Horticulture Innovation Australia

Mangoes Food Service Knowledge Base

Project MG23002

Contents

Table of Figures

Overview & Introduction

This document consolidates and summarises available knowledge regarding Mangoes in Australian Food Service distribution channel. It is designed to inform a Mango food service strategy.

A series of key findings have been identified in the analysis of this information and are assembled in the table below. They are extended out to implications for a Mango Food Service strategy.

Key Findings	Page	Implications
→ **Foundational Market Insights (July 22) identified indications of food service demand for a meal assembly ready Mango product form, like a cubes or slices, warrant consideration.**	7	**There is demand for a mango product form that is more meal assembly ready.**
→ **MG19000 identified a desire to be better informed on health attributes and demographic demand preferences that favour adults. It also highlighted that most individuals preferred eating mangoes fresh, primarily choosing Mangoes for snacks.**	9	**Interest in health attributes and consumption by adults as snacks shape demand.**
→ **The high volume of mango fruit available for processing provides a resource. However, while improving technologies has led to a range of processed product forms, it is not apparent that these capabilities can deliver on a shelf stable alternative to a fresh mango for use in Australian food service channel. The KP taste profile is a highly valued attribute in all processed mango products.** → **Most of the processed fresh mango are used in producing UHT bulk past for use in beverages or flavorings.**	11	**The high volume of mango fruit (10-15%) not able to be retailed, is a cost in terms of foregone retail channel sales but creates a consistently available volume for other foodservice and processing.** **As yet there is no processed product form that can substitute for a fresh mango in a food service meal where fruit texture is required in Australia.** **It is apparent that a processed IQF (Individually Quick Frozen) mango cube is available to the food service channel in the US and UE.**
→ **Mango fresh market volumes have averaged 62,259t per annum for the past 5 years and a CAGR of 1.8%. The stable demand is reflected in wholesale prices increases in years of lower volume.**	13	**Fresh Market domestic demand is stable.**

Key Findings	Page	Implications
→ Long-term data sets for household food spend share indicate resilient demand and strong growth patterns for eating out. The share of household food expenditure on eating out at 39.7%, reflects the commercial merits of investing in a food service channel strategy.	17	Food service is now such a large part of household food expenditure it warrants a planned approach.
→ Cost pressures have increased the commercial sensitivities for restaurants and cafés and leave them needing both solutions for more cost-efficient operations and ways to add value to their menus. → The fresh mango settings of a short seasonal window, varied seasonal output, ripening requirements and labour-intensive kitchen preparation mean mangoes have inherent challenges as a meal ingredient for food service.	18	Food Service are seeking menu solutions that reduce cost. Meal ready ingredients are in strong focus. The relative cost of mangoes vs other fruit should be anticipated and justified for the value and demand stimulus mangoes can add. Mangoes as a food ingredient bring a set of challenges that make them more complex than other fresh fruits.
→ Mangoes distribute 15.4% of their FY23 fresh market volumes into food service, which is slightly lower than 16.4% for all fruit and vegetables. In FY20 & FY21, the value of food service declined faster than that of Retail. Whilst volume in food service bounced back post covid and has since then reached above pre-covid levels.	20	The demand for mangoes in food service has proved to be resilient after being tested by the sector wide downturn caused by covid.
→ Focus for growth should be prioritised towards the subchannels that service household demand for dining out, which in FY23 took 80% of the mango food service volume. These subchannels are: Café & Restaurant, Pubs Clubs, QSR and Events, Functions & Catering.	24	Generating Mango category growth in the Food Service channel requires a focus on the priority sub channels of Café & Restaurant, Pubs/Clubs, QSR and Events.
→ Australian consumption of Mangoes is high by world standards and recent domestic consumption patterns have been stable.	25	All indications are Australian consumers enjoy the unique taste attributes of locally grown mangoes. This creates some barriers to processed product substitution from imported sources.

Key Findings	Page	Implications
→ The versatility of Mangoes not only allows for creative culinary expression but also meets consumer demands for flavorful addition. This has firmed the status of mangoes as a unique meal and flavor ingredient in professional kitchens.	27	Mangoes are valued for the unique flavor attributes they deliver. This is understood by the top end kitchens who have strong peer influence on other sub channels, like independent café & restaurants. If mangoes can be managed onto a restaurant or café menu these meals invariably are in high demand.
→ The fresh Mango supply chain into food service channels reflects a ripening requirement and then two distribution pathways of: (a) managed delivers into enterprises with muti sites (b) the servicing of independents food service outlets through providores in and around central markets.	29	Mangoes are supplied into food service channels along with other fruit & vegetable products. Central market providores are influential stakeholders in the product selection, handling and flow to food service outlets.
→ The US Mango Board provides a wide range of content for audiences that include; producer, distributor, retailer, food service enterprise and consumer. Most content is aimed at supporting the middle of the supply chain and is assembled and delivered in ways that can serve as a content guide for supporting Australian Mango supply chain stakeholders.	34	The US Mango Board provides useful learnings on content that can be delivered digitally to support a wide range of mango supply chain stakeholders.

Previous Research

Overview

This section of the analysis summarised previous research into distilled summaries of relevance to this project.

It also includes a scan of research and or development into processing options for fresh mangoes. This expansion of scope is driven by the high proportion of the fresh mangoes crop that are sent to processing and the scope for products produced from this supply and processing, to be flowed into food service channels. If this broad opportunity can be aligned it has potential to extend the food service menu window for locally produced mangoes. It is also acknowledged that developing these product forms creates a level of import substitution risk. However, if the unique taste attributes of Australian mangoes can be carried into the processed product it may serve to avert this risk.

Foodservice Foundational Market Insights, Category Snapshot. MT21011. KPMG, July 22

Project aim: To uncover foundational market insights and opportunities in the Australian Foodservice sector for the horticulture industry to pursue.

Key Project Objectives:

- Understand the current foodservice macro landscape to frame analysis and capability to produce timely and commercially relevant market intelligence reports.
- Defining the influences on food service enterprise sourcing fresh produce and particularly in relation to; menu design influences, appeal of Australian provenance, product specific attributes sought and sub-channel nuances.
- Define a set of opportunities for growers to engage directly more effectively with foodservice providers.

The project methodology involved desk research and a series of stakeholder interviews.

MT21011 findings of relevance

- 10 food service distribution channels were defined. The channel structure did not identify Fast Food (Corporate and Independent), Events, Pub & Clubs, Workplace and invited the combination of other channels.
- A set of characteristics were defined to profile the appeal, buying considerations and scope for growth in Mangoes. These definitions provided broad parameters, which may have use as entry level education content of food service channel approach to buying fresh food.
- Eight trends in food service were identified.
    - The four demand related trends identified were; healthy, local, multicultural and plant based.
    - The channel operational trends identified were; fast-casual, ESG, longer product shelf life and meal ready product form.
- The value chain product handling flows through to consumers were profiled for restaurants and Meal kit providers. Separately ripening, order frequency and quantity were identified as considerations.

- A series of commercial considerations for the Mango industry were identified. They are summarised as:
    - Understanding and seeking to influence food service menu motivation and changes.
    - Understanding the optimum product form best fit for each sub-channel.
    - Understanding and accommodating best practice logistics for each sub-channel.
    - Investing in advocacy to promote the full set of attributes of avocados to all sub-channels.

Other project outputs were assessed as confirmation of entry level planning considerations.

→ **Foundational Market Insights (July 22) identified indications of food service demand for a meal assembly ready Mango product form, like a cube or slice, warrants consideration.**

Consumer market research for Australian mangoes MG19000, HIA (2019-2020)

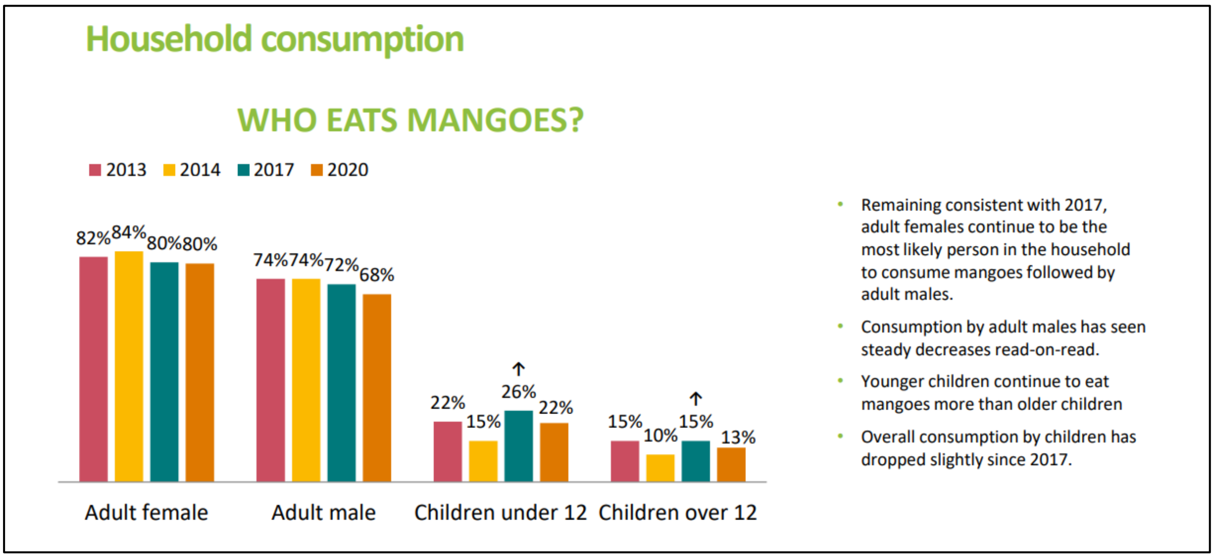
Project Aim: To boost Australian mango profitability by understanding consumer behavior towards mangoes, analyzing purchase drivers, usage, and shopper habits through surveys.

The research targets enhancing marketing strategies, identifying purchase triggers and barriers, assessing consumer confidence, taste preferences, quality perceptions, health attitudes, and mango's competitive positioning. This comprehensive insight will guide actions to elevate mango value perception among consumers.

