Understanding attributes that inhibit the purchase and consumption of vegetables - Capsicum and Asian Greens

Heath Adams
Sprout Research Pty Ltd

Project Number: VG12069

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This report is published by Horticulture Australia Ltd to pass on information concerning horticultural research and development undertaken for the vegetables industry.

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VG12069: Understanding the attributes that inhibit purchase and consumption of vegetables - Capsicum and Asian Greens

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Report Purpose Statement

The purpose of this report is to collate and examine all the information gathered over the life of this project and to provide industry with insights into understanding the attributes that inhibit purchase and consumption of vegetables, specifically capsicums and Asian greens.

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1.0 Media Summary

1.1 Key Components

The research project consisted of two key components:

- Exploratory qualitative research
- Online quantitative research

The qualitative research consisted of three separate methods; six facilitated focus groups, ten assisted shops and an online consumer lens (community blog). The purpose of this research was to explore the nature of the Asian green and capsicum categories in the eyes of the consumer, and their decision-making processes at the point of purchase. The quantitative study that followed was used to quantify and validate consumers' actual purchasing behaviour.

1.2 Industry Significance

This research design was elected to help the vegetable supply chain better understand which attributes drive and inhibit the purchase and consumption of Asian greens and capsicums. As such, the project results sought to assist HAL and vegetable growers in gaining a better understanding of what factors impact consumer's decision to buy capsicums and Asian greens. The research also sought to aid HAL in formulating marketing and communications strategies to increase overall consumer purchase. Previously identified purchase inhibitors and drivers were explored to develop a prioritized list of purchase drivers.

1.3 Key Outcomes and Conclusions

The results for the both categories found the following key drivers and barriers to purchase:

Capsicums	
✓ **Drivers**	✗ **Barriers**
1. I use it in a specific meal	1. Capsicum doesn't suit the meals I cook
2. I like the taste/flavour	2. I dislike the taste
3. I buy it as a staple vegetable	3. Others in the household don't like them
4. They are good for you	4. I never thought about buying it
5. They are versatile	-

Asian Greens	
✓ Drivers	✗ Barriers
1. They are good for you	1. Asian greens don't suit the meals I cook
2. I use it in a specific meal	2. I never thought about buying them
3. I like the taste/flavour	3. I don't how to cook them
4. They suit the type of cuisines I like to cook	4. Others in the household don't like them
5. I buy it as a staple vegetable	-

1.4 Recommendations in the future and for practical application to industry

These findings gave way to a list of recommendations for future research and for practical application within the industry. There is opportunity to highlight the various ways in which both capsicums and Asian greens can be used in meals and recipes. Communicating an emphasis for both products on flavour, health benefits, versatility and "reliable vegetable" status would aid the current industry in educating their consumers and increasing awareness and consideration. Further exploration of the consumer segments identified during the research project would assist HAL to fully understand the decision-making processes and attitudes that influence purchase behaviour. It is also recommended that a similar research study be undertaken to further investigate the drivers and inhibitors of purchase for the broader vegetable category, as both appear unique in interpretation across the two vegetables explored.

2.0 Technical Summary

2.1 The nature of the problem

Consumers' purchase behaviour is influenced by a number of factors when buying vegetables, specifically capsicums and Asian Greens. However, current research regarding these purchase drivers and barriers is extremely limited.

2.2 The science undertaken

The research methodology was developed by considering the overall project objectives and looking into past secondary research. A combination of desktop research, telephone interviewing, qualitative research and quantitative research was implemented:

1. **Desktop Research** consisted of gathering secondary research as a means of understanding current research within the industry relating to the current research question. It was used heavily as a point of reference for developing the objectives for this research project.

2. **Qualitative Research** included facilitated focus groups as an exploratory means of identifying the barriers, drivers and inhibitors by the consumer segments. Six groups of nine respondents (per group) were run across Brisbane, Melbourne and Sydney (x2 for each state) for each vegetable.

3. **Assisted Shops & an Online Consumer Lens** took the research to the point of purchase. In the Assisted Shops, the market researcher immersed him or herself in the purchasing process with the consumer as a means of observing the drivers and inhibitors at the point of purchase, recording real-time behaviour. Ten assisted shops were conducted. The 5-day long Consumer Lens was used as a means of collecting information from consumers about their purchasing behaviour and decision-making processes. Information was received in a variety of forms (photos, videos, written blogs etc).

4. **The Online Quantitative study** analyzed consumers' actual purchasing behaviour (capsicums or Asian greens). The quantitative study consisted of a 20 minute survey covering capsicums and Asian greens with an n=200 for NSW, VIC and QLD, & n=100 for SA, WA and TAS. A total of 900 surveys were completed. Data was post-weighted to the latest ABS Census for age and gender as well as incidence of vegetable buying as defined by the Omnibus survey.

2.3 Research findings and industry outcomes

Major findings of the research included:

- Five key purchase drivers for capsicums:
    - Usage in specific meals
    - Liking of the taste/ flavour
    - Use as a staple vegetable

    - Health benefits
    - Versatility
- Four key purchase barrier for capsicums:
    - Unsuitable for meals
    - Disliking the taste/flavour
    - Others in household dislike them
    - Low awareness (not top of mind – “I didn’t think about it”)
- Five key drivers for Asian greens:
    - Health benefits
    - Usage in specific meals
    - Liking of taste/ flavour
    - Suitability for specific cuisine taste
    - Use as a staple vegetable
- Four key purchase barriers for Asian greens:
    - Unsuitable for meals
    - Low awareness (not top of mind – I didn’t think about it)
    - Others in household dislike them
- 42% of consumers purchase capsicums regularly (as at least once a week), with 31% purchasing occasionally (between once every two weeks and once a month), and 7% purchasing irregularly (less than once a month).
- The majority of people do not purchase Asian greens (42%). Only 16% of people are regular buyers of Asian greens, while 26% are occasional buyers. Irregular buyers account for 15% of the market.
- Although capsicums were perceived as being healthy and good for you, respondents were unsure what specific health benefits capsicums had. This was the same result for Asian greens.

2.4 Recommendations to industry and future work

It is recommended for emphasis to be placed upon flavour, health benefits, versatility and usage options to aid HAL in educating consumers and increasing awareness and limited knowledge about both vegetables. This would help in eliminating low awareness or knowledge, a key purchase inhibitor found in both category studies. Communicating this information in an engaging form would improve overall awareness. Further exploration into the consumer segments identified during this research would further assist HAL in understanding decision-making processes and attitudes that impact behaviour. Similar studies could be conducted to investigate drivers and inhibitors of purchase for other vegetable categories as a means of comparison.

3.0 Introduction

There is a range of factors that influence why consumers do or do not purchase different vegetables including; shape, taste, colour, freshness, convenience, usage, availability, size and price.

Through improving their understanding of the key drivers of customer and consumer behavior and the barriers to greater consumption, levy payers will be better placed to improve their products offering.

This project will help the vegetable supply chain better understand which attributes drive and inhibit the purchase and consumption of vegetable products on a crop specific or crop group basis (commodities). The specific crops this research focuses on are capsicums and Asian greens.

The attributes have been prioritized and a response plan has been created to address the highest priority inhibitors or enhance the key drivers for each crop.

3.1 Literature review

In October 2005, the NSW Department of Primary Industries (NSW DPI) identified two key industry issues within the Asian Greens category:

- The different product names between states cause confusion amongst growers, wholesalers, retailers and consumers
- Consumers are unwilling to try out new products, (even with recipes), due to low awareness and product knowledge.

As a means of overcoming some of these barriers, a National Names system for Asian Vegetables was developed by the NSW Department of Primary industries as part of a project to increase market access for Asian vegetables. Since 2005, NSW DPI has worked with representatives from major retailers and wholesalers (e.g. Coles, Woolworths, Harris Farm Markets), Sydney Markets and the Australian vegetable industry to develop a standardised National system for Asian vegetable names. There has, however, been limited research or action into the issue of low awareness and product knowledge levels, and how to overcome these barriers.

Considering that research (reported by the NSW DPI in March 2011) shows that supply chain profit margins are increasing as more households discover the flavours and health benefits of Asian greens, it is clear that the low levels of awareness and product knowledge are indeed evident barriers that require investigation.

In 2005 John Burt of South Perth, provided a review on growing capsicums and chillies. In this, he stated that there was “an increasing demand in Australia for new ways of using capsicums for culinary use”. According to the AUSVEG Capsicum spotlight report (2011),“Consumption of capsicums has risen in recent years but has hit a peak”. Not unlike Asian greens, low levels of product knowledge and usage restrict the capsicum category.

The literature review reveals that in the past little action has been taken into investigating and exploring the barriers and drivers for Asian green and capsicum purchase. This is particularly evident in the capsicum category, which shows extremely limited research in these areas.

The results from this study will assist HAL and vegetable growers to understand what factors impact upon the consumer decision to buy capsicums and Asian greens. They will further aid HAL in devising marketing and communications materials with the aim of increasing purchase of capsicums and Asian greens. This may be facilitated by eliminating perceived barriers associated with the purchase of capsicums and Asian greens, and emphasizing the key drivers of purchase and consumption to encourage increased purchase. This research approach, adopted from looking at past secondary research, seeks to prioritize purchase drivers, explore previously identified inhibitors and identify any new barriers that may surface.

4.0 Materials and Methods

The methodology was developed by considering the overall project goals and specific terms of reference. Both Sprout and the representative of the designated vegetable levy payer agreed upon a two-part process for the project.

The design and scope of the project was defined during consultation with the vegetable industry to ensure a solid working relationship and project understanding from the project's inception. A desktop review was used to crystallize existing knowledge and identify;

1. Current knowledge on barriers/inhibitors for each commodity
2. Hypotheses on ways to increase demand for each commodity
3. International opportunities and ideas for further research
4. New product ideas outside of Australia
5. Distribution opportunities
6. Ideas and expectations of project stakeholders

A Stop/Go Trigger Workshop was used as a means of presenting a "Research Overview – Milestone Report" which included a review and analysis of the research findings to date. The project team was able to review the findings and confirm or adjust the future direction of the project including any in-market research as needed.

Based on the literature review completed, a research plan was developed to apply to the six identified factors. The goal of the research was to further define and prioritize the attributes that drive and inhibit purchase and consumption of the target vegetables.

