum; Roasted	Halal, Ready Prepared, Gluten Free, No Additives/Preservatives, Allergy, Vitamin/Mineral Fortified

## Coles Avocado Dip

**Product ID:** 771595  
**Company:** COLES  
**Country:** Australia  
**Category:** Savoury Spreads  
**Event:** New Product  
**Event Date:** 11/2009  
**Region:** Australasia  
**Currency:** AUD  
**Price in US \$:** 2.90  
**Price in Euro:** 2.04  
**Local Price:** 2.73  
**Price / Kg in US \$:** 14.49  
**Price / Kg in Euro:** 10.19



## Product Description

**Description:** Avocado dip with lemon and cream cheese.  
**Extra Notes:** Australian made.  
**Claims / Features:** Coles quality promise. Suitable for vegetarians.  
**Patent**

## Ingredients and Nutrition

**Ingredients:** Cream Cheese [Milk, Cream, Milk Solids Non Fat, Salt, Vegetable Gum (E410), Food Acid (E270), Starter Culture], Avocado (12%), Yogurt [Milk, Skim Milk Powder, Cultures], Potato, Canola Oil, Reconstituted Lemon Juice, Spring Onion, Garlic, Citrus Fiber, Thickener (E1442), Color (E141, E160a).

**Nutrition:** Per Serving size: 20g, Fat: 22.2 g, Protein: 4.6 g, Carbohydrate: 5.7 g, Energy(kj): 996, Energy(kcal): 238, Sugar: 3.5g, Saturated Fat(g/mg): 11.6g, Sodium(g/mg): 286mg  
**Fat: 22.2 g; Protein: 4.6 g; Carbohydrate: 5.7 g**

## Product Analysis

**Primary Package:** Plastic Tub  
**Individual Pack Size:** 0.2 kg  
**Total Pack Weight:** 0.2 kg  
**Quantity Per Pack:** 1  
**Shelving Details:** Fridge  
**Barcode:** 9300601341184

## Product Variants

Product Variants	Flavours / Taste	Positioning
Coles Avocado Dip	Avocado; Lemon; Cheese, cream	Ready Prepared, Vegetarian

## Comercial Mexicana City Market Salad

**Product ID:** 1188548  
**Company:** COMERCIAL MEXICANA  
**Country:** Mexico  
**Category:** Prepared Salads  
**Event:** Range Extension  
**Event Date:** Nov 2011  
**Region:** Latin America  
**Currency:** MXN  
**Price in US \$:** 13.24  
**Price in Euro:** 9.31  
**Local Price:** 155.00



### Product Description

---

**Description:** Beetroot, avocado, goat cheese, and pistachio salad with lettuce.  
**Extra Notes:** Keep refrigerated.  
**Patent**

### Ingredients and Nutrition

**Ingredients:** Avocado, beetroot, pistachio, goat cheese, lettuce.

### *Product Analysis*

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**Primary Package:** Plastic Container  
**Shelving Details:** Fridge  
**Barcode:** 2653143155007

### Product Variants

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Product Variants	Flavours / Taste	Positioning
Comercial Mexicana City Market Salad	Avocado; Beetroot; Cheese, goat	Time Saving

## Woolworths Avocado Salad

**Product ID:** 860296  
**Company:** WOOLWORTHS  
**Country:** South Africa  
**Category:** Vegetables  
**Event:** New Product  
**Event Date:** Jun 2010  
**Region:** Africa  
**Currency:** ZAR  
**Price in US \$:** 3.58  
**Price in Euro:** 2.52  
**Local Price:** 24.99  
**Price / Kg in US \$:** 23.13  
**Price / Kg in Euro:** 16.26



### Product Description

**Description:** Creamy avocado, tomatoes and cucumbers on a bed of tender baby butter lettuce.  
**Extra Notes:** This product has been made in a factory that uses tree nuts and peanuts.

**Patent**

### Ingredients and Nutrition

**Ingredients:** Avocado, tomatoes, Salanova lettuce, cucumber, rocket, basil.

**Nutrition:** Per Serving size: 100g, Fat: 6.4g, Protein: 1.2g, Carbohydrate: 1.8g, Energy(kj): 308, Sugar: 1.1g, Saturated Fat(g/mg): 1.5g, Polyunsaturated Fat(g/mg): 1.0g, Monounsaturated Fat(g/mg): 4.0g, Dietary Fibre(g/mg): 2.5g, Sodium(g/mg): 9mg, Other Essential Vitamins: Cholesterol: 11mg  
**Fat: 6.4g; Protein: 1.2g; Carbohydrate: 1.8g**

### Product Analysis

**Primary Package:** Plastic Film-Wrapped Tray  
**Individual Pack Size:** 0.155 kg  
**Total Pack Weight:** 0.155 kg  
**Quantity Per Pack:** 1  
**Shelving Details:** Fridge  
**Barcode:** 6 009000 064467 W