MG19000 findings of relevance

Demographic preference

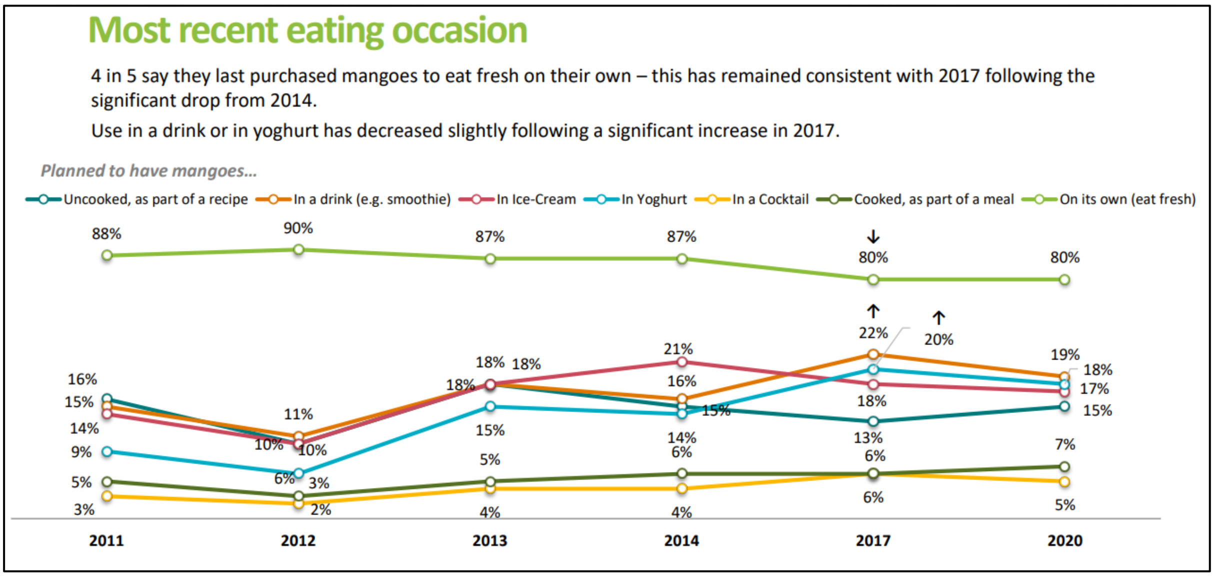
Mangoes are the least popular among children and teenagers and most popular among adult females. Marketing and product development efforts should consider these demographic preferences.



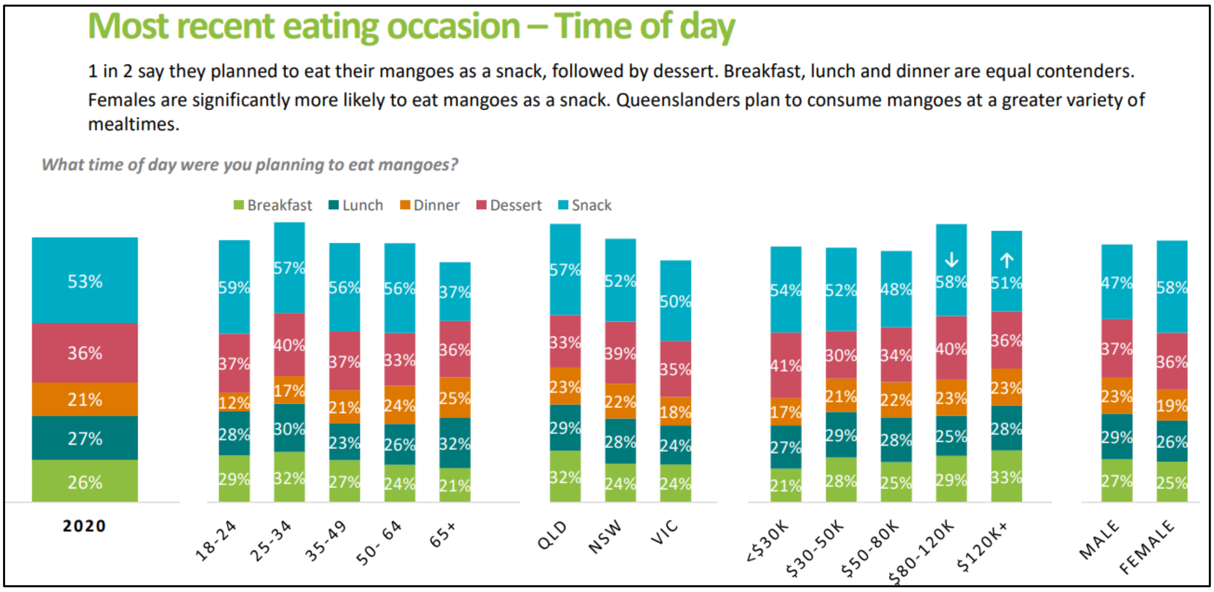
Mango Usage Occasions

In 2020, the planned consumption patterns for mangoes among individuals were as follows: 80% preferred consuming mangoes in their fresh state, 19% anticipated incorporating them into

beverages such as smoothies, and other preferences included incorporation into yogurt (18%), ice cream (17%), and uncooked recipes (15%). A smaller proportion planned to use mangoes cooked within meals (7%) and in cocktails (5%).

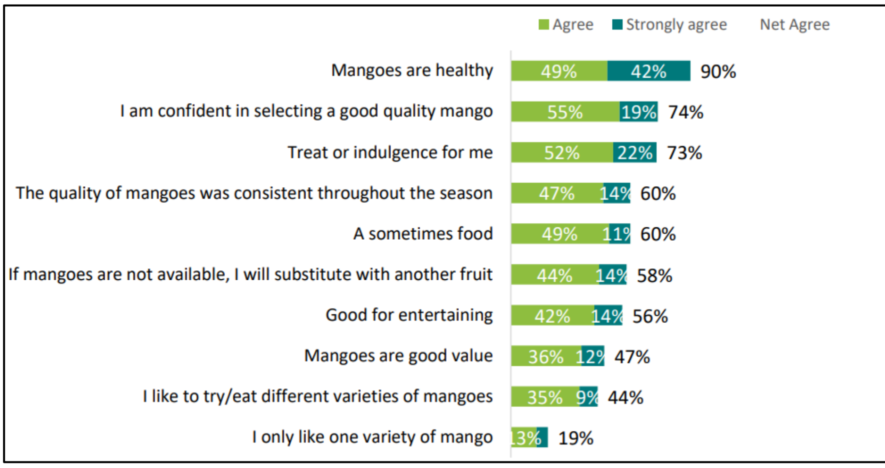


Regarding consumption timing, mangoes were primarily planned as snacks (53%), followed by dessert (36%), with the remainder intended for lunch (27%), breakfast (26%), and dinner (21%).



Perceptions of Mangoes

90% of people agreed that Mangoes are healthy.



- 9 in 10 associate mangoes with health.
- Mangoes are relatively strongly **perceived** as being a **treat and sometimes food**.
- Just under half like to try/eat different varieties of mangoes.

→ **MG19000 identified a desire to be better informed on health attributes and demographic demand preferences that favour adults. It also highlighted that most individuals preferred eating mangoes fresh, primarily choosing Mangoes for snacks.**

Mango processing

In Australia, a substantial 10–15% of Mango production is processed. This topic of processing is included in the research review section of this assessment due to its potential impact on food service. The content of the section draws on conclusions from the *Analysis of Mango Markets Trade and strategic research issues, 2019 ACIAR*. Numerous contributors and prepared by Robin E Roberts.

The scope of impact is shaped by Australian Mangoes being a seasonal fruit available over a 4–5-month period, with the bulk of the volume concentrated into 3 months. Not all harvested mangoes are suitable for retailing and therefore can be available for other uses like processing. If the volume of product available for processing can be used to create **shelf stable mango products suitable for food service enterprises**, sales into this channel could be expanded.

The history of research and development influences on processing of Australian fresh mangoes into a higher value form has been shaped by several factors that include.

- The mango fruit has high exposure to skin marks incurred due to harvest, particularly from stem sap finding its way onto the mango fruit skin. The mango shopper views skin marks as a reflection of lower fruit quality. This flows into retail buyer specifications that essentially make fruit with skins marks unacceptable. These two issues combine to create a significant quantity of fruit unsuitable for retail and therefore available for use in processing.
- Accessing a consistently available quality of fruit that is good enough for processing purposes yet is being processed without an opportunity cost of being sold as a higher value fresh fruit.
- The challenge of achieving processing economies of scale that are impacted by growing in tropical climates typically long distances from population centers and the cost of grading and transporting fruit to a central processing location. This dynamic led to exploration of

packhouse size processing solutions, that were challenged by capital cost, duplicity and fragmented distribution.

- The level of income to growers earned by supplying into consolidating processors is and will continue to drive the viability of committing to supply this channel. This income is $0.50c to $0.60c per kg and at this level is more than cost-recovery. This level of income is uncommon across most Australian fruit crops, where the income for fruit that is not up to retail standard and sent to processing is typically minimal. It is clear that the taste attributes of the Kensington Pride variety are a driver of this higher income.
- Innovations in processing technologies, including those from ZTi Smart Machines, have streamlined the preparation of mango products, enhancing efficiency and reducing waste, reducing labour intensity and costs. These machines can peel, cut flesh, and extract cheeks. The specifications for these machines claim capacity throughput of 40 fruit per minute.

Figure 1 Processing Equipment ZTi

The processing options involves steps like selecting quality fruits, washing, blanching, peeling, cutting, pulping, adding preservatives, and packing, ensuring products meet safety and quality standards.

For instance, Alphonso mango pulp specifications demand certain physical, chemical, and organoleptic characteristics to ensure product quality. This type of higher specification will require a higher processed price to be viable for growers.

Processing has been concentrated among a few companies, challenged by price, scale, and supply consistency. Also, significant distances between major mango production areas and processing facilities present challenges.

The local processing will compete with cheaper imports, but is able to exploit the competitive advanatage of the widekly preferred Kensington Pride (KP) taste attributes.

Opportunities have been seen to lie in localized pre-processing, waste utilization, and novel product development, including high-pressure processing to preserve texture and flavour, potentially increasing value and competitive edge. However, to date the processing technologies have been unable to take a fresh mango into a shelf stable form and that can then be used as an alternative to a fresh mango ingredient in applications other than beverages.

Processed mango product outputs include; diced, cheeks, dried, pulp, powdered and canned. All these product forms are shelf stable, through the likes of drying or freezing (including IQF) and therefore provide scope for year-round availability. Examples of the mango products current available in Australian market are shown in Figure 2.

Figure 2 Processed Mango Products available in Australia.

These advancements have supported the production of a wide range of mango-based product forms.

It is also apparent that the supply of IQF processed mango cubes for use in menus 12 months of the year is an established food service ingredient. This product form is available in the US market from the following leading food service suppliers.

https://www.dolefoodservice.com/product/97

https://www.simplotfoods.com/products/mango-cubes/10071179035084

https://www.nafoods.com/product/iqf-mango

- **The high volume of mango fruit available for processing provides a resource. However, while improving technologies has led to a range of processed product forms, it is not apparent that these capabilities can deliver on a shelf stable alternative to a fresh mango for use in Australian food service channel. The KP taste profile is a highly valued attribute in all processed mango products.**
- **Most of the processed fresh mango are used in producing UHT bulk paste for use in beverages or flavorings.**

Mango Production & Supply

In FY23, Mango production increased by 9% vs FY22 or 6,804t. In this year exports were reduced largely, further increasing local fresh supply of 7,622t, or 12.5% increase. The wholesale price generated was 11% below FY22, at $3.32 per kg.

Year on year change for a domestic fresh supply and wholesale price for Mangoes typically follows an inverse relationship where available volume is the primary driver of the wholesale price. This is reflected in the volume decline and wholesale price increases from FY19 to FY23.