A robust method was designed, allowing decisions to be made with absolute confidence. A combination of telephone interviewing, qualitative research and quantitative research was implemented:

1. **The Telephone Omnibus** played two critical roles in establishing incidence and weightings to ensure accurate data and segmentation in terms of consumer's frequency of consumption. A sample of 1,200 Australians, 18 years and over, were surveyed, with each commodity assigned two questions. The Omnibus was conducted by Newspoll, Australia's leading polling organization.

2. **Qualitative Insights** was led by a method of facilitated focus groups as an exploratory means of identifying the barriers, drivers and inhibitors by the consumer segments. Probing in the focus groups identified opportunities for growth amongst different consumer segments. Six groups of nine respondents (per group) were run across Brisbane, Melbourne and Sydney (x2 for each state) for each vegetable (12 groups in total). Each session ran for 1.5 to 2 hours each and was led by discussion guides developed by the project team. The groups were segmented as "occasional", "regular" and "non-users" of the commodity as identified by the telephone Omnibus. The group participants presented a mix of ages and life stages.

3. **Assisted Shops & an Online Consumer Lens** took the research to the point of purchase. In the Assisted Shops, the market researcher immersed him or herself in the purchasing process with the consumer as a means of observing the drivers and inhibitors at the point of purchase, recording actual buying habits as they happened. N=4 Assisted Shops were conducted in Sydney and n=6 in Brisbane. The participants were all main household grocery buyers and were a mix of genders, ages and regular and occasional consumers. The 5-day long Consumer Lens project was an addition to the original scope of the Assisted Shops after the findings from the qualitative research had been analyzed. The online community was used as a means of collecting blogs, photos, videos and extensive written feedback from the participants about their purchasing behaviour and decision making processes. The market research moderator was able to probe the respondents further throughout the duration of the Consumer Lens.

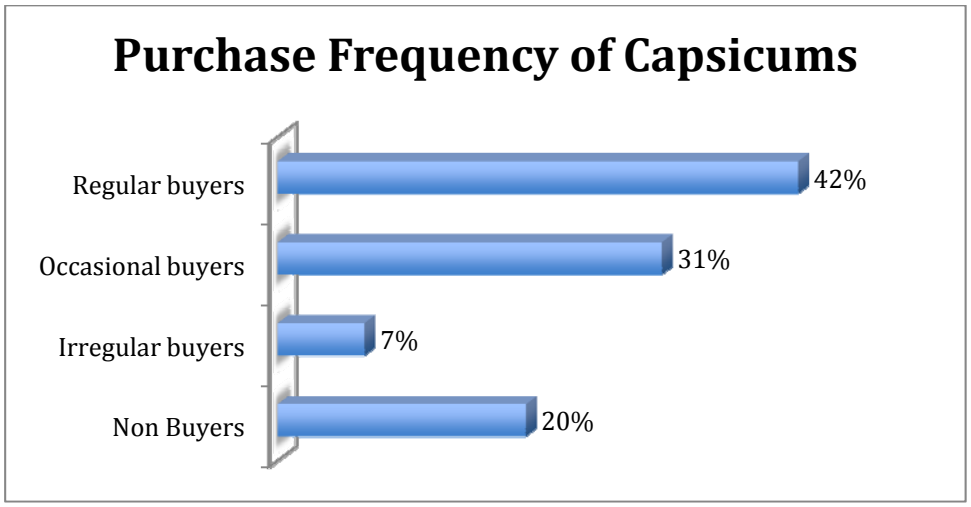
4. **The Online Quantitative** study was used to analyze consumers' actual purchasing behaviour in isolation from their attitude towards the commodity. The focus was on a specific purchase occasion, and for that occasion, regardless of whether the commodity was actually purchased or not. Purchase was determined by respondents having to have purchased that vegetable in the past two days. A Choice Model was used to identify the impact of each barrier and driver to purchase. The full list of drivers developed from the qualitative study was related to the choice of the commodity. The quantitative study consisted of a 20 minute survey covering capsicums and Asian greens with an n=200 for NSW, VIC and QLD, & n=100 for SA, WA and TAS. A total of n=900 surveys were completed. Data was post-weighted to the latest ABS Census for age and gender as well as incidence of vegetable buying as defined by the Omnibus survey. The survey weighting process and sample profile can be found in the appendix of this report (Appendix 2).

5.0 Results

CAPSICUMS

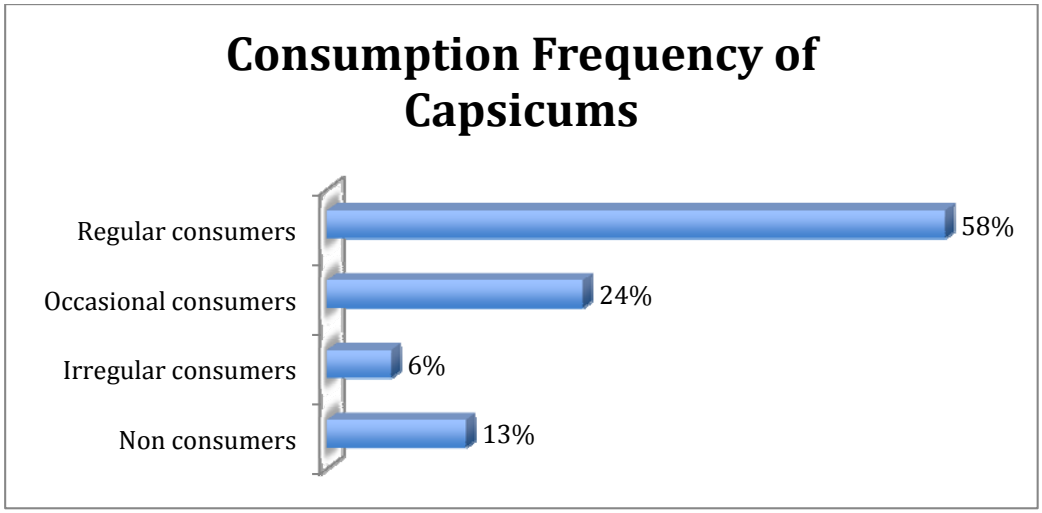
5.1.1 Capsicums: Current Market Size

A high proportion of consumers purchase capsicums regularly which is defined as at least once a week (42%), with 31% purchasing occasionally (between once every two weeks and once a month), and 7% purchasing irregularly (less often than once a month). 20% of the population never purchase capsicums. This is shown in the chart below.



Base: Newspoll omnibus national representative sample n=1000

Consumption of capsicums follows a similar pattern, with almost 60% consuming capsicum on a regular basis (at least once a week). This indicates that multi-purchase of capsicums occurs with multiple eating occasions resulting from the purchase. 24% consume capsicums occasionally (between once every two weeks and once a month), and 6% consume capsicums irregularly (less often than once a month). There are 13% of people who do not consume capsicums. This is shown in the chart below.



Base: Newspoll omnibus national representative sample n=1000

5.1.2 Drivers of Capsicum Purchase

A list of potential purchase drivers for capsicums was developed from initial qualitative investigation across both regular and occasional buyers of capsicums (see table below).

Potential drivers for buying capsicums
Wanted to use in a specific meal
Always buy capsicums as a staple vege
Was craving capsicum
I / we like the taste
I / we like the texture
I / we like the colour(s)
Easy to cook with
They are good for you / healthy
They are versatile (i.e. can be used in a variety of meals / dishes)
They last a long time in the fridge
They suit the type of cuisines I like to cook
They were on special / cheaper than usual
They were good value for money compared to other veges
They looked fresh / high quality

This list was then shown to respondents in an online survey to select which factors influenced them to purchase capsicums on the last occasion they had bought them. Respondents were asked to rate how important each of the factors they selected was in choosing to buy capsicums. The table below outlines these results.

Drivers for buying Capsicum	Mean Importance
1. Wanted to use in a specific meal	19.6
2. I like the taste / flavour	14.5

3. Always buy capsicum as a staple vege	13.1
4. They are good for you / healthy	11.3
5. They are versatile (i.e. can be used in a variety of meals / dishes)	10.8

Base: Those who purchase capsicum in the last two days (n=452)

The principal driver of capsicum purchase identified in the survey was the planned use of capsicum for a specific meal occasion (people buy capsicums with a specific meal in mind where capsicum is an ingredient).

The second most important driver of purchase was a liking for the taste or flavor.

The third most important driver of purchase related to the role of capsicum as a staple vegetable. Capsicums are often purchased as a vegetable to have in the fridge, for use in a number of different meals.

The fourth driver of purchase was that consumers considered capsicum to be healthy.

The fifth driver identified was that capsicum is considered to be versatile. Versatility allows it to be added to many types of meals and is regarded as suitable for multiple cuisine types.

5.1.3 Health Benefits of Capsicums

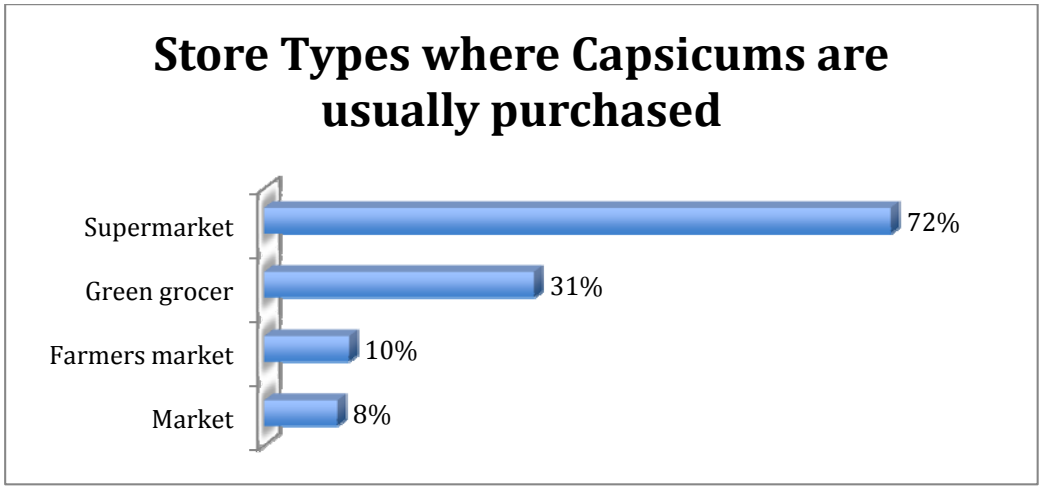
Although capsicums were perceived as being healthy and good for you, respondents were unsure what specific health benefits capsicums had. The health benefits which consumers associate with capsicums are outlined below.