### Product Variants

Product Variants	Flavours / Taste	Positioning
Woolworths Avocado Salad	Lettuce, not specified; Cucumber; Tomato, not specified	Ready Prepared



# Waitrose Mild Avocado & Baby Plum Tomato Salad

**Product ID:** 890002  
**Company:** WAITROSE  
**Country:** United Kingdom  
**Category:** Vegetables  
**Event:** Range Extension  
**Event Date:** Aug 2010  
**Region:** West Europe  
**Currency:** GBP  
**Price in US \$:** 4.04  
**Price in Euro:** 2.84  
**Local Price:** 2.49  
**Price / Kg in US \$:** 19.23  
**Price / Kg in Euro:** 13.53



## Product Description

**Description:** Avocado and baby plum tomato salad with a mix of romaine lettuce and baby spinach, cucumber and a separately packed balsamic dressing, in a plastic container.  
**Extra Notes:** Allergens: Contains mustard.  
**Claims / Features:** 2 of your 5 a day. Suitable for vegetarians.  
**Patent**

## Ingredients and Nutrition

**Ingredients:** Baby plum tomatoes, romaine lettuce, avocado, balsamic dressing (water, rapeseed oil, balsamic vinegar, dijon mustard [water, mustard flour, spirit vinegar, salt, mustard husk, allspice, turmeric], honey, cornflour, garlic puree, salt, black pepper), cucumber, baby spinach.

**Nutrition:** Per 100g, Energy(kj): 282, Energy(kcal): 68, Fat: 5.1g, Protein: 1.1g, Carbohydrate: 4.4g, Sugar: 3.9g, Saturated Fat(g/mg): .8g, Dietary Fibre(g/mg): 1.7g, Sodium(g/mg): .07g  
**Fat: 5.1g; Protein: 1.1g; Carbohydrate: 4.4g**

## Product Analysis

**Primary Package:** Plastic Container  
**Individual Pack Size:** 0.21 kg  
**Total Pack Weight:** 0.21 kg  
**Quantity Per Pack:** 1  
**Shelving Details:** Fridge  
**Barcode:** 5000169145975

## Product Variants

Product Variants	Flavours / Taste	Positioning
Waitrose Mild Avocado & Baby Plum Tomato Salad	Avocado; Tomato, not specified; Lettuce, romaine	Easy-to-Prepare, Vegetarian

# Woolworths Food Ripe & Ready Green Skin Avocados

**Product ID:** 1113635  
**Company:** WOOLWORTHS  
**Country:** South Africa  
**Category:** Vegetables  
**Event:** Relaunch  
**Event Date:** Sep 2011  
**Region:** Africa  
**Currency:** ZAR  
**Price in US \$:** 3.30  
**Price in Euro:** 2.32  
**Local Price:** 22.99



## Product Description

**Description:** Ripe and ready green skin avocados in a polystyrene tray held in a cellophane.  
**Claims / Features:** Farming for the future. Class 1. Smooth and creamy texture.  
**Patent**

## Ingredients and Nutrition

**Ingredients:** Avocados.

**Nutrition:** Per Serving size: 100g, Total Fat: 23.5g, Protein: 1.7g, Total Carbohydrates: 1.9g, Energy(kj): 1020, Protein(g/mg): 1.7g, Dietary Fibre(g/mg): 5.3g, Total Fat(g/mg): 23.5g, MonounSaturated Fat(g/mg): 15.6g, servingtype: 100g, PolyunSaturated Fat(g/mg): 3.0g, Saturated Fat(g/mg): 4.8g, Sodium(g/mg): 3mg, Total Carbohydrate(g/mg): 1.9g  
**Fat: 23.5g; Protein: 1.7g; Carbohydrate: 1.9g**

## Product Analysis

**Primary Package:** Polystyrene Tray  
**Secondary Package:** Cellophane  
**Shelving Details:** Ambient  
**Barcode:** 2005 4731

## Product Variants

Product Variants	Flavours / Taste	Positioning
Woolworths Food Ripe & Ready Green Skin Avocados	Avocado	Ethical

## Monoprix 2 Avocats: 2 Avocados From Spain

**Product ID:** 1051558  
**Company:** MONOPRIX  
**Country:** France  
**Category:** Vegetables  
**Event:** New Product  
**Event Date:** Feb 2011  
**Region:** West Europe  
**Currency:** EUR  
**Price in US \$:** 3.98  
**Price in Euro:** 2.80  
**Local Price:** 2.80



### Product Description

---

**Description:** Two avocados from Spain, in a plastic case presented in a cardboard sleeve.

**Claims / Features:** Ready-to-eat!  
**Patent**

### Ingredients and Nutrition

**Ingredients:** Avocados cultivated in Spain.

### *Product Analysis*

---

**Primary Package:** Plastic Case  
**Secondary Package:** Cardboard Sleeve  
**Shelving Details:** Ambient  
**Barcode:** 3350030207502