Figure 3 Mango Australian Production & Wholesale Price

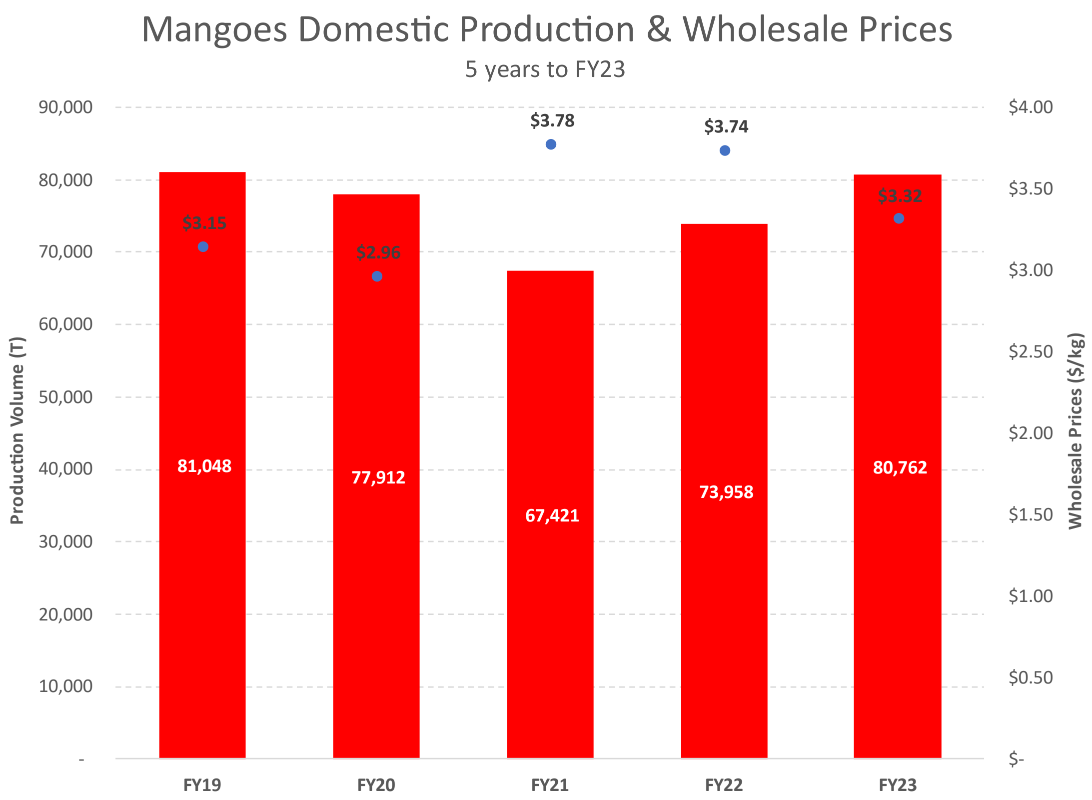


Figure 4 Australian Mango Supply and Channel Distribution - FY19 to FY23

Australian Mango Supply and Channel Distribution							
	FY19	FY20	FY21	FY22	FY23	Average	5-year CAGR
Production T	81,048	77,912	67,421	73,958	80,762	76,220	-0.1%
Imports T	826	838	1,007	726	660	811	-5.4%
Processing T	9,695	9,320	8,088	8,873	9,689	9,133	0.0%
Export T	8,221	7,707	4,479	4,747	3,046	5,640	-22.0%
Food Service T	11,785	10,287	8,521	9,315	10,602	10,102	-2.6%
Retail T	52,173	51,436	47,340	51,750	58,085	52,157	2.7%
Wholesale $ per kg	$ 3.15	$ 2.96	$ 3.78	$ 3.74	$ 3.32	$ 3.39	1.3%
Fresh Market Volume T	63,957	61,724	55,861	61,065	68,687	62,259	1.8%
Fresh Market Value $m	$ 201	$ 183	$ 211	$ 228	$ 228	$ 210	3.1%

→ **Mango fresh market volumes have averaged 62,259t per annum for the past 5 years and a CAGR of 1.8%. The stable demand is reflected in wholesale prices increases in years of lower volume.**

Food Service Channel

The food service channel captures Australian consumer spend on food prepared out of the home. It reflects a willingness to pay others to prepare food and provides indications of the demand for convenience in food and or lifestyle choices.

Share of Stomach

The competition for food expenditure between retail and food service channels has been evolving into higher levels of intensity for the last 40 years. This is commonly referred to as competition for a share of stomach.

This competition is reflected in the changes in the form of retail food, which has continued to move closer to the plate and requires less preparation. It is also reflected in investments by food manufacturers to provide more meal ready products and more significantly, by the corporate supermarket owners who dominate food retailing.

Both major supermarkets have invested in store formats over the last 20 years and that combined retail food and food service and in doing so acknowledged the demand for prepared food. This includes Let's Eat, Paddington Grocer, Foodchain and more recently Thomas Dux. These retail formats have not survived as standalone offers, but they have informed stepped changes in the supermarket retail offers, typically reflected in the development of what are now expanded ready meals offers.

Furthermore, the need to better compete for all food spend has led to acquisitions of food service enterprises with Woolworths acquiring the largest food service distributor PFD and owning meal kit provider Marley Spoon for a period. These moves indicate investment directions that reflect that retail supermarkets were not the only way to compete for the household spend on prepared food.

Catering for prepared food demand increased when widespread social lock downs for Covid closed restaurants and created new levels of demand for prepared food. In response restaurants and pubs began to offer takeaway and home delivery solutions, and prepared meal order aggregators such as Uber and Menulog enjoyed record growth, as did demand for home delivery services on online food and meal kits. These conditions favoured retail food and food service enterprises that could provide takeaway options. It amounted to a hard-wired opportunity to gain a share of stomach.

However, when a new normal became apparent post covid the strength of demand for eating out was apparent and share of food spend quickly moved back to food service. This pattern is reflected in Figure 4 & 5. It profiles the consistent growth pattern which reflects a 26% rise in FY23 when dining out re-opened and has generated a CAGR of 7.7% over the 5-year period.

This is widely taken as a signal of the strength of demand for eating out or purchasing food that others have prepared. All indications are that it is driven by degrees of; lifestyle goals that seek a break from home meal preparation; the stimulus of social interaction and an interest in new food ideas. It is also concluded that more households being involved with working from home has served to increase the demand for food outside the household.

Figure 5 Restaurant, Cafe, Catering & Takeaway - Annual Channel Sales from FY00 to FY23

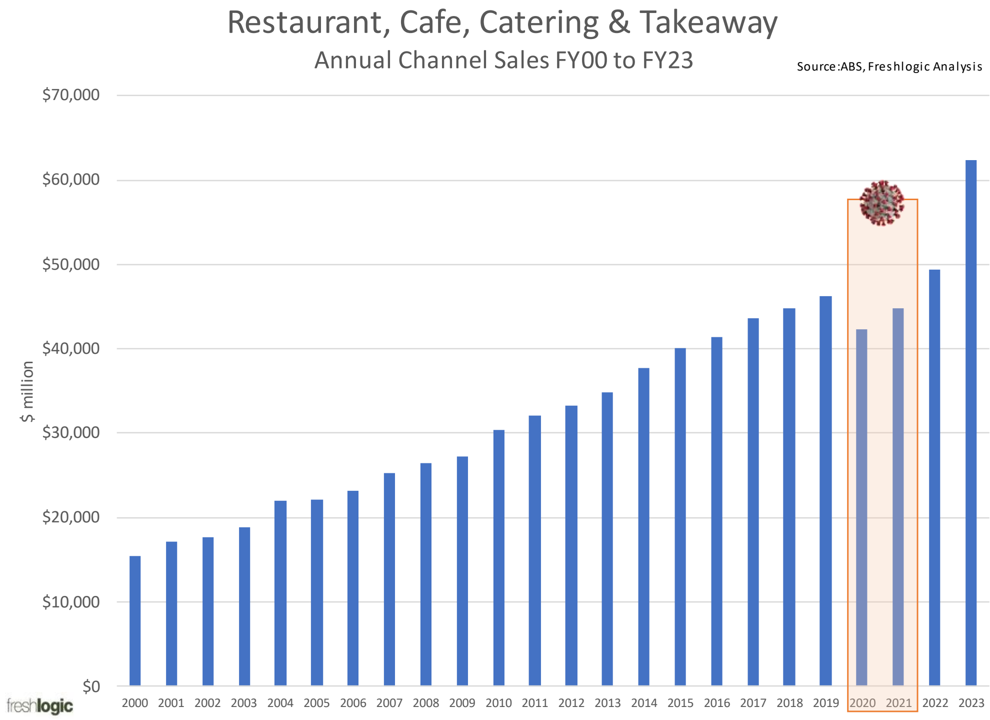


Figure 6 Restaurant, Cafe, Catering & Takeaway - Monthly Channel Sales from FY19 to FY23

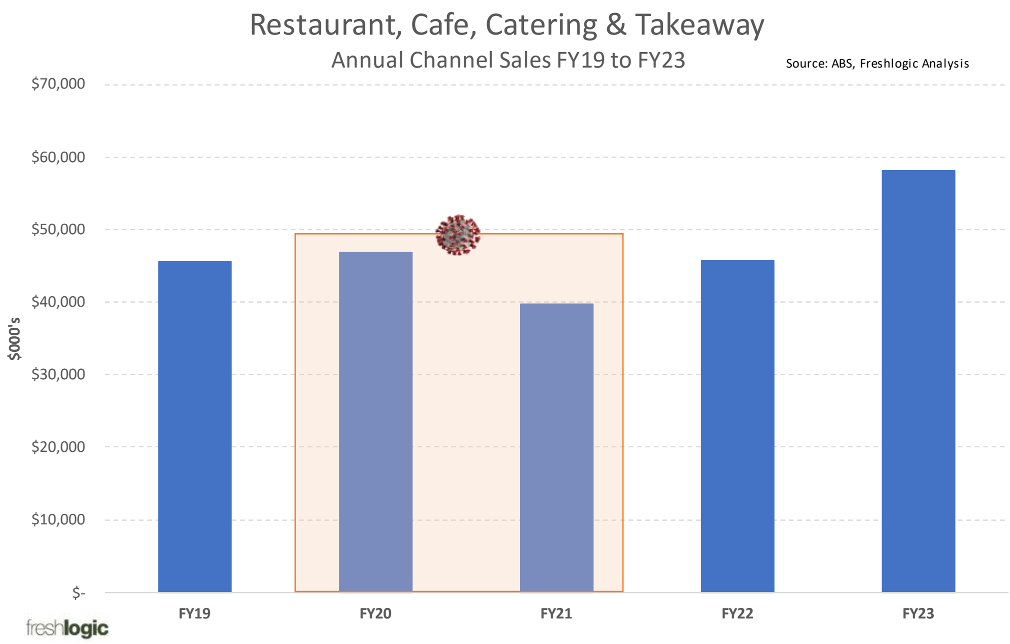
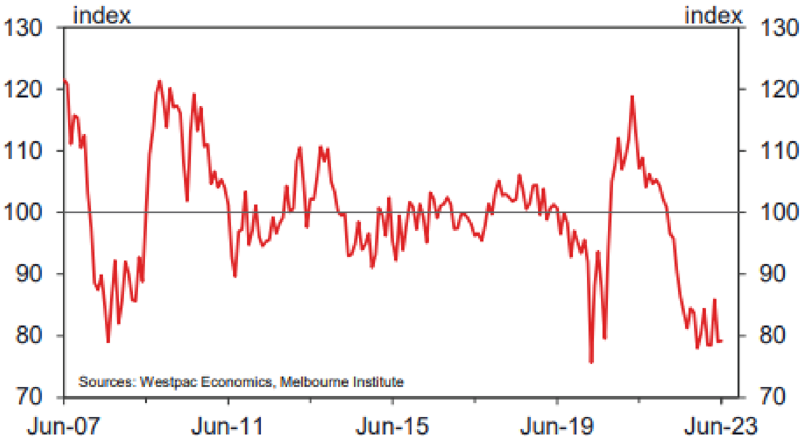
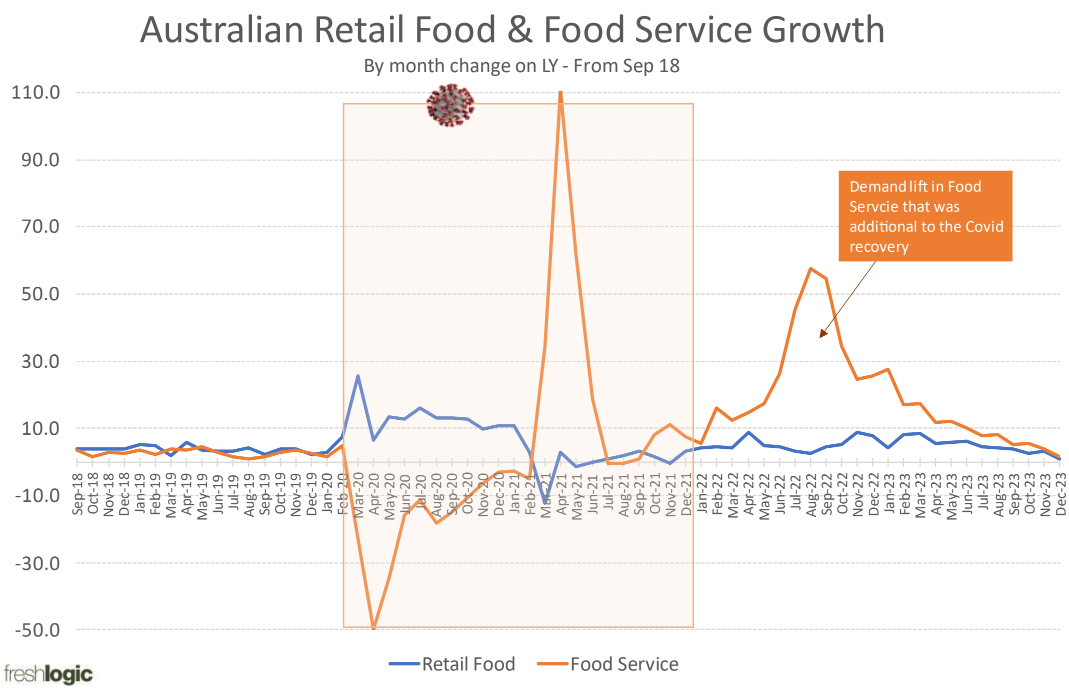