Perceived health benefits	Actual health benefits of capsicums	Proportion who associate health benefit with capsicums
High in vitamin C	High in vitamin c	41%
High in anti-oxidants		28%
High in vitamin A	High in vitamin A	16%
High in iron		9%
They are good for your eyesight		9%
High in vitamin E	Some vitamin E	8%
High in vitamin B	Some vitamin **B6**	7%
High in zinc		7%
High in vitamin D		6%

Base: Those who purchase capsicum in the last two days (n=452)

5.1.4 Capsicum place of purchase

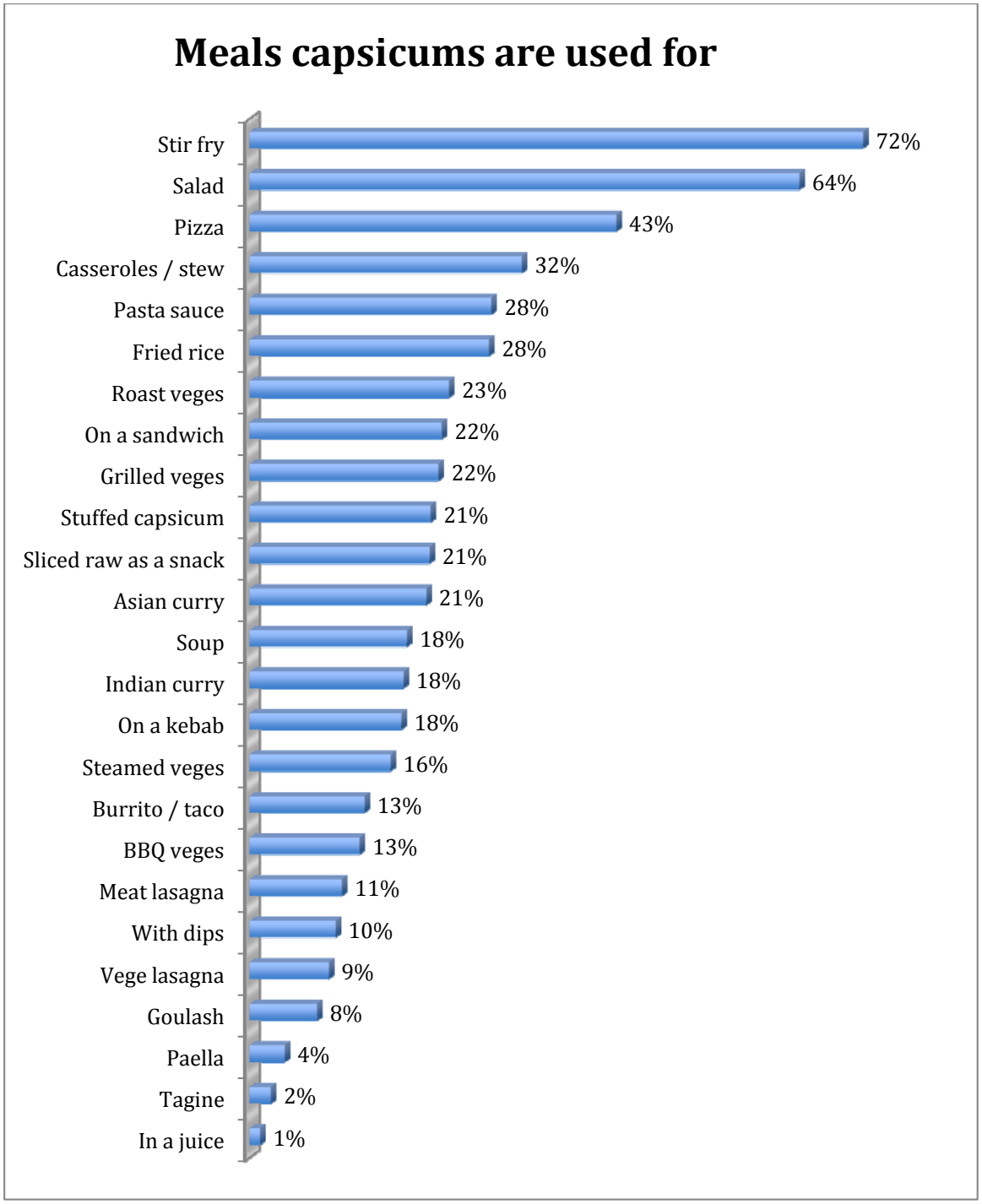
Consumers who buy capsicums usually purchase them from supermarkets, followed by green grocers, farmer's markets and markets (see chart below).



Base: Those who purchase capsicum in the last two days (n=452)

5.1.5 Meals capsicums are used in

Consumers use capsicums most frequently in stir-fries, salads, pizza and casseroles. The list of meal types capsicums are used in is shown below.



Base: Those who purchase capsicums in the last two days (n=452)

5.1.6 Barriers to purchasing capsicums

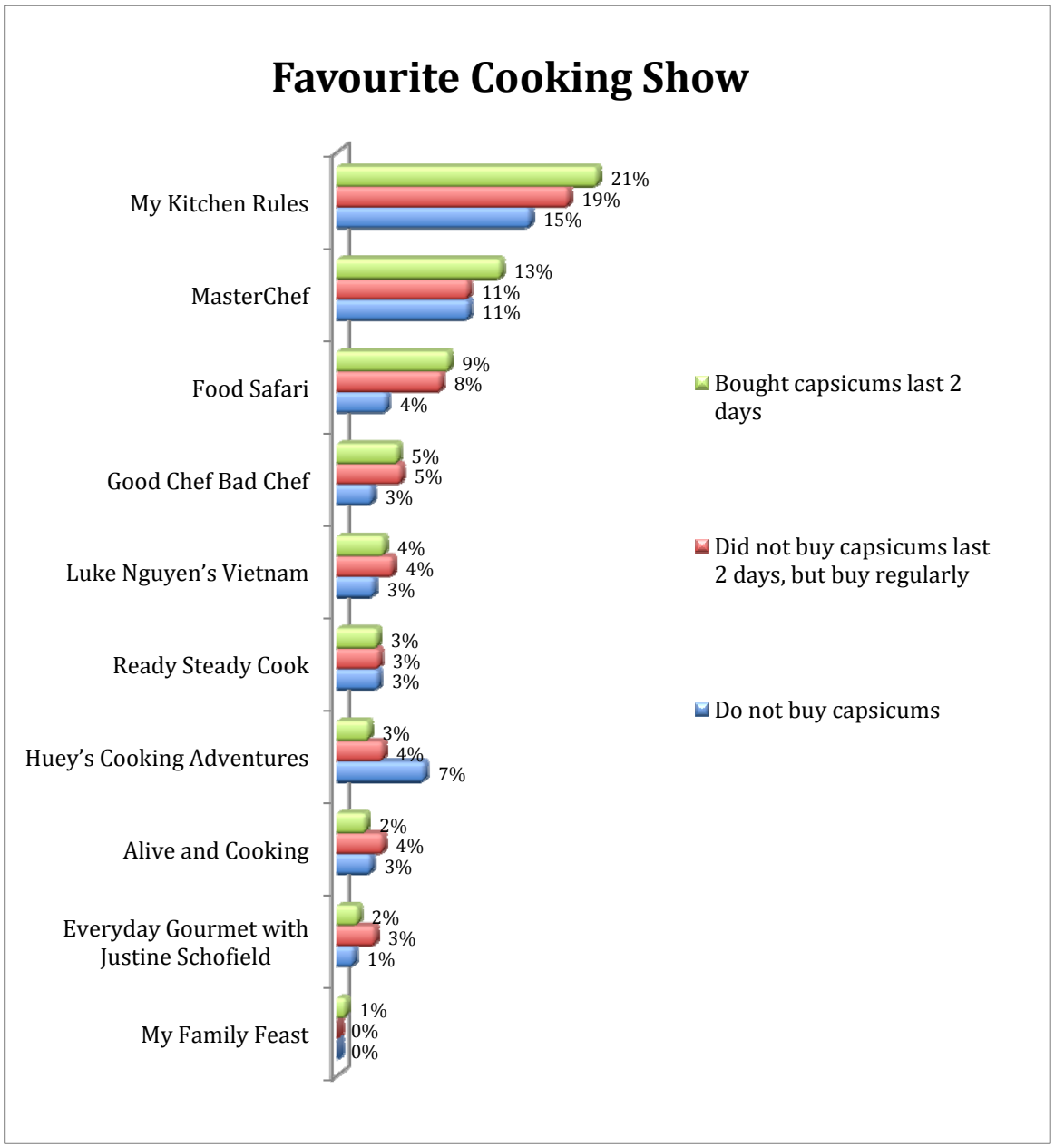
The principal reasons why occasional and non-users do not purchase capsicums are because it does not suit the meals they cook, they or others in their household dislike the taste, or they just did not think about buying capsicums. The top barriers to purchase are listed below.