### Product Variants

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	Flavours / Taste	Positioning
Product Variants		
Monoprix 2 Avocats: 2 Avocados From Spain	Avocado	

# Marque Repere Notre Jardin 2 Avocat Murs a Point: 2 Ripened Avocados

**Product ID:** 997386  
**Company:** SCAMARK  
**Country:** France  
**Category:** Vegetables  
**Event:** New Product  
**Event Date:** Dec 2010  
**Region:** West Europe  
**Currency:** EUR  
**Price in US \$:** 3.06  
**Price in Euro:** 2.15  
**Local Price:** 2.15



## Product Description

**Description:** Two ripened avocados in a plastic container.  
**Patent**

## Ingredients and Nutrition

**Ingredients:** Avocado.

## Product Analysis

**Primary Package:** Plastic Container  
**Shelving Details:** Ambient  
**Barcode:** 3564700448687

## Product Variants

Product Variants	Flavours / Taste	Positioning
Marque Repere Notre Jardin 2 Avocat Murs a Point: 2 Ripened Avocados	Avocado	

## Avocats Prets A Deguster: Ripened Avocados

**Product ID:** 931602  
**Company:** COMEXA  
**Country:** France  
**Category:** Fruit  
**Event:** New Product  
**Event Date:** Aug 2010  
**Region:** West Europe  
**Currency:** EUR  
**Price in US \$:** 4.20  
**Price in Euro:** 2.95  
**Local Price:** 2.95



### Product Description

---

**Description:** Two ripened avocados in a plastic container.  
**Claims / Features:** Maturity guarantee. Ready-to-eat.  
**Patent**

### Ingredients and Nutrition

**Ingredients:** Avocado.

### *Product Analysis*

---

**Primary Package:** Plastic Container  
**Shelving Details:** Ambient  
**Barcode:** 3276552662387

### Product Variants

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Product Variants	Flavours / Taste	Positioning
Avocats Prets A Deguster: Ripened Avocados	Avocado	

# Comexa Avo' Barq' Avocats Prets a Deguster: Ready to Eat Ripened Avocado

**Product ID:** 796457  
**Company:** COMEXA  
**Country:** Chile  
**Category:** Vegetables  
**Event:** New Product  
**Event Date:** Jan 2010  
**Region:** Latin America  
**Currency:** CLP  
**Price in US \$:** 0.01  
**Local Price:** 2.95



## Product Description

**Description:** Two ready-to-eat avocados in a special plastic container.  
**Claims / Features:** Ripening guarantee.  
**Patent**

## Ingredients and Nutrition

**Ingredients:** Avocado.

## Product Analysis

**Primary Package:** Plastic Container  
**Shelving Details:** Ambient  
**Barcode:** 3276552662325

## Product Variants

Product Variants	Flavours / Taste	Positioning
Comexa Avo' Barq' Avocats Prets a Deguster: Ready to Eat Ripened Avocado	Avocado	Ready Prepared

**Appendix 2 – Prototype fresh-cut products**



## **Appendix 3 – Typical moderator’s guide for focus group**

### **Sample group discussion guide**

#### **Preamble**

#### **Introduction and why you bought your last avocado**

**What are the most important things to consider when buying an avocado?**

**What benefits do you associate with avocados?**

#### **Product sort**

1. I have a group of products that I would like you to sort into different piles according to some criteria.
2. Confirm how the piles are sorted. Explore benefits associated with piles, explore the drawbacks...
3. Is there agreement? Explore other ways to sort products.
4. Probe on interest for product groups
5. Probe – what is fresh, when does a product become processed
6. Probe for context

Is there a time and place where whole fresh avocados/processed avocado products are more appropriate to buy?

Probe – explore context for preference for whole avocado

Probe – explore context for preference for processed products

Probe – are processed products a substitute for avocado

Probe – do processed products affect the purchase of whole avocado

**Please turn to page two of the booklet to section 2 and carry out the sentence completion exercises.**

Whole avocados from Australia are....

Processed avocado products are...

Imported processed avocados are...

#### **Present products with country of origin**

Probe – do perceptions change

Probe – do perceptions change if imported products are less expensive than whole avocado, or Australian processed products

#### **Picture metaphor exercise**

Participants pick a picture that represents how they feel about whole Australian avocados.

Discuss what this means – probe for higher order values

Participants pick a picture that represents how they feel about processed imported avocado products

Discuss what this means – probe for higher order values



Thank you everyone, we are just about finished. Before we leave I'd like to hear if there is an important point or feature that you will walk away with from tonight's discussion?

## Appendix 4 - Example of choice analysis score card

How interested are you in this product for yourself or your family?  
On a 1-9 scale  
1 = Not at all interested, 9 = Very interested



One Avocado  
Ripe  
\$2.49  
From Australia

1    2    3    4    5    6    7    8    9

1 = not at all interested

9 = very interested <sub>3</sub>