Figure 7 Consumer Sentiment index



A decline in consumer sentiment since the covid pandemic is profiled in Figure 7 implies the significance of this pattern. Figure 8 also evidences the food service demand, where the growth in food service expenditure exceeded retail food growth for 24 months after covid.

Figure 8 Retail Food & Food Service Growth

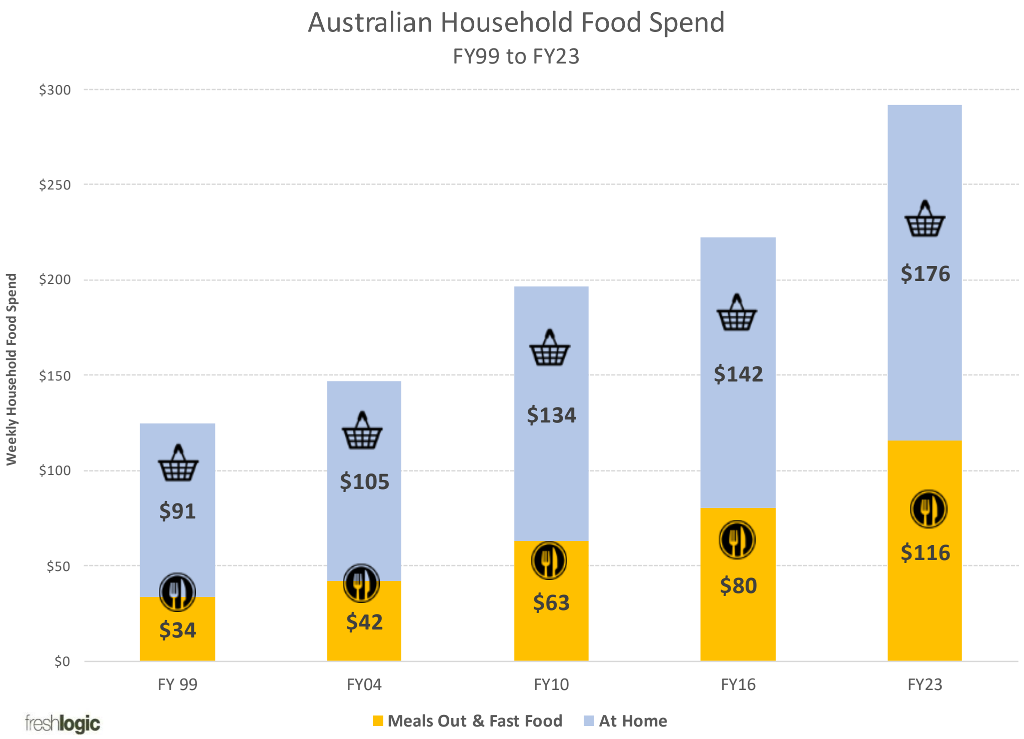


The changes in share of stomach are best reflected in the analysis of Australian household food spend over time when all non-food, (IE cleaning and pharmaceutical) is removed from the analysis. This reveals that the proportion of food spend on Dining out and Takeaway has increased from 26.9% in FY99 to 39.2% in FY22. This is a substantial and compelling 50% increase in the share of household food spend on prepared food over this 23-year period and is profiled in Figures 9 and Figure 10.

Figure 9 Australian Household Spend by Channel

Australian Household Average Weekly Food Spend					
	FY99	FY04	FY10	FY16	FY23
Meals Out & Fast Food	$ 33.55	$ 42.10	$ 62.96	$ 80.43	$ 115.82
Meals Out & Fast Food Share	**26.9%**	**28.6%**	**32.0%**	**36.2%**	**39.7%**
Food Prepared at Home	$ 90.97	$ 105.03	$ 133.55	$ 141.70	$ 175.84
Total Household Food Spend	$ 124.52	$ 147.13	$ 196.51	$ 222.13	$ 291.67

Figure 10 Share of Stomach- FY99 to FY22



Ordinarily, the meal kits channel is excluded in the definition of food service, as the meal assembly is undertaken at home, hence shares more in common with online retail grocery. But for the purposes of this strategy, meal kits have been incorporated into this analysis.

→ **Long-term data sets for household food spend share indicate resilient demand and strong growth patterns for eating out. The share of household food expenditure on eating out at 39.7%, reflects the commercial merits of investing in a food service channel strategy.**

Cost Pressures

The large number of small to medium sized food service enterprises are exposed to input cost increases. In their relationship with suppliers, they have low negotiating power and are left to be

price takers. Acute labour shortages, caused by immigration constraints on backpackers and students who made up most of the casual workforce have brought more pressure on commercial viability. The Restaurant and Café sub channel has seen the demise of 10-20% of CBD located outlets, that have not survived the sales decline caused by increases in working from home and the flow on impact to reduce CBD office attendance.

These pressures have led to reviews into labour efficiencies and how operations can be improved, and costs reduced throughout the supply chain. **Ingredient inputs that are inconsistent and require varied operational treatment are identified as an adverse cost impacts in these reviews, and that includes Mangoes.**

Order aggregators like Uber Eats and Menulog have evolved rapidly in the last 7-8 years to harness technology and provide services that combine meals and home delivery. In doing so they have established themselves as gatekeepers for home delivered restaurants and takeaway meals. Their offer promised Restaurants, Cafés & Takeaway outlets strong sales growth for which they took a significant circa 35% of the food service enterprise total income and added to the operating cost pressure.

- → **Cost pressures have increased the commercial sensitivities for restaurants and cafés and leave them needing both solutions for more cost-efficient operations and ways to add value to their menus.**
- → **The fresh mango settings of a short seasonal window, varied seasonal output, ripening requirements and labour-intensive kitchen preparation mean mangoes have inherent challenges as a meal ingredient for food service.**

Mangoes in the Food Service Channel

For the last 5 years to FY23, food service has on average accounted for 15% of Mango Fresh Supply, vs Retail's share of 85%. The food service share of Mango fresh supply is a bit lower than the total fruit and vegetables of 16% as profiled in Figure 12.

Prior to Covid, in the 5 years to FY19, the value of Mangoes in food service generated +0.9% CAGR vs overall food service channel value CAGR of +6%. Mangoes food service channel value has been stable with -1.3% CAGR from FY19 to FY23. Volume was depressed in the food service channel in FY21, whilst bounced back post covid and reached above pre-covid levels.

It is also relevant to understand the price setting dynamics of the Australian wholesale market and how these impact food service Mango buyers. If there are supply impacts, particularly shortages, the orders from the larger retail supermarkets and contracted food service buyers will be given priority and any impacts are then flowed into the wholesale markets. This results in enterprises that buy Mangoes in central markets, who are food service and independent retailers, seeing greater price variations and this practice has led these buyers to be more price focused to protect their margin.

Figure 11 Mango Fresh Market Distribution Channel Volumes - FY19 to FY23

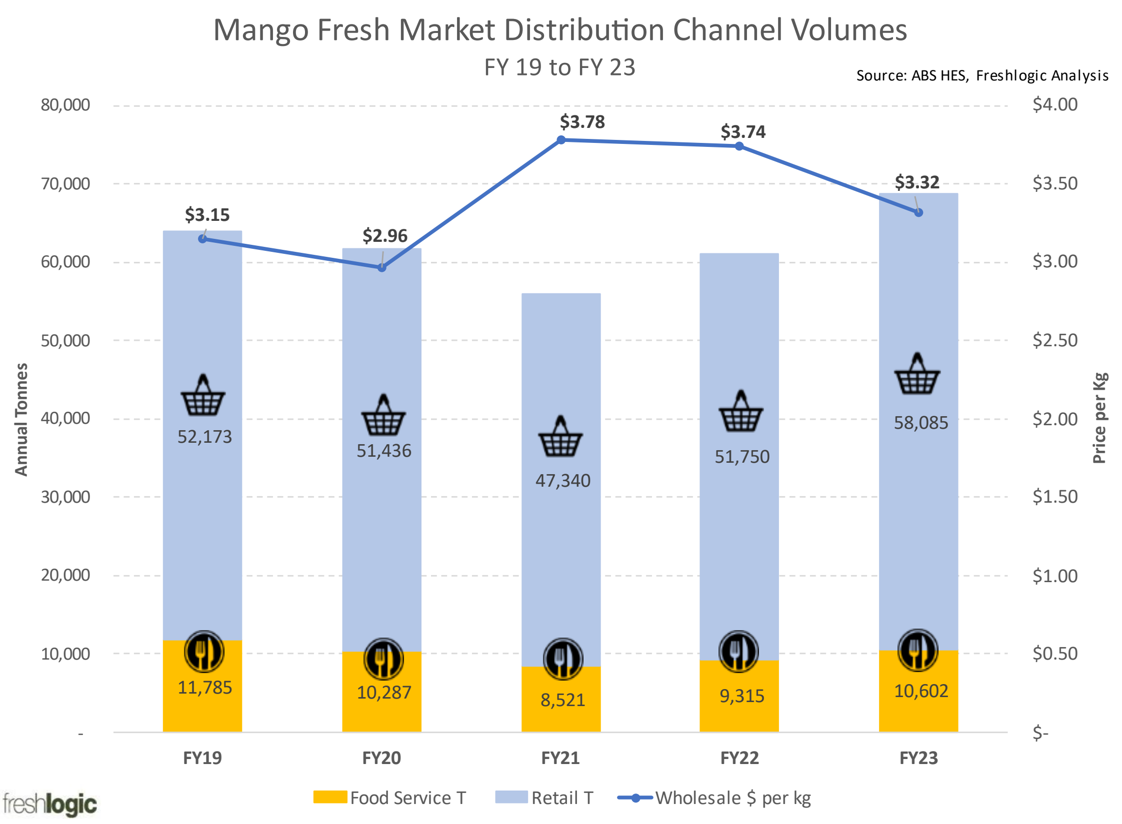


Figure 12 Food Service Share of Total Fruit & Vegetables and Mango

Food Service Share of Total Fruit & Vegetables and Mango					
	FY19	FY20	FY21	FY22	FY23
Total Fruit & Vegetables	17.4%	15.1%	16.3%	16.7%	16.4%
Mango	18.4%	16.7%	15.3%	15.3%	15.4%