Barriers to buying Capsicum	Mean Importance
1. Capsicum doesn't suit the meals I cook	23.6
2. Dislike the taste	16.4
3. Others in the household don't like them	10.8
4. I never thought about buying it	10.7

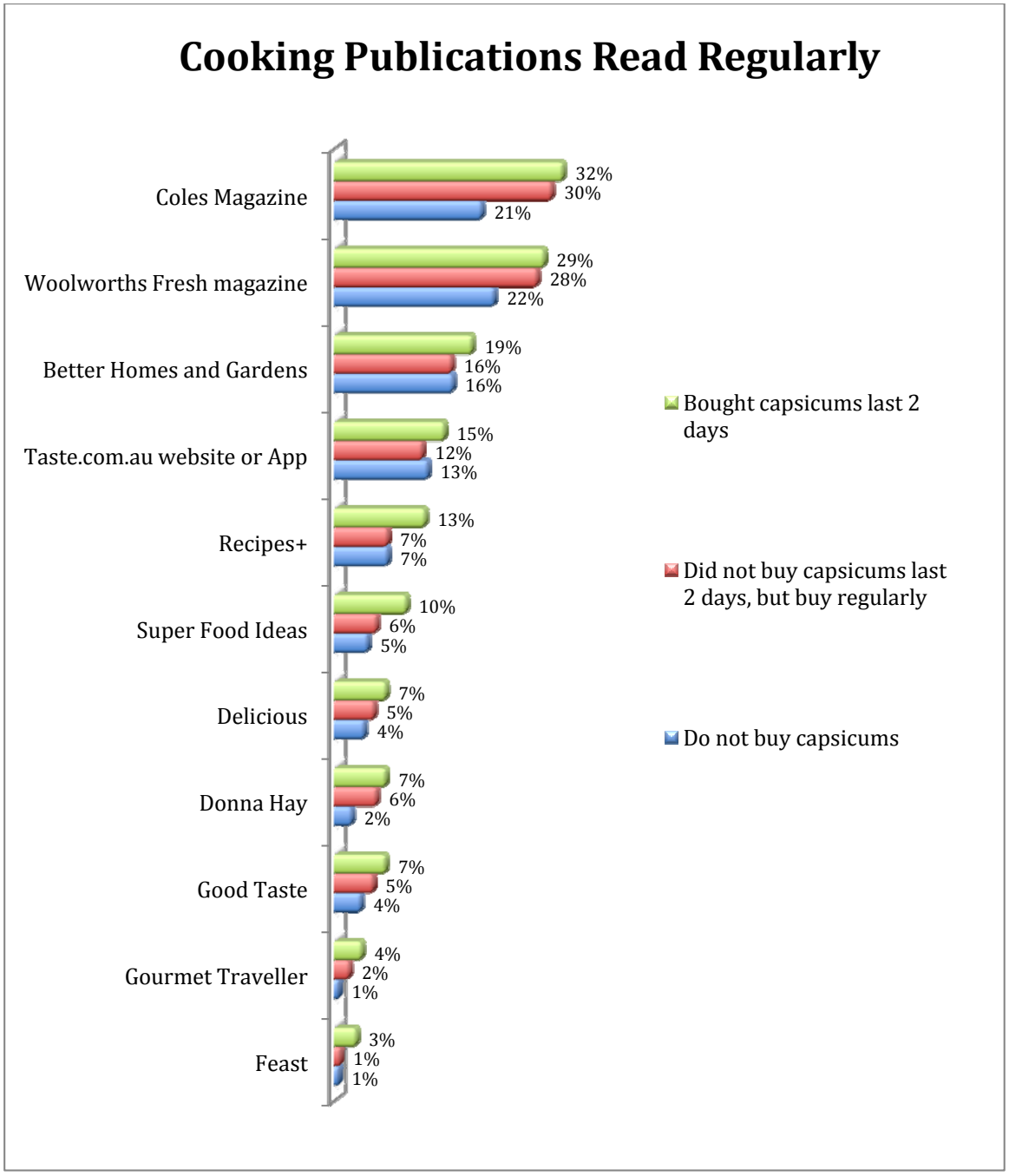
The fact that "Capsicum doesn't suit the meals I cook" is reported as the main barrier to purchase infers that non-buyers are unaware of the versatility of capsicums and the range of meals that they can be used in.

5.1.7 Communication Devices for Buyers and Non-Buyers of Capsicums

The most popular cooking show amongst both buyers and non buyers of capsicums is My Kitchen Rules, followed by MasterChef. The Coles magazine and Woolworths Fresh magazine are the most commonly read cooking publications amongst both buyers and non buyers of capsicums.



Base: Those who purchased capsicums in the last two days (n=452). Those who did not purchase capsicums in the last two days, but regularly buy capsicums (n=154). Those who did not purchase capsicums in the last two days and do not regularly purchase capsicums (n=154).

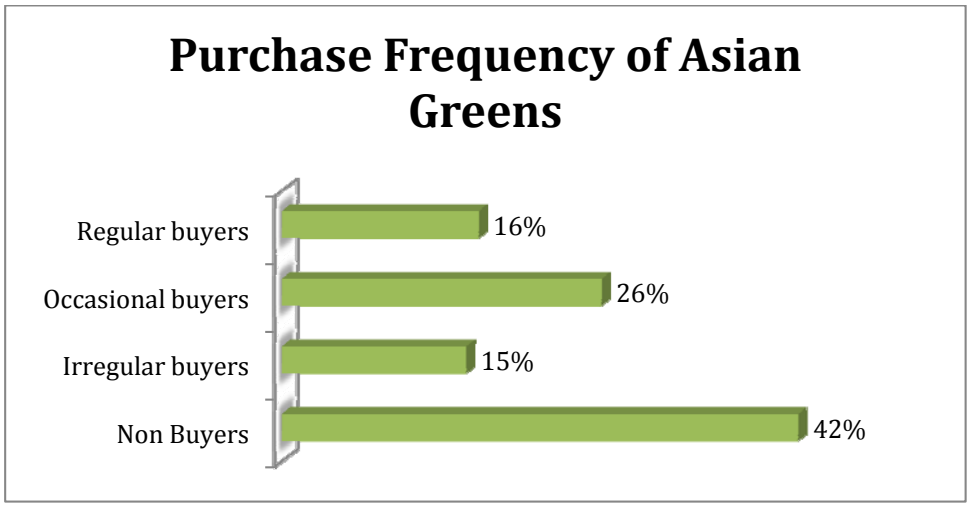


Base: Those who purchased capsicums in the last two days (n=452). Those who did not purchase capsicums in the last two days, but regularly buy capsicums (n=154). Those who did not purchase capsicums in the last two days and do not regularly purchase capsicums (n=154).

ASIAN GREENS

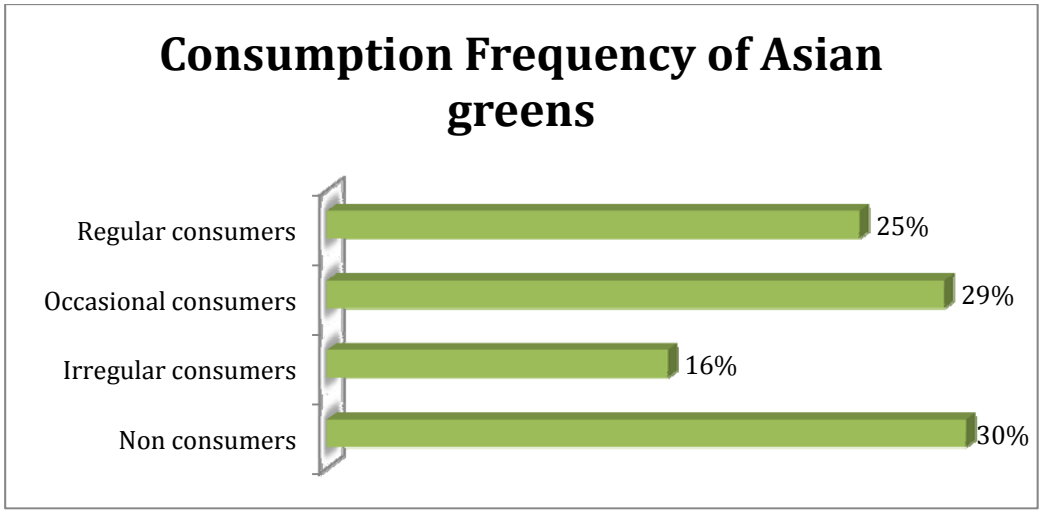
5.1.8 Asian greens: Current Market Size

Only 16% of people are regular buyers of Asian greens (at least once a week), while 26% are occasional buyers (between once every two weeks to once a month). Irregular buyers account for 15% of the market (those who purchase less often than monthly). The majority of people do not purchase Asian greens (42%). This is shown in the chart below.



Base: Newspoll omnibus national representative sample n=1000

While regular purchase of Asian greens is low, consumption frequency is slightly higher, with one in four consuming Asian greens at least weekly (regular consumers), and almost one in three consuming occasionally (between once every two and four weeks). 30% do not consume Asian greens at all. This is shown in the chart below.



Base: Newspoll omnibus national representative sample n=1000

5.1.9 Drivers of Asian Greens Purchase

As with capsicums, a list of potential purchase drivers for purchasing Asian greens was developed from initial qualitative investigation across both regular and occasional buyers of (see table below).

Potential drivers for buying Asian greens
Wanted to use in a specific meal
Always buy Asian greens as a staple vege
Was craving Asian greens
I like the taste / flavour
I like the texture
I like the colour(s)
Easy to cook with
They are good for you / healthy
They are versatile (i.e. can be used in a variety of meals / dishes)
They last a long time in the fridge
They suit the type of cuisines I like to cook
They were on special / cheaper than usual
They were good value for money compared to other veges
They looked fresh / high quality

This list was then shown to respondents in an online survey to select which factors influenced them to purchase Asian greens on the last occasion they purchased them. Respondents were asked to rate how important each of the factors they selected was in choosing to buy Asian greens. The table below outlines these results.

Drivers for buying Asian greens	Mean Importance
1. They are good for you / healthy	14.4
2. Wanted to use in a specific meal	14.0
3. I like the taste / flavour	12.5
4. They suit the type of cuisines I like to cook	10.2
5. Always buy Asian greens as a staple vege	9.7

Base: Those who purchase Asian greens in the last two days (n=453)

The principal driver of Asian green purchase identified was a perception by consumers that they are good for you / healthy.

The second driver of purchase was a requirement to use Asian greens in a specific meal. The qualitative discussions revealed that this preference is typically for Asian cuisine such as stir-fries and noodle dishes

The third driver of purchase identified was a liking or preference for the taste / flavor.

The fourth driver was identified as “suiting the type of cuisine I like to cook”. The fifth most important driver was the purchase of Asian greens as a staple vegetable.

5.2 Health Benefits of Asian Greens

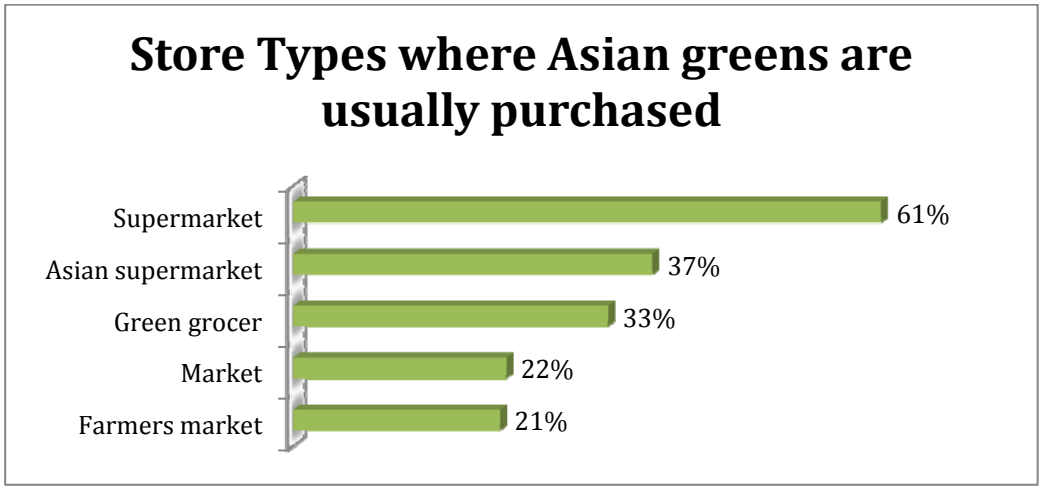
The perceived health related benefits associated with Asian greens was found to be a key purchase driver. When asked specifically what the health benefits of Asian greens were respondents were unsure, with most stating that Asian greens are high in iron – similar to spinach. There were more health benefits associated by consumers with Asian greens than there were for capsicum. The perceived health benefits of Asian greens are listed in the table below.

Perceived health benefits	Actual health benefits of Chinese Cabbage	Actual health benefits of Bok Choy	Proportion who associate health benefit with Asian greens
High in anti-oxidants			39%
High in vitamin C	High in vitamin C	High in vitamin C	36%
High in iron			35%
High in vitamin A	High in vitamin A	High in vitamin A	28%
High in vitamin B			27%
They are good for your eyesight			24%
High in vitamin E			24%
High in zinc			22%
High in vitamin D			20%
	High in folate	High in folate	
	High in dietary fibre		

Base: Those who purchase Asian greens in the last two days (n=453)

5.2.1 Asian greens place of purchase

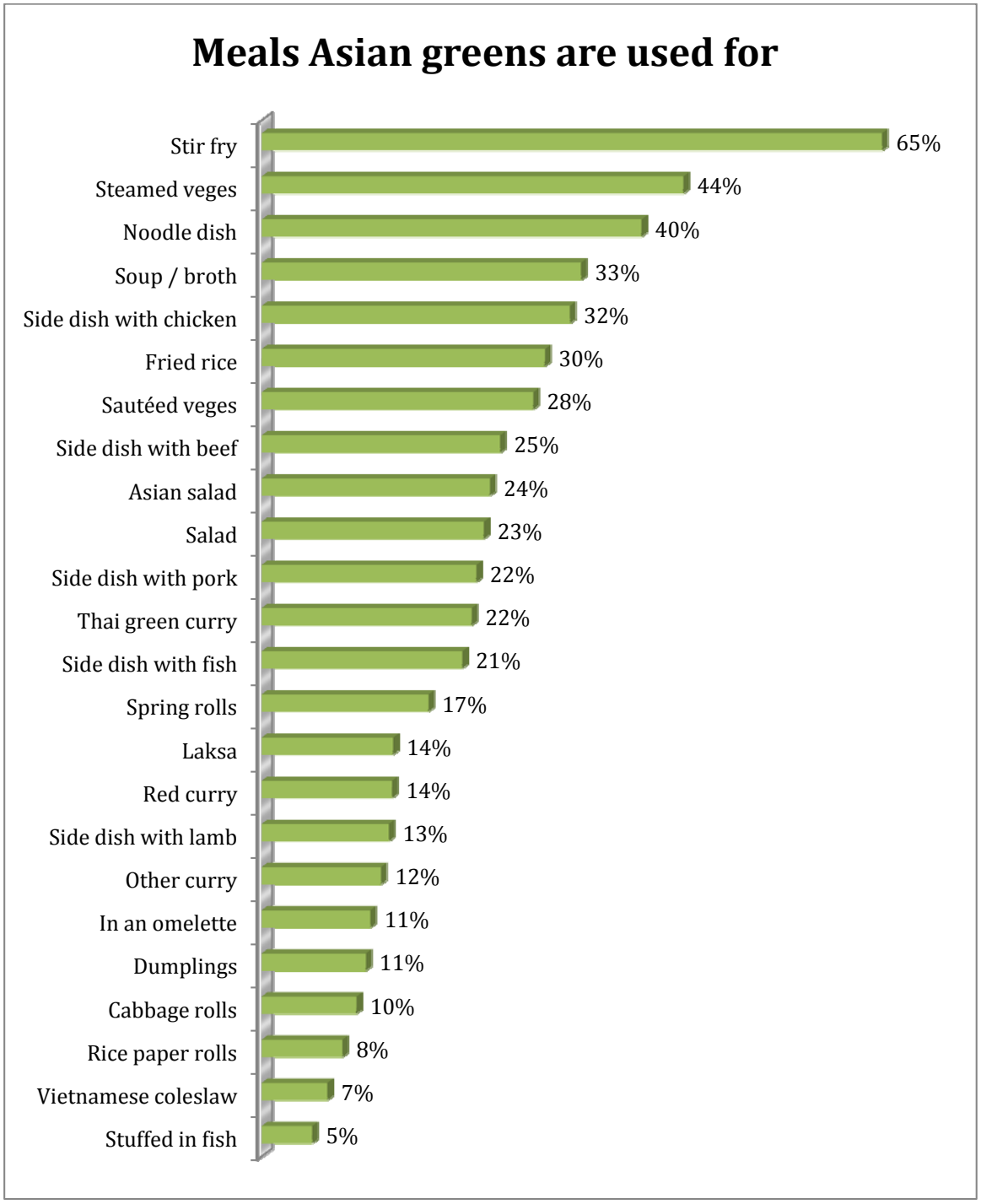
The main place of purchase for Asian greens was the supermarket (61%), despite some buyers feeling that the quality of Asian greens available through supermarkets was low, and tended to be limp and sparse. Asian supermarkets were the second most common place of purchase at 37%, followed by the green grocer and markets. This is shown in the chart below.



Base: Those who purchase Asian greens in the last two days (n=453)

5.2.2. Meals Asian greens are used in

A key purchase driver reported was matching Asian greens as an ingredient to different meal styles, with the most common use reported as a stir-fry. Asian greens were used for the following types of meals.



Base: Those who purchase Asian greens in the last two days (n=453)

5.2.3 Barriers to purchasing Asian greens

The principal reason reported for non-purchase by occasional users was that Asian greens did not suit the meals that this group typically cooked. The group discussions indicated that this was due to Asian greens being associated with Asian dishes. Many believed Asian greens were unsuitable for non-Asian dishes, and did not consider their use as a side vegetable for more traditional meals such as steak.

Secondary barriers to purchase related to poor awareness and knowledge about the vegetable. “I never thought about buying them” and “I don’t know how to cook them” were reported barriers to purchase. Respondents stated they have seen them in the supermarket or at the market, but did not consider purchasing them as they were unsure how to cook them. They reported that they were unsure of the cooking process, unsure of what other ingredients they would go with, or what flavouring or sauces to match them with.

These top three barriers to purchase can be overcome with good communication and targeted messaging. However the fourth barrier to purchase was reported as a dislike of the vegetable, a difficult barrier to overcome.

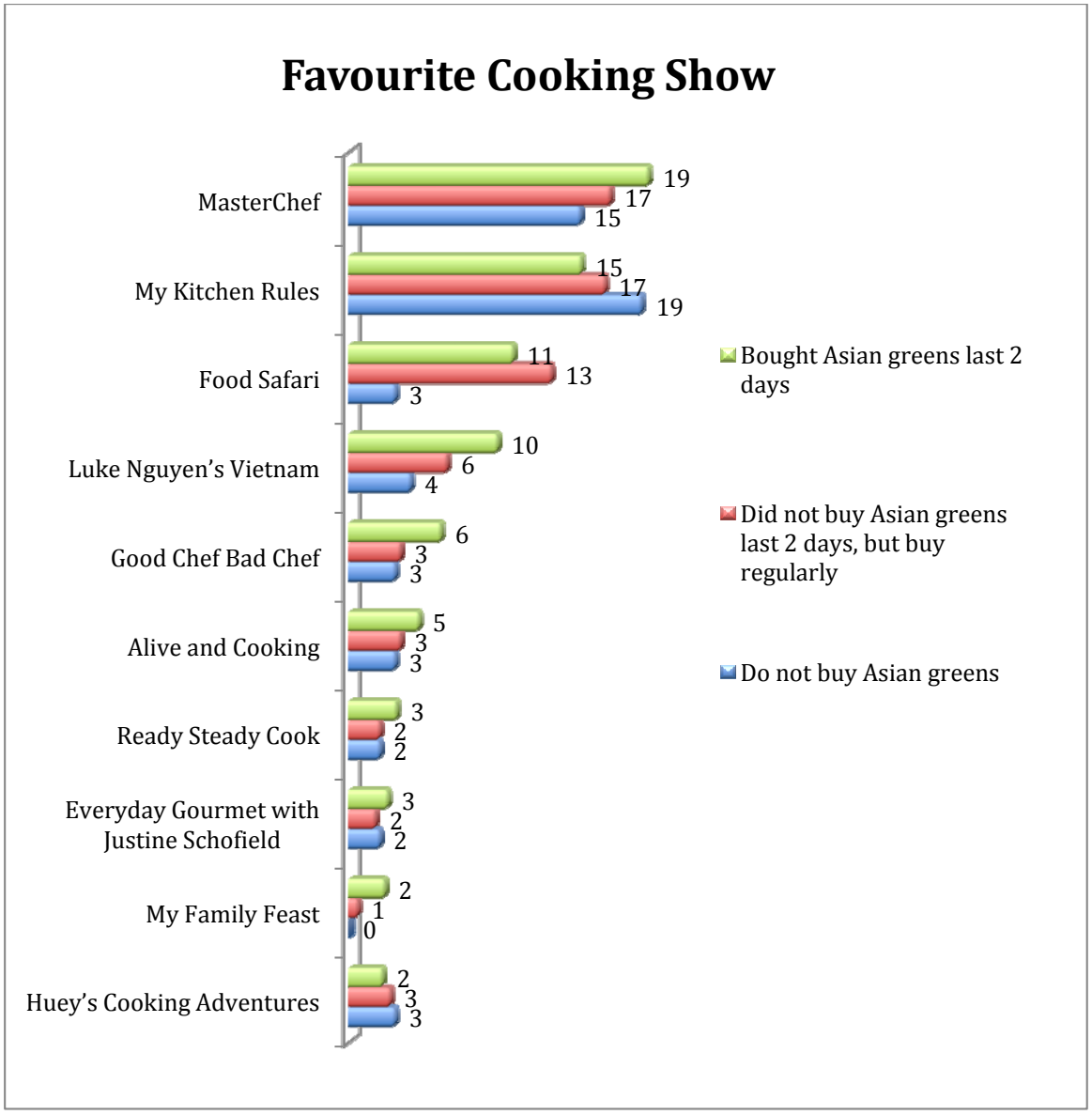
The barriers to purchase of Asian greens are outlined in the table below.