→ **Mangoes distribute 15.4% of their FY23 fresh market volumes into food service, which is slightly lower than 16.4% for all fruit and vegetables. In FY20 & FY21, the value of food service declined faster than that of Retail. Whilst volume in food service bounced back post covid and has since then reached above pre-covid levels.**

Sub Channels in Food Service

The food service channel is a complex set of enterprises and organisations that essentially assemble food ingredients into meals. The channel is segmented into three groups by those operators that service household food demand directly (Eating Out), those that provide food with other leisure activities (Travel & Events) and those that provide food as part of an institutional service (Institutional). Distribution and ordering dynamics, as well as opportunities and approaches to influencing produce purchase, vary at a sub channel level.

Figure 13 Mango Food Service Channel Share by Volume - Jun-23 MAT

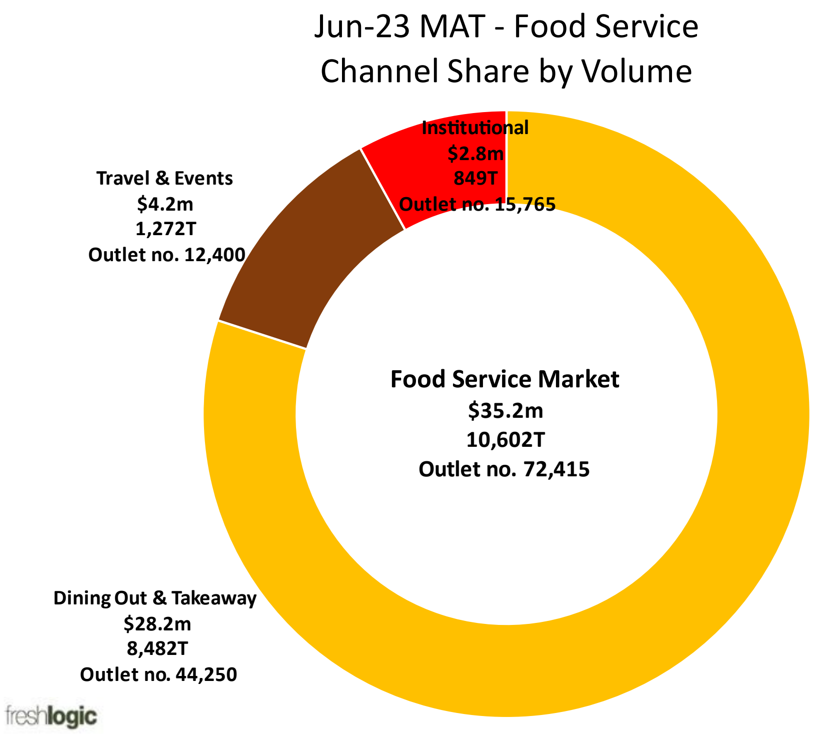


Figure 14 Food Service Channel Group Profile

National Food Service Channel Profile & Outlet Numbers				
	Value ($M)	Volume (T)	Outlet Numbers (#)	Share of outlet (%)
Dining Out & Takeaway	$ 28.2	8,482	44,250	61.1%
Travel & Events	$ 4.2	1,272	12,400	17.1%
Institutional	$ 2.8	849	15,765	21.8%

freshlogic

A detailed description of sub channels, the number of outlets and Mango food service volume in FY23 is outlined in Figures 15 and 16.

An analysis of share of mango category volume distributed in the post-Covid period of FY2023 by subchannel reveals the large majority of volume is distributed by subchannels providing solution to households eating out.

The largest channels in descending order in FY2023 were Cafés & Restaurant 3,647T (34.4%), Pubs & Clubs 3,477T (32.8%), QSR 933T (8.8%), Events & Function Centres & Catering 712T (6.7%) and Independent Takeaway 424Y (4.0%) account for a sum 9,193T or 87% of all Mango volume into the food service channel. Figure x ranks all subchannels by volume.

Other sub channels, of Travel, Accommodation, Health, Defence, Correctional, Corporate & Workplace and Education distributed generate smaller contributions and a sum 1,409T and 13% of the total.

This subchannel share is distribution reflects the concentration of Australian food service towards households eating out. This varies from US and EU markets where higher proportions of food are delivered through institutional channels, especially the Education and Corporate & Workplace subchannels, where three meals are often provided.

Figure 15 Food Service sub channel volume contribution FY2023

Food Service Sub Channel Mango Volume FY2023		
Sub Channel	**Volume (T)**	**Volume (%)**
Cafés & Restaurants	3,647	34.4%
Pubs & Clubs	3,477	32.8%
Quick-Serve Restaurants **(QSR)**	933	8.8%
Events, Function Centres & Catering	712	6.7%
Travel	445	4.2%
Independent Takeaway	424	4.0%
Health	357	3.4%
Education	314	3.0%
Corporate & Workplace	144	1.4%
Accommodation	115	1.1%
Defence	17	0.2%
Correctional	17	0.2%
TOTAL	10,602	100%

Figure 16 Food Service Sub Channels of Mango Supply Volume (T) & Outlet Numbers - FY23

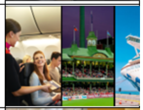
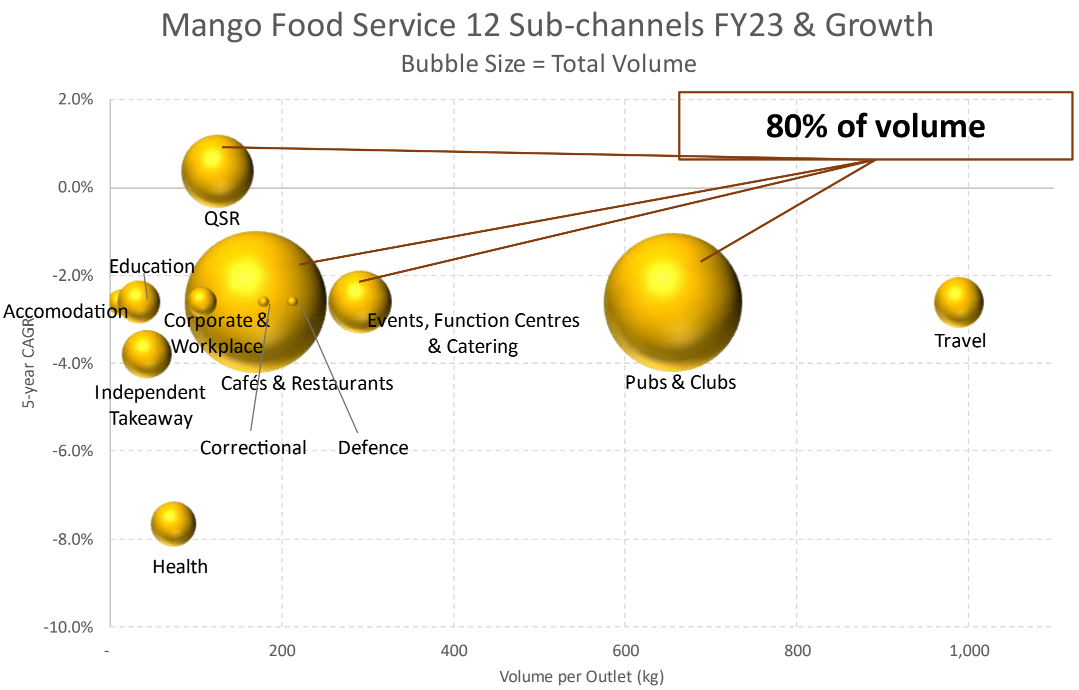
Channel Group	Sub Channel	Sub Channel Description & Types	Supply of Fruit & Vegetables	Volume (T)	Volume (%)	Outlet #	
Dining out, Take away and Home Delivery	Independent Takeaway	Indepenently owned outlets offering takeaway Hot chicken, Sandwichs, Pizza, Fish & Chips, Chinese, Thai, Indian & other Ethnic based.	Individually from Specialist Providore, Cash & Carry or local Specialist Fresh Retailer or Supermarket.	424	4.0%	9,950	
	Quick-Serve Restaurants **(QSR)**	Chains offering dine in & takeawey including McDonalds, Subways, KFC, Dominos, Hungry Jack's, Red Rooster, Pizza Hut, Nando, Zambrero, Oporto & Just Juice	Group purchased from Producer or Fresh Cut Processor & co-ordinated through Logistics Provider or General Foodservice Distributor.	933	8.8%	7,500	
	Cafés & Restaurants	Including Modern Australian & Ethinic Cuisine based Restaurants, Cafés & Lunchbars	Individually from Specialist Providore, General Foodservice Distributor, Cash & Carry or local Specialist Fresh Retailer or Supermarket.	3,647	34.4%	21,500	
	Pubs & Clubs	Bars, Pubs, Casinos, Social & Sports Clubs	Individually or group (larger scale) purchased & corodinated through from Specialist Providore(s).	3,477	32.8%	5,300	
Travel & Events	Events, Function Centres & Catering	Function Centres, Sporting Venues	Individually purchased & co-ordinated through Specialist Providore.	712	6.7%	2,450	
	Travel	Airlines, Cruise, Land Travel	Group purchased from Producer or Processor & co-ordinated through Logistics Provider or General Foodservice Distributor	445	4.2%	450	
	Accommodation	Hotels, Motels	Individually or group (larger scale) purchased & co-ordinated through from Specialist Providore(s).	115	1.1%	9,500	
Institutional	Health	Hospitals, Aged Care, Day treatment clinic	Group purchased in a state based tender process from Producer or Processor & co-ordinated through Logistics Provider or General Foodservice Distributor. Note that 40%+ of Aged Care are corporate owned.	357	3.4%	4,840	
	Defence	Military	Group purchased in a tender process from Producer or Processor & co-ordinated through Logistics Provider or General Foodservice Distributor	17	0.2%	80	
	Correctional	Prison	Group purchased in a state based tender process from Producer or Processor & co-ordinated through Logistics Provider or General Foodservice Distributor	17	0.2%	95	
	Corporate & Workplace	Factory/office (canteen), Mining kitchen	Group purchased in a state based tender process from Producer or Processor & co-ordinated through Logistics Provider or General Foodservice Distributor	144	1.4%	1,350	
	Education	University, TAFFE, Schools, Child Care	Group purchased in a state based tender process from Producer or Processor & co-ordinated through Logistics Provider or General Foodservice Distributor	314	3.0%	9,400	

Figure 17 below provides a visual of the size and relative attractiveness of food service sub channels, number of outlets, CAGR over 5 years and a calculated Mango volume per outlet into consideration. It is significant that over 80% of the Mango volume is distributed by four channels.