Barriers to buying Capsicum	Mean Importance
Asian greens doesn’t suit the meals I cook	28.2
I never thought about buying them	19.0
I don’t know how to cook them	12.0
Others in the household don’t like them	10.5

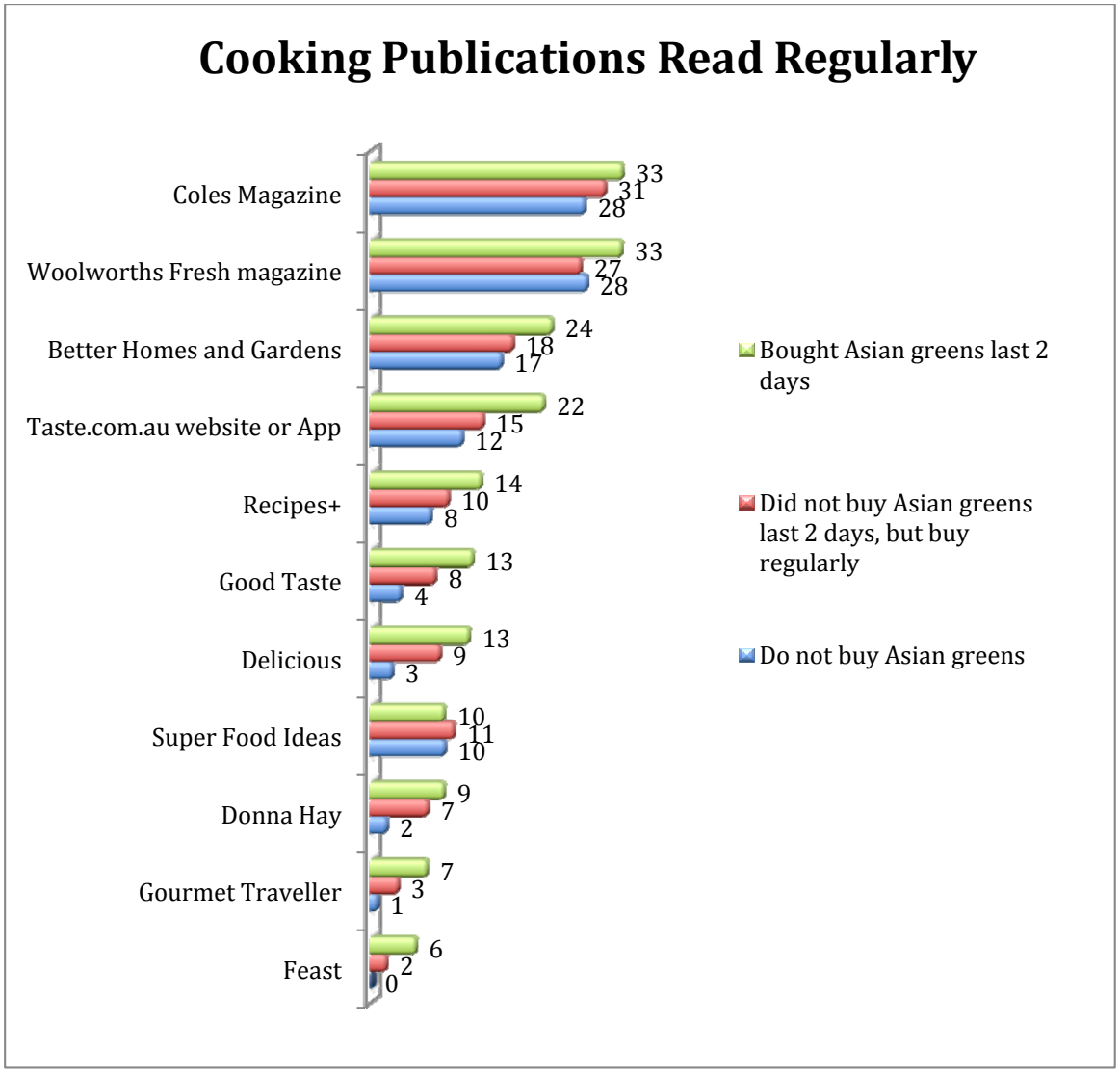
Base: Those who did not purchase Asian greens in the last two days (n=314)

5.2.4 Communication Devices for Buyers and Non-Buyers of Asian Greens

Those who currently buy Asian greens tend to watch MasterChef more so than any other cooking show, while those who don’t buy Asian greens tend to watch My Kitchen Rules. The Coles and Woolworths magazines are the most common cooking publications read by both those who buy Asian greens and those who don’t.



Base: Those who purchased Asian greens in the last two days (n=453). Those who did not purchase Asian greens in the last two days, but regularly buy Asian greens (n=154). Those who did not purchase Asian greens in the last two days and do not regularly purchase Asian greens (n=155).



Base: Those who purchased Asian greens in the last two days (n=453). Those who did not purchase Asian greens in the last two days, but regularly buy Asian greens (n=154). Those who did not purchase Asian greens in the last two days and do not regularly purchase Asian greens (n=155).

6.0 Discussion

The findings of this research uncovered that the majority of people bought capsicums at least once a week or between once every two to four weeks.

Substantially fewer respondents bought Asian greens at the same frequency, and the majority either did not buy Asian greens, or bought them less frequently than once a month.

This indicates that the key to increasing purchase and consumption of capsicums will be to increase the purchase frequency amongst regular and occasional consumers. In contrast, increasing purchase and consumption of Asian greens should be focused on persuading non-purchasers or infrequent purchasers to purchase more products more frequently.

Purchase drivers for capsicums include a desire to use it as an ingredient in a specific meal, a preference for the taste, a need to buy capsicums as a staple pantry vegetable, an appreciation that they are healthy and nutritious, and an acknowledgment that capsicums are a highly versatile vegetable.

The top priority drivers reported were:

1. Buy to use in a specific meal
2. Like the taste
3. Buy as a staple vegetable

Conversely, the barriers to purchasing capsicums identified included capsicum not suiting the meals cooked, a dislike for the taste and an acknowledgement by some shoppers that they never considered buying capsicum. However, with such a high proportion of people currently purchasing capsicums, focus should be directed at emphasizing the drivers of capsicum purchase, rather than minimizing the barriers.

Note: Respondent comments about purchasing and using capsicums can be found in Appendix 4.

Purchase drivers for Asian greens include an acknowledgment that they are healthy, nutritious and good for you, their use as an ingredient in a specific meal type, a liking of the taste, their suitability to the type of meal being cooked, and always buying them as a staple.

The top priority drivers reported were:

1. They are good for you
2. Wanted to use in a specific meal
3. Like the taste flavor
4. Suit the type of meals cooked

The barriers to purchasing Asian greens are a key factor in understanding how to increase purchase, as a high percentage of people do not currently purchase Asian greens. The key barriers to purchasing Asian greens are:

1. They don’t suit the meals I cook – this is most likely Asian style meals
2. I never thought about buying them – low top-of-mind awareness in the consumers’ mind

3. I don’t know how to cook them – low awareness of what they can be used for and the cooking process for Asian greens

Note: Respondent comments about purchasing and using Asian greens can be found in Appendix 5.

It was decided to include the Consumer Lens following the findings that surfaced from the qualitative research. Throughout the focus groups, it was more common for the participants to make most of their initial purchase decisions about capsicums and Asian greens while still at home, as opposed to in-store. The Consumer Lens methodology was therefore adopted as a suitable approach due to its ability to capture real-time experience regardless of location, as well as providing examples in the form of photographs and videos. Respondents were able to provide the moderator with insights into how, when and why they use these vegetables in a variety of forms. The assisted shops were still an integral part of the research project, and were conducted alongside the Consumer Lens. However, for the sake of accuracy, the original methodology was reviewed to provide more in-depth results over a greater scope.

It was found from the qualitative and quantitative phases of the research that consumers’ tendency to purchase capsicums and Asian greens was influenced by their intrinsic attitudes and beliefs. It is hypothesized that these attitudes and beliefs would also influence their purchase of vegetables in general. Quantitative segments were identified from the quantitative data based on these attitudes and beliefs. However these need to be more robustly analysed and explored to draw meaningful conclusions.

7.0 Recommendations

The following section describes the researcher's recommendations for understanding the attributes that drive and inhibit the purchase and consumption of capsicums and Asian greens, and how the purchase of these vegetables can be increased.

7.1. Capsicums

It is recommended that the industry focuses on communicating to those who are currently purchasing capsicums with a targeted marketing strategy, with an objective to increase the incidence of purchase. This can be achieved through consumers either buying more capsicums in the same purchase, or buying capsicums more frequently. This should be carried out using a marketing strategy that focuses on communicating the key drivers of capsicum purchase and its relevance to the everyday lives of consumers.

Key driver 1: *To use in a specific meal*
Communication recommendation: Communicate the multitude of meals that capsicums can be used in. A list of 25 types of meals was identified in the research. These should be used in communications to show the multiple types of dishes that capsicums can be included in. Some less common meal uses include tagine, paella, goulash, vegetable lasagna and burritos / tacos. There is an opportunity to highlight these meals as capsicum dishes when communicating with consumers, to educate them to the many different meals that capsicum can be used in.

Key Driver 2: *Like the taste / flavour*
Communication recommendation: The taste of capsicums was an appealing feature of the vegetable to a wide range of people. Liking the vegetable can be considered a "hygiene factor", meaning it is a given - in order to buy a vegetable the consumer has to like it. Therefore, it is recommended that this be a secondary message when communicating to the consumer, communicated as a background message using phrases such as "the taste you love" or "and "yummy capsicum flavor". However it is essential to ensure that the 'flavourfulness' of capsicums is maintained throughout the supply chain by maintaining a high quality growing process and optimal storage, distribution and retailing.

Key Driver 3: *Buy as a staple vegetable*
Communication recommendation: Due to its versatility and longevity the capsicum was often purchased as a staple vegetable to keep in the fridge "on hand" for unplanned use. It was used when needed and could be added to many types of meals. This can be communicated by positioning capsicums as the 'reliable' vegetable that is there when you need it, and will last long enough until when you want to use it.

Key Driver 4: *They are good for you*
Communication recommendation: Similar to the taste driver, and although still important, the healthy component is a given for most vegetables. Therefore, the health benefit gained from consuming capsicum is a bi-product of eating a vegetable.

This could be a secondary message in a communication campaign, through communicating the specific health benefits. It was found in the research that there is limited accurate knowledge by consumers of what the specific health benefits of capsicums are.

Key Driver 5: *They are versatile*
Communication recommendation: Highlight the ability for capsicum to be used in a wide variety of meals and cuisines, reinforcing its role as a highly versatile vegetable. This driver is linked to key driver 1, with the many types of meals that capsicum can be used in.

Barriers to purchasing capsicums are less of an issue as only a small proportion of people do not currently purchase them. Therefore, it is recommended that the drivers should be the key focus to increasing purchasing, rather than attempting to eliminate the barriers for non-users.

The most prominent barrier to purchase was that's capsicums were not suiting the types of meals cooked by some respondents. This barrier could likely be overcome through implementing the communication strategies linked to key driver 1 and 5 above.

7.2 Asian Greens

In order to increase the purchase of Asian greens, it is recommended to use a communication strategy aimed at overcoming the barriers to purchase. This will increase the likelihood of current non-buyers or infrequent buyers buying Asian greens more often. The key barriers to purchasing Asian greens are outlined below.

Key Barrier 1: *Asian greens don't suit the meals I cook*
Communication recommendation: Asian greens were perceived to be only suitable for Asian cooking. In order to overcome this barrier a two-pronged approach should be adopted.

Firstly, consumers should be educated that Asian greens are not only suitable for Asian dishes. They are also delicious as a side dish to any meal, and can be added to steamed or mixed vegetables. This will allow Asian greens to break into the area of traditional "Australian" meals.

Secondly, consumers can be encouraged to prepare Asian style cuisine by communicating to them the ease, taste and health benefits associated with Asian style cooking.

Key Barrier 2: *I never thought about buying Asian greens*
Communication recommendation: The key to overcoming this barrier is to increase top-of-mind awareness of Asian greens to maximise the likelihood of getting them into the vegetable consideration set of the consumer. This can be achieved by communicating to the consumer through the media channels that they regularly use i.e. the cooking publications and television shows referenced earlier in this report. Awareness can also be increased through the use of in-store methods, including

prominent displays, plentiful and fresh product displays, and take-home brochures and recipe cards educating consumers about the multiple uses for Asian greens.

Key Barrier 3: *I don't know how to cook Asian greens*
Communication recommendation: The lack of consumer knowledge about how to cook Asian greens can be overcome by communicating the methods for cooking Asian greens. This can be achieved through cooking publications and television shows, or through in-store brochures and demonstrations. These media channels can be used to communicate to the consumer the types of meals that Asian greens can be used in, and what other ingredients they can be combined with.

Key Barrier 4: *Others in the household don't like Asian greens*
Communication recommendation: A dislike for Asian greens is a difficult barrier to overcome as people have a natural tendency to either like or dislike the taste of certain vegetables and foods. However an attempt can be made to overcome this barrier by communicating the types and variety of meals with which Asian greens can be used. The aim of this is to find a recipe where consumers have an existing liking for one of those meals. Where children within the household have a dislike for Asian greens, the communication of recipes that are aimed at children where the Asian greens are incorporated into the dish in a manner that is unnoticed by the child, (such as stir-fries or fried rice) may find some success.

The key drivers for purchasing Asian greens amongst non-users should also be considered when communication strategies are developed. Regular users represent a small proportion of the population so should not be the primary target for communication. Rather this group should be used for secondary messaging to encourage purchase. The drivers that could be used for secondary messaging include the health related benefits of eating Asian greens.

7.3 Recommended Communication Channels

It is recommended that the media channels and retail stores that the targeted shopper currently frequents are effective channels of communication.

Supermarkets are the most frequented shopping channel used by consumers to purchase capsicums and Asian greens. Therefore it is recommended communication devices such as in-store brochures, cooking demonstrations and recipe cards are distributed through key supermarket channels, including Coles and Woolworths. Capsicum and Asian green displays within these stores must be optimised to look fresh and plentiful, and have in-store prominence in order to maximise the likelihood of consumers noticing and picking up these vegetables. Refer to Appendix 1 for in-store display examples.

It is further recommended that communications are directed at the intended target market through the most-read cooking publications and most-watched cooking television shows. It is recommended that capsicums and Asian greens are featured on the television shows MasterChef, My Kitchen Rules and Food Safari. It is also recommended that capsicums and Asian greens are featured in the following cooking publications: Coles' magazine, Woolworths Fresh magazine, Better Home and Gardens magazine, and the Taste.com.au website and mobile app.

7.4 Recommendation for Further Research

During the scope of this research, seven segments were identified based on attitudes and behaviours (see Appendix 3). Upon initial investigation each segment displays different attitudes and behaviours in relation to the purchasing behavior of capsicums and Asian greens, as well as vegetables in general. It is recommended that these segments are further explored to fully understand the decision making and attitudes that influence the consumer purchase behavior in relation to vegetables. This will assist HAL and growers to develop more effective communication strategies that target distinct groups within the population. This will optimise the likelihood of targeted communication strategies resonating with specific segments, thereby increasing the likelihood of altering their purchase behaviours.

Furthermore, it is recommended that a similar research study be undertaken to better understand the drivers and inhibitors of purchase for the broader vegetable category other than capsicum and Asian greens. Distinct differences were found between the drivers and barriers or purchasing these two vegetables, indicating that each vegetable probably has its own unique set of drivers and barriers. This should be further researched to confirm whether this is indeed the case.

It is recommended that the outcomes of this research be circulated to not only growers but also to other supply chain participants, including retailers. The project findings indicate that the retail environment plays a large part in maximizing the likelihood of consumers purchasing capsicum and Asian greens.

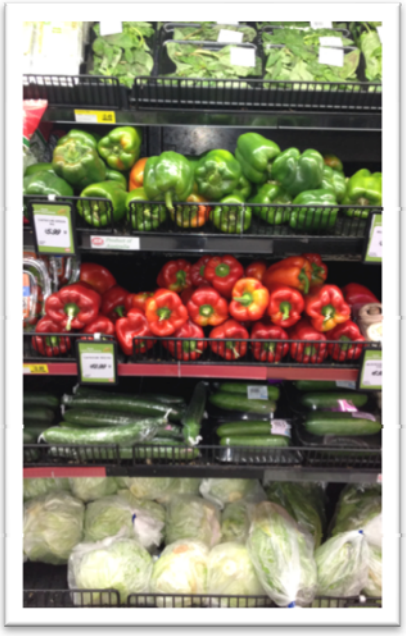
Acknowledgements

HAL

APPENDIX 1. In-store display examples

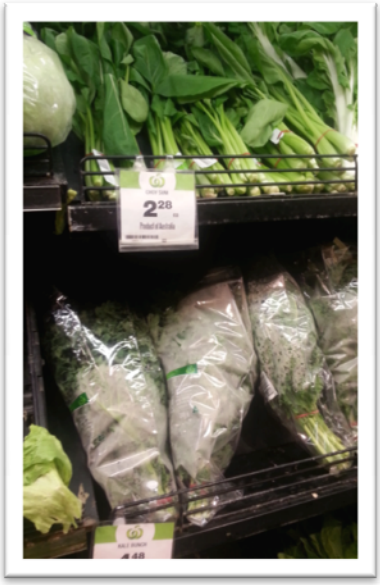
Capsicums:

Bright, noticeable in-store display examples:



Asian Greens:

Plentiful, favoured in-store display examples:



Disliked, untidy, and tired looking in-store display examples:

APPENDIX 2. Survey weighting and sample profile

The survey data weighting process was carried out in two steps:

First step:
Survey click-throughs closely matched Australian population data for age, gender and state. However, results were still corrected so that any skews in those clicking-through to the survey did not affect the mix of the age, gender and location of those who qualified for the survey i.e. bought vegetables in the last two days. Weighting targets for the sample were determined from this incidence data after making the 'click-through' correction.

Second step:
The sample was weighted to targets determined in the first step, for all possible combinations of the quota groups by both age and gender. Respondents were assigned to quota groups and asked questions accordingly. Quotas were set for the groups to insure a sufficient number of respondents were asked each of these question sets. Since these quotas created a skew in the sample compared to the actual incidence of each group, the weighting also corrected for this.

The sample profile of the online study is outlined below.

		No weight %	After weighting %	ABS AUS POP
Age	16-34	35	35	33%
	35-54	34	36	35%
	55+	32	30	32%
Gender	Male	50	48	49%
	Female	50	52	51%
State / territory	NSW	35	33	32%
	VIC	28	27	25%
	QLD	19	19	20%
	SA	6	6	7%
	WA	9	8	10%
	NT	1	1	1%
	TAS	2	2	2%
	ACT	2	2	2%
State capital / regional area	State capital	66	65	
	Regional area	34	35	
Ethnic origin	Australian	63	64	
	European	16	17	
	Asian	15	13	
	Other	7	7	
Household structure	Single person living alone	15	15	
	Single parent with one or more children at home	6	6	
	Couple with one or more child living at home	34	34	
	Couple with all children not living at home	19	18	
	Couple with no children	18	18	
	Extended relatives living together	4	4	
	Group household (non relatives)	4	4	

		No weight %	After weighting %
Age of children in household	0 to 5 years old	18	18
	6 to 12 years old	12	12
	13 to 17 years old	9	8
	18+ years old	12	12
Are you, or anyone in the household...	Vegetarian	9	8
	Vegan	2	2
	Halal	3	2
	Pescetarian	2	2
	Raw vegan	1	1
	None of the above	87	88
Annual household income before tax	$65k and below	36	37
	$66k-$100k	23	22
	Above $100k	22	22
	Prefer not to say	19	19
Capsicum purchase	Bought capsicum last 2 days	47	38
	Did not buy capsicum, regular buyer	36	42
	Did not buy capsicum, not regular	17	20
Asian greens purchase	Bought Asian greens last 2 days	30	19
	Did not buy Asian greens, regular buyer	26	30
	Did not buy Asian greens, not regular	43	51
Assigned group	Bought capsicum last 2 days	30	26
	Bought Asian greens last 2 days	30	19
	Did not buy capsicum, regular buyer	10	15
	Did not buy capsicum, not regular	10	13
	Did not buy Asian greens, regular buyer	10	14
	Did not buy Asian greens, not regular	10	14

APPENDIX 3. Identified segments

The following segments were identified based on attitudinal and behavioural factors. It is recommended that in order to full understand these segments further investigation is required.