Figure 17 Food Service Sub-Channels Volume Size & Growth - FY23



Pubs/Clubs and Function Centres stand out as an attractive channel, due to volume per outlet and overall sales value. Ordering and purchase influence is via coordinating larger providores or providores in central markets, but growth potential is greater given the comparatively larger scale of the individual outlets.

Cafés & Restaurants, whilst a large contributor to category volume, are high in number, hence a far smaller volume per outlet. This is a mostly decentralised sub channel of independent enterprises. Ordering is typically done through central market-based providores, who buy and combine the range of fruit and vegetables ordered into single deliveries. Influencing purchasing within this sub channel requires investment and will need to assert a positive influence over the providore network.

The product complexity and limited seasonal availability appeals to the Café's & Restaurants who are convinced mangoes on their menus are an advantage over other sub-channels.

QSR's with high volume per outlet are typically a dominant channel in food service, but this is not so with Mangoes. This is because mangoes are more operationally demanding and only available for limited seasonal periods, which conflicts with the QSR mode of fast meal assembly and consistent menus. The QSR's that do offer mangoes in some forms are, Juice bars and outlets that are offering Indian, Mexican, Japanese or Asian cuisine.

Independent takeaways, who source mangoes through providores have a similar meal assembly preference, but those with higher value offers will use mangoes for the menu advantage they can provide.

Institutional channels operate mostly via tenders and or, ongoing long-term supply arrangements. They are less inclined to Penetrating these channels is an avenue for those who can offer consistent quality and assured supply at a competitive price. However, these channels, being smaller in volume and outlet numbers, offer lower growth potential on an industry scale.

Most if not all buyers across food service would consider a processed or part processed product, if the quality and product form suited their menus and meal assembly systems. Food service buyers already buy Mangoes in fresh, puree and other preserved product forms.

→ **Focus for growth by should be prioritised towards the subchannels that service household demand for dining out, which in FY23 took 80% of the mango food service volume. These subchannels are: Café & Restaurant, Pubs Clubs, QSR and Events, Functions & Catering.**

Mango Demand

Consumer Demand

Mango consumption in Australia is 2.61kg per capita in the year ending Jun-23 with a 5-year CAGR of 0.8%, which is higher by world standards.

Australian household penetration has increased steadily with a 5-year CAGR 2.9%. Whilst purchase quantity has decreased with a 5-year CAGR of -5.8%. These patterns are profiled in Figures 18 and 19.

Globally mango consumption has been aided due to their recognized health benefits, such as lowering cholesterol, reducing heart disease risk and aiding digestion. These advantages have been enjoyed by many fruits and vegetables and have been largely fueled by the increased awareness of healthy eating.

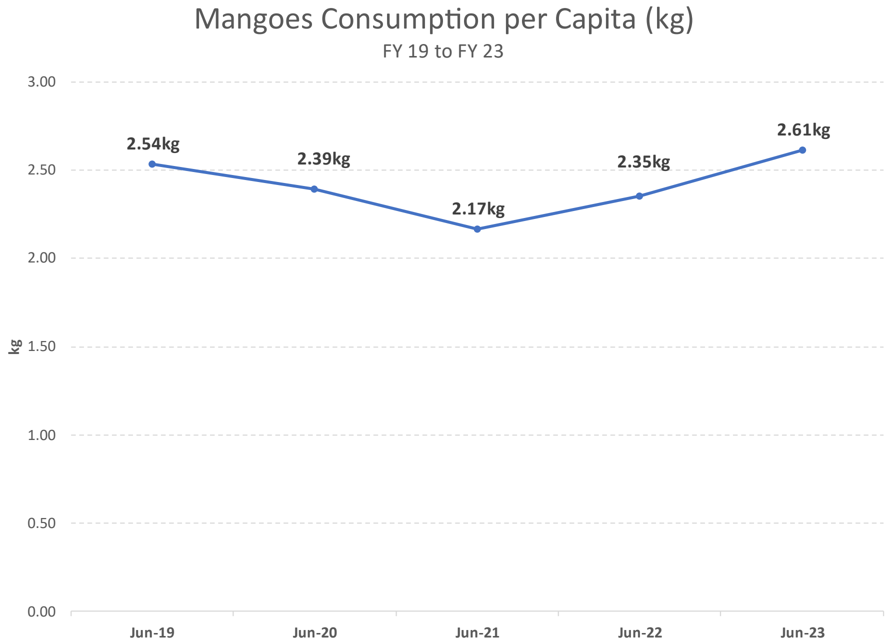
Being rich in vitamins A and C, mangoes also promise enhanced immune health. This health benefits awareness has aided demand, and at the same time production has lifted and increasing the variety of mangoes in the market. Other global demand drivers include population growth, improved logistics and increasing available discretionary spend as the middle class expands.

Australian Mangoes have unique taste attributes, some describe as a “tang” that is understood to be attributed to the Kensington Pride genetics. This is taste is welcomed by Australian consumers and serves as a competitive advantage against imported alternatives. However, it is new to consumers in export markets and requires level of development to lift awareness and gain acceptance.

Figure 18 Australian Mango Purchase Metrics FY19 to FY23

Australian Mango Purchase Metrics						
	Jun-19	Jun-20	Jun-21	Jun-22	Jun-23	5 year CAGR %
Consumption per capita (kg)	2.54	2.39	2.17	2.35	2.61	0.8%
Household penetration	43.0%	46.0%	46.0%	47.4%	48.2%	2.9%
Purchase quantity (kg)	1.09	1.10	0.84	0.84	0.86	-5.8%

Figure 19 Mango Consumption per Capita



→ **Australian consumption of Mangoes is high by world standards and recent domestic consumption patterns have been stable.**

Food Service Demand

Food Service enterprises who are dealing with costs and margin pressures have welcomed opportunities to raise the menu profile of meals that are of higher value. Perceived as a quality ingredient, Mangoes are acknowledged as an ingredient that can raise the value of the end meal.

Interviews on food service enterprises are reflected in these comments.

"If you are any good with a knife you can get a good yield from a Mango, above most fruit."

"They are unique, a lift for the whole place and a signal of the Aussie summer."

"If we can get them on the menu the meals sell like hot cakes. Then we hold our breath when each order arrives until we confirm they are there."

"We have been let down with mango availability so many times."

"The availability window is too short to get any scale going."

Mango Use in Restaurants

Mangoes are an established versatile ingredient. Their unique flavor profile, ranging from sweet and floral to tart and tangy, along with their rich nutritional content, makes them a popular choice across various culinary applications. The eleven examples listed below reflect their scope for inclusion in high volume meals as well as their diverse use profile that make Mango an ingredient for numerous different meals.

- Mango Salsa: Dice fresh mangoes and combine them with red onion, cilantro, lime juice, and a touch of jalapeño to create a vibrant mango salsa. This can be served as a topping for grilled fish, chicken, or tacos.
- Mango Chutney: Cook down mangoes with spices, vinegar, and sugar to create a sweet and tangy mango chutney. This condiment pairs well with grilled meats, curry dishes, and even as a sandwich spread.
- Mango Salad: Toss fresh mango cubes into salads for a burst of sweetness. They work well in both green salads and fruit salads. Consider combining mango with arugula, feta cheese, and a balsamic vinaigrette for a unique flavor combination.
- Mango Smoothies: Incorporate mangoes into smoothies for a tropical twist. Blend them with yogurt, ice, and other fruits to create a refreshing beverage.
- Mango Curry: Add mango chunks to curry dishes for a touch of sweetness. Mangoes work particularly well in coconut-based curries with chicken or shrimp.
- Mango Desserts: Create mango-infused desserts such as mango sorbet, mango cheesecake, or mango mousse. The natural sweetness of mangoes adds a delightful flavor to these treats.
- Mango Cocktails: Incorporate mango puree or fresh mango chunks into cocktails. Mango margaritas, mango mojitos, or mango martinis are popular choices.
- Mango Sushi Rolls: Include mango slices in sushi rolls for a sweet and juicy element. Mango pairs well with ingredients like avocado, crab, and shrimp.
- Grilled Mango: Grill mango slices or halves to enhance their natural sweetness. Grilled mango can be served as a side dish or as part of a dessert with a scoop of vanilla ice cream.
- Mango Chicken or Shrimp Skewers: Thread mango chunks onto skewers along with marinated chicken or shrimp for a delicious kebab. Grill or bake for a flavorful and visually appealing dish.
- Mango Glaze: Create a mango glaze by pureeing mangoes and combining the puree with spices, honey, or soy sauce. Use it as a glaze for grilled or roasted meats.

The household consumption occasions for Mangoes reflects 50% eaten as a snack and 36% for Desserts, 30% with breakfast, lunch, and dinner. (MG19000) While snacking dominates in home consumption there is an encouraging level of use in other occasions that are closer to where food service can deliver.

Mangoes in beverages are significant food service occasion and when used in this form the mango ingredient can be sources from a lower cost shelf stable product form like a UHT puree or frozen,

Mango Product Forms

Mangoes are available in various product forms, each offering culinary application options and levels of shelf life. The different forms offer varied application potential, from direct consumption to incorporation into complex recipes, allowing for creativity and flexibility in professional kitchens. Some common product forms of Mangoes available to food service buyers include:

1. Fresh Mangoes: Fresh Mangoes are whole, unprocessed Mangoes that are readily available in the seasonal window. They are versatile and can be used in a wide range of dishes and require manual preparation with in-house labour.

Items 2 to 10 are mangoes products in shelf stable forms that are potentially ready for meal or beverage assembly.

2. Dried Mangoes: Dehydrate mango slices to make dried mango snacks. Dried mango is a portable and sweet treat that can be enjoyed as a healthy, albeit high sugar snack.
3. Mangoes Puree: Blend fresh mangoes into a smooth puree. This can be used as a base for smoothies, cocktails, desserts, sauces, and marinades.
4. Frozen Mangoes: These are available as chunks or puree. Frozen mangoes are often used in smoothies, desserts, and as a convenient, out-of-season option for dishes requiring mango. This includes the IQF form of mango chunks.
5. Canned Mangoes: Mangoes in syrup or juice can be found in cans, ideal for desserts and baking, providing a year-round option regardless of the fresh mango season.
6. Mango Slices: Often found in sweetened syrup or juice. These can be added to fruit salads, yogurt, or eaten on their own.
7. Mango Pulp: Similar to puree, mango pulp may have a slightly coarser texture and is used in making drinks, yogurts, ice creams, and sweets.
8. Mango Powder (Amchoor): Made from dried unripe mangoes, this powder is used in dishes for a tangy flavor, primarily in Indian cuisine.
9. Mango Concentrate: A thick, sweet product used to make mango beverages, sauces, and as a flavor enhancer in various food products.
10. Mango Chutney: A popular condiment made with mangoes, vinegar, sugar, and spices, often served with curries and other dishes.