The questionnaire included four sets of attitude measures covering the following areas: i) Health, ii) Lifestyle, iii) Cooking, iv) Price and v) Fruit and Vegetable attitudes. All told there were 29 different attitude statements. Factor analysis was used to identify underlying attitudes. In total seven distinct factors were identified, as depicted above. Please note these names are convenient labels only.

		Vegephile	Basic Cook	Entertainer	Choosy Buyer	On the Go	Year Round	Price Conscious
Health and Lifestyle attitudes (Q28)	I have a balanced, healthy diet	0.77						
	I make sure I eat vegetables everyday	0.81						
	I eat a wide variety of vegetables	0.75						
	I take notice of the vegetable "colour pallet"	0.54						
	Getting enough vitamins and minerals is important to me	0.79						
	Getting enough antioxidants is important to me	0.75						
	I am always "on the go"					0.60		
	I like to entertain at home			0.76				
	It is important for family to eat together everyday	0.42		0.49				
	I find it hard to find the time to go grocery shopping					0.74		
Cooking attitudes (Q29)	I find it hard to find the time to cook in the evenings					0.77		
	I find cooking a chore		0.62					
	I get enjoyment from preparing and cooking meals		-0.51	0.61				
	I tend to stick to the same meals each week		0.75					
	I like to be adventurous in the kitchen and try new meals		-0.58	0.53				
	I like cooking for a big group of people			0.76				
	It takes too long to cook meals from scratch		0.49			0.54		
	I tend to cook basic meals		0.75					
	I like to cook a range of cuisines		-0.57					
Price attitudes (Q30)	I always try to buy fruit and vegetables that are on special							0.80
	I don't notice the price of fruit and vegetables							-0.65
	I always stick to a weekly grocery budget							0.51
Fruit and Vegetable attitudes (Q31)	I always buy Australian made products when I can				0.81			
	I always take note of where fruit and vegetables are grown / sourced from				0.82			
	I don't like fruit and vegetables that have been kept in cold storage				0.64			
	I always buy fruit and vegetables that are in season				0.60			
	It bothers me that capsicum is not available year round						0.78	
	It bothers me that Asian greens is not available year round						0.77	
	I don't like buying hydroponic fruits and vegetables						0.53	

This table shows factor loadings (i.e. correlations between attitudes and factors), which in turn shows the make-up of each underlying attitude. Note that only factor loadings greater than 0.4 or lower than -0.4 are shown in this table.

A negative factor loading (with a red marker) indicates disagreement with that attitude statement.

APPENDIX 4. Respondent comments about purchasing and using capsicums

"I find it reasonably easy to prepare compared to some of the other vegetables "

"I just think oh yeah, I'll have that and that and that and end up with a thousand vegetables and then I think, 'what are we having for dinner'? "

"I really like capsicums, they are one of those ones that I really like to include, I don't really know why.... It doesn't need all that much, it is easy to chop up, you don't have to cut it small, just into strips. It softens really quickly, and stir fries really well "

"I buy all kinds of capsicums from my local farmers market, they are very fresh and stay crispy in the fridge "

"I don't mind about the price so much when I'm buying, because I only really buy them when I know I need them "

"When I have in mind a meal that requires fresh capsicums without any cooking, I tend to look for a capsicum that has nice colouring but has retained its firmness because that will generally ensure a nice flavour and a refreshing crunch "

APPENDIX 5. Respondent comments about purchasing and using Asian greens

"Asian greens are only for Asian meals. I wouldn't think to put it with fish or steak"

"I don't know what part of the vegetable to use!"

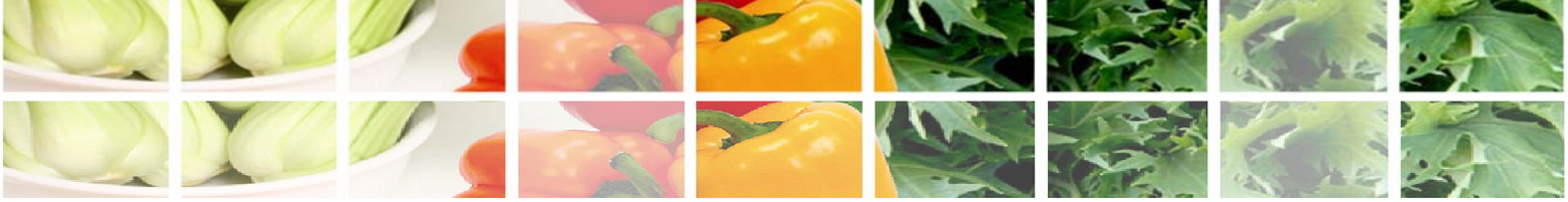
"I need some photos to know what it is. What is the difference between Bok Choy and Pak Choy??"

"I've never been taught how to cook with Asian greens"

"There is never an Asian dish in the recipe cards at Woolies and Coles"

"We don't know much about Asian greens and I don't know how to cook it. So maybe if we know more we would be more likely to cook it"

APPENDIX 6. One page summary for growers



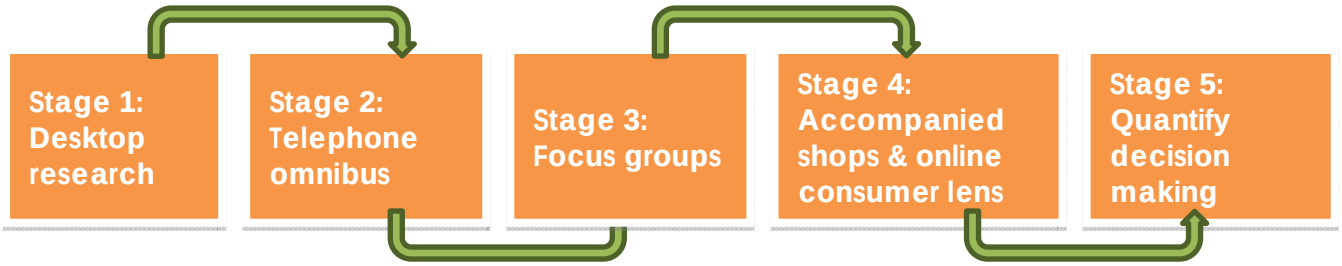
Understanding the attributes that inhibit purchase and consumption of vegetables

THE OBJECTIVES:

Consumers' purchase behaviour is influenced by a number of factors when buying vegetables, however, current research regarding these purchase drivers and barriers is extremely limited. This project sought to help the vegetable supply chain better understand which attributes drive and inhibit the purchase and consumption of capsicums & Asian Greens.

THE APPROACH:

The research methodology was developed by considering the overall project objectives and looking into past secondary research.



THE RESULTS:

- Key purchase drivers for capsicums, which included their usability in specific meals, liking of the taste/ flavour, usage as staple vegetable and health benefits. Barriers were also uncovered, and included their unsuitability for meals, disliking of taste/ flavour and having low awareness ("I didn't think about it").
- Key purchase drivers for Asian Greens, including their health benefits, usability in specific meals and liking of taste/ flavour. Lack of suitability for certain meals, low awareness and having others in the household who dislike them were found to be the major purchase barriers for Asian Greens.
- 42% of consumers purchase capsicums regularly (as at least once a week), with 31% purchasing occasionally (between once every two weeks and once a month).
- The majority of people do not purchase Asian greens (42%). Only 16% of people are regular buyers of Asian greens, while 26% are occasional buyers. Irregular buyers account for 15% of the market.
- Although aware of their presence, respondents were unsure of the exact health benefits offered by capsicums & Asian greens.

RECOMMENDATIONS:

It is recommended to communicate the versatility and variety of meal options available to consumers when using capsicums and Asian greens. Flavour and health benefits should be communicated as a secondary message. This will aid top-of-mind awareness and increase likelihood to purchase more capsicums more often, and for consumers to become more familiar with Asian greens – the first step in getting them to buy.

APPENDIX 7. Financial reconciliation

Milestone / Major Phase	Specification	Estimated Costs including travel	Actual cost	Alteration and explanation (if applicable)
Scoping meeting	½ day workshop in Sydney	$3,000	$3,000	n/a
Desktop study	80 hours	$9,000	$9,000	n/a
Stop go workshop	2 day workshop Sydney	$5,000	$5,000	n/a
Omnibus survey	4 questions on telephone omnibus	$10,000	$10,000	n/a
Qualitative phase	12 group discussion, 30 assisted shops	$41,000	$45,000	It was found that the focus groups were able t provide sufficient information about people's shopping behaviour and that most of the decision making was done in-home. As such, the assisted shops were reduced to 10 to confirm our in-store findings. A consumer lend approach was taken instead whereby consumers informed us of their in-home behaviour in relation to the vegetables.
Quantitative survey	N=900 survey using choice modeling	$50,000	$55,000	Stephen $12,540 MO sample $13,565.40
Documentation and prioritization	1 day workshop including presentation preparation and delivery	$3,500	$3,000	Took place in Gold Coast rather than Sydney, therefore saved on travel costs
Response plan	Design, preparation and delivery	$25,000	$25,000	n/a
Communication to industry	2 presentations	$6,000	$6,000	n/a
HAL article preparation	Preparation of article	$5,000	$5,000	n/a
TOTAL		**$157,500**	**$166,000**	**Additional $8,500**