The availability of these different product forms allows chefs and cooks to incorporate Mangoes into their recipes year-round. These forms and uses are summarised in Figure 20.

Figure 20 Product Form and Food Service Use

Product Form	Food Service Use
Fresh	All meal occasions
Sliced	Refreshing Snack, Fruit Salads, Yoghurts
Dried	Snacks
Puree	Smoothies,Cocktails, Desserts, Sauces, Marinades
Frozen	Smoothies, Desserts
Canned	Desserts, Baking
Pulp	Drinks, Yoghurts, Ice Cream, Sweets
Powder	For Tangy Flavour primarily Indian Cuisine
Concentrate	Beverages, Sauces
Chutney	Curries

→ **The versatility of Mangoes not only allows for creative culinary expression but also meets consumer demands for flavorful addition. This has firmed the status of mangoes as a unique meal and flavor ingredient in professional kitchens.**

Supply Chain

The flow of Mangoes into food service distribution channels varies by the type of sub-channel, their buying system, purchase and delivery frequency and consideration for the logistics of other fruit & vegetables purchased.

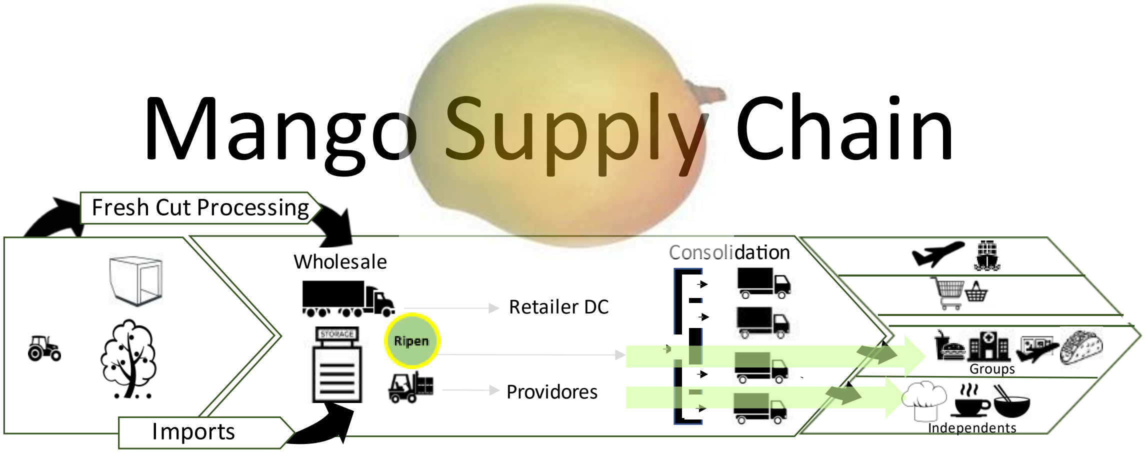
- Most food service distribution channels are taking whole fresh mangoes in either a 7 kg tray or a 10 kg carton. The latter is typically a grade of fruit deemed less then retail specification, typically due to skin blemish, but suitable for food service as the fruit flesh is
- Mangoes typically travel green and are ripened in market, before being sold to retail of food service. Green fruit can be held for 1 to 1.5 weeks and while holding at this level is not optimum, it is employed to the manage balance between supply and demand.
- There are 2 types of ripening processes described below:
    - Controlled ripening: Where product is held in dedicated rooms for 5 days + that commences with ethylene and is then managed with temperature control. This is designed to bring on fruit colour blush, which is a cue for retail quality, and also to deliver consistent flesh quality.
    - Uncontrolled ripening: Where product is held in more open ambient temperature over a 5 day + period to reach what is deemed to be ripened state.
- The flow of goods into the numerous independent buyers for Restaurant, Café, Independent Takeaway, Pubs & Clubs and Catering & Events enterprises is mostly through the providores, who operate in and or in proximity to the five central markets.
- A proportion of these smaller enterprises will purchase their Mangoes along with other fresh fruit and vegetable supplies through the retail supermarkets with the larger quantities on offer at Costco well suited and welcomed by these buyers. It is also known that an estimated 30% of retailer greengrocers will supply fresh fruit and vegetables to smaller independent food service enterprises who operate proximity.

Providores are gatekeepers to the independent food service enterprises who provide a service that sources and delivers fresh fruit and vegetables to buyers. Their role fulfills a strong and over-riding preference from the independent food service buyers, that their fruit and vegetables orders can be placed with one supplier and consolidated into one delivery.

The Providores are operating at a supply chain pressure point, where changes in supply dynamics typically have their first and sharpest impact on prices. This has created a sensitivity to buying price and is reflected in providore buying practices.

The distribution pathways for fresh mangoes are profiled in Figure 21.

Figure 21 Mango Supply Chain



→ **The fresh Mango supply chain into food service channels reflects a ripening requirement and then two distribution pathways of: (a) managed delivers into enterprises with muti sites (b) the servicing of independents food service outlets through providores in and around central markets.**

US Mango Board Food Service

The US Mango Board provides an industry support role to enhance the profile and use of Mangoes in the US market. Foodservice digital materials.

The US National Mango Board operates a website that provides information to several audiences in the mango industry including, general public, retail and foodservice channels. The website can be viewed at https://www.mango.org . The board is based in Florida and manages information for US produced and imported mangoes, which combine to provide 12 months availability. The website includes a quantity of foodservice specific materials with examples detailed below.

Menu Inspiration

Menu Inspiration in the form of a searchable recipe database and examples of how to promote meals with mangos all year round on your menu. Some of these recipes have been developed in collaboration with chef communities. An additional resource that provides suggestions for Mango flavour pairings. Figures 22, 23 & 24 show examples of the Year-Round Menu, Flavour Pairings and Searchable Recipe option.

Figure 22 Year-Round Menu Promotion Guide

MANGO KEEPS YOUR MENU FRESH All Year Long

12 months of promotions feature delicious ways to bring the flavor of summer to any meal, any day.

You know mango for its eye-catching color and delicious tropical flavor. Mango adds dimension to recipes – hot or cold, savory or sweet. As nutritious as it is delectable, it's no wonder mango is one of the most popular fruits in the world. Many consumers consider it a seasonal treat, a luscious fresh fruit they associate with summer. But the year-round availability of fresh mango and its incredible versatility make it easy to plan daily, monthly and seasonal menu specials.

JANUARY
IN THE SOUP
Let the good times roll during National Soup Month with **Shrimp & Mango Gumbo**.

STEALTH HEALTH
Your customers won't think anything is missing when you offer **Mango & Green Papaya Salad with Yunnan Tomato Salsa & Mango Jicama Enchiladas** on your menu.

FEBRUARY
MANGO MATCHMAKER
Don't leave singles out in the cold on Valentine's Day. Invite them to gather with fresh mango cocktail specials like **Mango Spice & Ice** (a mango-ginger habanero daiquiri)!

WILL WINTER LAST SIX MORE WEEKS?
Honor the spotting (or not) of Punxsutawney Phil at lunch with **Mango Quinoa Salad**. Fresh mango delivers the taste of summer all year round!

MARCH
MANGO MADNESS
When customers gather for the playoffs, make fresh mango a member of the team with **Mango Manchego Stuffed Jalapenos with Curry Cornmeal Crunch**.

THE RETURN OF THE FRUIT SALAD!
Mango & Watermelon Salad kicks fruit salad up a notch with pickled jalapeño, garlicky lemon vinaigrette, fragrant cilantro and peppery watercress.

APRIL
MANGO BLISS
Breakfast and brunch menus get noticed when **Mango Bliss Cakes** are the featured item.

PROTEIN PARTNER
Fresh mango pairs perfectly with all your favorite proteins, brightening the flavor and filling the plate in the form of salsas, slaws, relishes, chutneys and sauces.

MAY
CINCO DE MANGO!
More than half the mangos consumed in the U.S. are grown in Mexico, which makes **Apricot Chili Marinated Lamb Tacos with Fresh Mango Jicama Slaw** a natural choice for the celebration.

MOTHER'S DAY DESSERT SPECIAL
A dessert that celebrates moms everywhere, **Mango Coconut Dessert Risotto with Tamarind Glass and Mango Chili Jam**.

Figure 23 Flavour Pairings

Ripe Mango

	Definitive	Dramatic	Daring
SAVORY	Sesame	Kombu	Pine
SALTY	Furikake	Shrimp Paste	Smoked Salt
SPICED	Allspice	Chai	Fenugreek
SWEET	Coconut Sticky Rice	Goat Milk Caramel	Aromatic Marshmallow
CRUNCHY	Carmel Corn	Cocoa Nibs	Fried Shallot
STARCHY	Quinoa	Forbidden Rice	Farro
HEAT	Serrano Chile	Peri-Peri	Togarashi
CREAMY	Goat Impastata	Burrata	Quark
SAUCY	Tamarind	Charmoula	Kewpie Mayo
OCEANIC	Barramundi	Mackerel	Eel
MEATY	Chorizo	Venison	Pancetta
GREEN	Bronze Fennel	Nasturtium	Sorrel
FRUITY	Green Tomato	Rhubarb	Finger Limes
SPIRITED	Pisco	Dry Oloroso Sherry	Allspice Dram
WET	Ginger Beer	Kombucha	Kefir

Unripe (Green) Mango

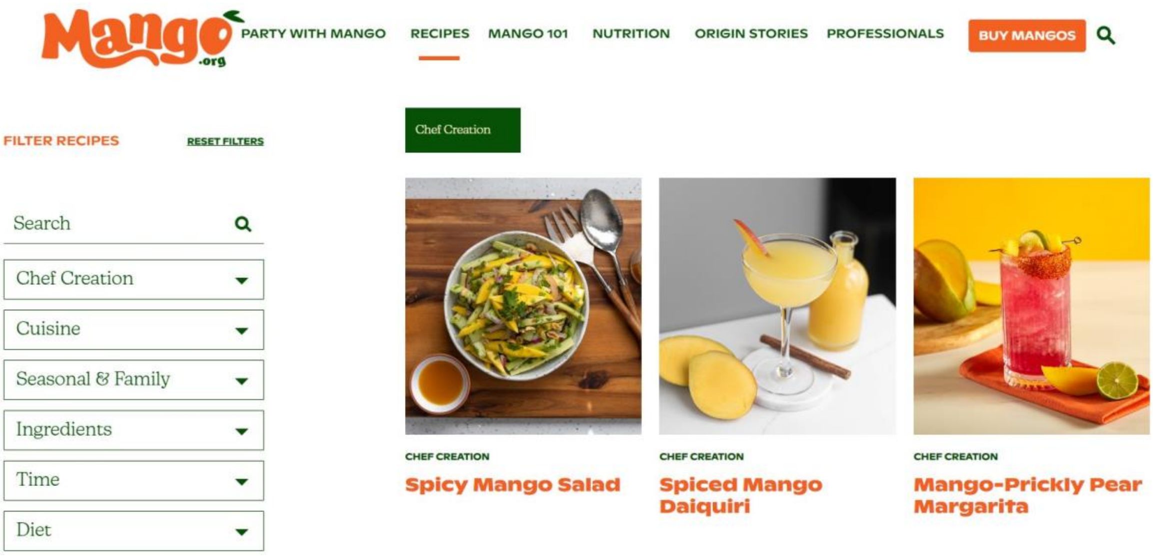
	Definitive	Dramatic	Daring
SAVORY	Saffron	Water Chestnuts	Smoked Paprika
SALTY	Gomashio	Shiro	Anchovy
SPICED	Za'atar	Allspice	Ras el Hanout
SWEET	Grade B Maple	Candied Bacon	Date Sugar
CRUNCHY	Peanuts	Pepitas	Wasabi Peas
STARCHY	Black Rice	Buckwheat	Amaranth
HEAT	Marash Pepper	Sambal	Gochujang
CREAMY	Cotija	Paneer	Mascarpone
SAUCY	Shoyu	Aromatic Pepper	White Miso
OCEANIC	Octopus	Dried Shrimp	Sea Urchin (Uni)
MEATY	Serrano Ham	Duck Bacon	Lamb Neck
GREEN	Pea Tendril	Watermelon Radish	Claytonia
FRUITY	Mangosteen	Pomelo	Husk Cherries
SPIRITED	Pisco	Dry Oloroso Sherry	Allspice Dram
WET	Lychee Juice	Cashew Milk	Fermented Coconut Juice

Prepared/Cooked Mango

	Definitive	Dramatic	Daring
SAVORY	Kimchi	Black Garlic	Ghee
SALTY	Bacon Salt	Sea Beans	Preserved Lemon
SPICED	Cardamom	Chinese 5-Spice	Mace
SWEET	Mochi	Cane Syrup	Gianduja
CRUNCHY	Chicharrón	Brazil Nut	Black Sesame
STARCHY	Koshihikari Rice	Purple Yam	Teff
HEAT	Harissa	Aleppo Pepper	Malagueta Chili
CREAMY	Manchego	American Brie	Halloumi
SAUCY	Agri-Dolce	Yuzu Kosho	Sofrito
OCEANIC	Amberjack	Sablefish	Sturgeon
MEATY	Guanciale	Foie Gras	Country Ham
GREEN	Lemon grass	Endive	Pineapple Mint
FRUITY	Yuzu	Limequat	Umbashi
SPIRITED	Mezcal	Ginger Liqueur	Smoked Rum
WET	Green Tea	Buttermilk	Horchata

TOP TECHNIQUES FOR MANGO PREPARATION/COOKING
Caramelize, Roast, Braise, Brûlée, Whip, Spherification, Kulfi, Pickle, Ferment, Nitro Freeze, Aam Panna, Grill, Char

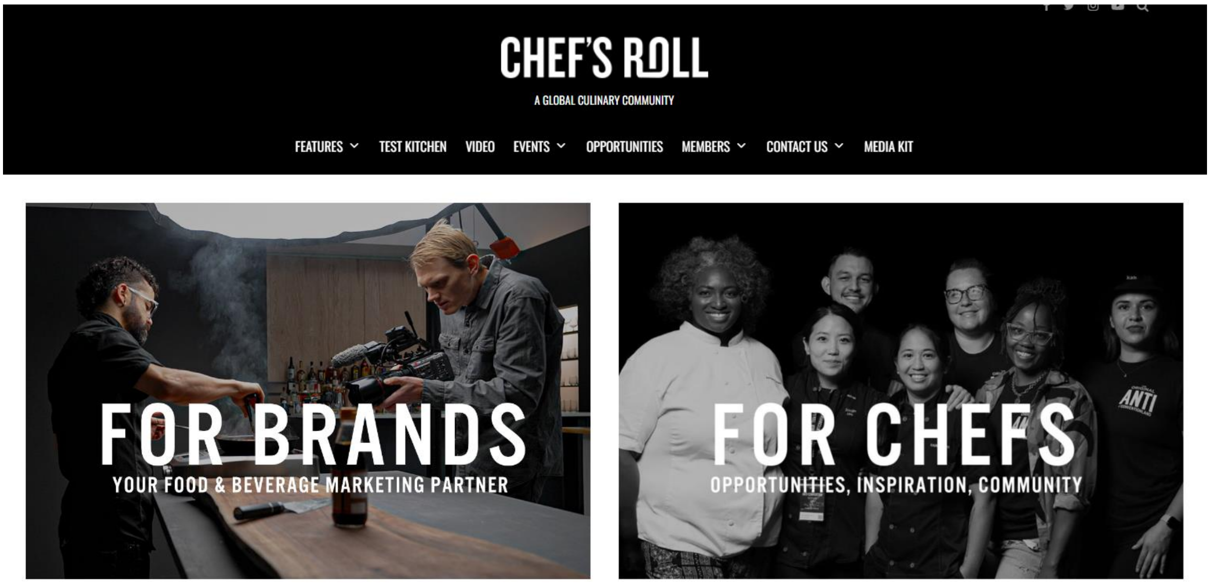
Figure 24 Searchable Recipes - Filtering option for Chef Creations



Access to Pier Chef Network

The capacity provides access and information from the “Chef’s Roll Global Culinary Community” that captures content from peir leading Michelin-starred Chefs and provides a forum for connection between to culinary students, mixologists, sommeliers, and hospitality industry professionals.

Figure 25 Chefs Roll Community



Culinary Curriculum

A set of presentations and videos are available. They provide a step-by-step guides and educational content designed for use and accessible to any culinary education provider.

Figure 26 Culinary Curriculum Content

- Introduction - Fresh Mango Curriculum
- Lesson 1 - Mango History & Production
- Lesson 2 - Mango Storage, Ripening & Cutting
- Lesson 3 - Mango Variety, Availability & Ripeness Levels
- Lesson 4 - Mango Nutrition
- Lesson 5 - Cooking with Fresh Mango in Global Cuisines
- Lesson 6 - Cooking with Fresh Mango in Hot Applications
- Appendix - Fresh Mango Curriculum

Handling & Storage Guides

A set of guides for Choosing, Storing and Preparing Mango's, and available in both pdf and video format.

Figure 27 Handing & Preparation Aids

Information and handling tips regarding Yields and Ripeness are also available, although these are not specific to Foodservice as also cover Retail channel.

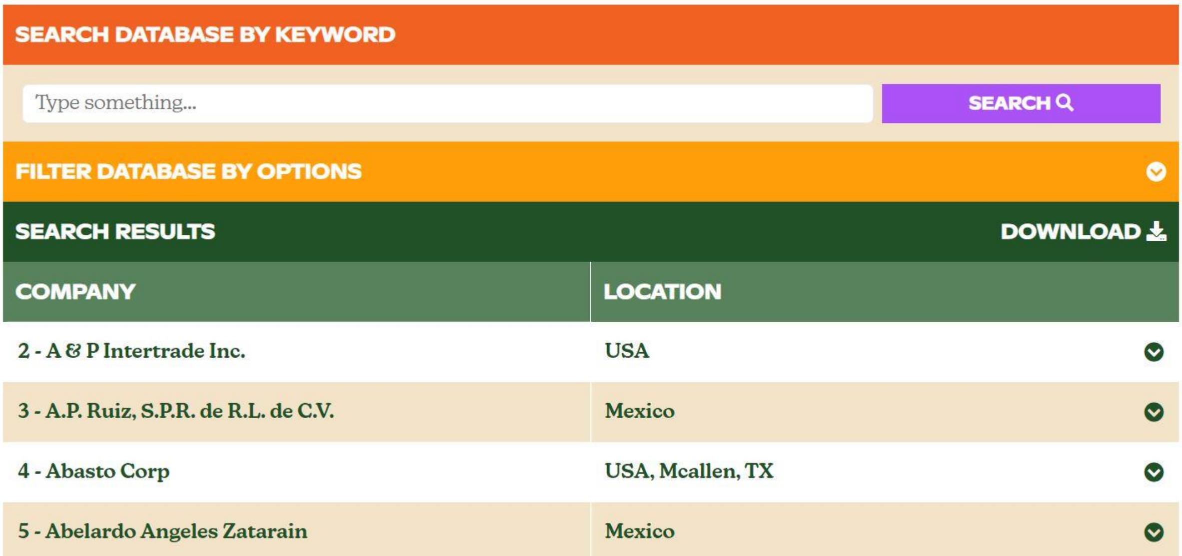
Distributor Guides

This includes a distributor brochure, in the form of a printable pdf with snippets of information from all the above. It is designed for distributors to provide to their end-customers.

Figure 28 Mango Distributor Guide

There is also access to an online searchable database of Mango suppliers.

Figure 29 Searchable Mango Supplier Tool



US Mango Board Summary

The information content provided by the US Mango Board is appropriate and relevant. It spans from introducing Mangoes to influencing their role in menus, and in several instances provides working level tools.

It is relevant to be aware that the US Mango Board provides the material to support all Mangoes distributed into the US retail and food service markets, the majority of which are imported. The combination of US production and imports makes Mangoes available 12 months of the year.

It is delivered via a website with open access to all users. While the digital capacity interface works it is assessed as less than best practice, but a valuable model of how to define content and support Mango supply chain stakeholders.

→ **The US Mango Board provides a wide range of content for audiences that include; producer, distributor, retailer, food service enterprise and consumer. Most content is aimed at supporting the middle of the supply chain and is assembled and delivered in ways that can serve as a content guide for supporting Australian Mango supply chain stakeholders.**

Apparent Food Service Fresh Mango Opportunities

The fresh mango food service settings frame the apparent opportunities and are summarise in the table below.

Figure 30 Apparent Mango Food Service Opportunities

Fresh Mango Food Service Settings	Apparent Opportunities
• Fresh Mangoes are seen as a food service ingredient, that can and does lift the profile and sales performance of a meal.	• Exploit the positive perceptions of the demand value mangoes can add, with a program designed to add fresh mangoes to menus.
• The fresh mango supply chain is pressured by a short seasonal window, a complex ripening requirement and the involvement of providores, who manage sourcing a full range of fruit & vegetables for food service clients.	• Ease the pressure points in the fresh mango supply chain into food service by ensuring continuity of supply and fruit consistency.
• Food service enterprises are under an increasing level of commercial pressure to remain viable. This pressure has increased their willingness to consider all ingredient forms including those that are part processed and ready for meal assembly.	• Position mangoes as an option to increasing the value of meals and therefore sales. **Doing so in ways that will aid the cost efficiency of food service operations using mangoes.**
• High proportions of mangoes are deemed unsuitable for retail distribution and are therefore available for food service and processing. To date the processed mango product outputs in Australia have not delivered on a commercial alternative to what can be produced in a food service kitchen from a fresh whole mango.	• Define the capacity required to produce a processed shelf stable mango product, that captures the KP taste attributes, and can be used as a fresh product ingredient in food service meals, beyond use in beverages.
• The KP mango flavor attributes are acknowledged as a highly desirable and uniquely Australian product feature in both local and international markets.	