

The opportunity  
for plant-based

**MEAT**

**ALTERNATIVE**

## PRODUCTS IN AUSTRALIA

### INTRODUCTION

The opportunity for plant-based meat alternative products (PBMAP) in Australia is a topic that is rapidly gaining momentum. The growth and development of PBMAP have flowed from the success experienced by businesses such as Impossible Foods and Beyond Meat in the USA. The highly anticipated and successful IPO of Beyond Meat on the Nasdaq has put PBMAP firmly on the radar of consumers, investors and participants in the food manufacturing industry.

In this paper, Comet Line Consulting provides a high-level overview of the plant-based meat alternative category and the opportunities for participants in the category.

**The paper covers the reasons consumers buy PBMAP, the types of meat alternatives available, the main participants in the category and the opportunity in Australia.**

### TARGET MARKET

Plant-based products have historically targeted consumers with a plant-based diet, i.e. vegetarians and vegans. Reasons for pursuing a plant-based diet include:

- ✓ Health reasons: meat-based diets may contribute to heart disease and other illnesses.
- ✓ Animal welfare and ethical reasons: consumers that align with veganism believe it is unethical for animals to be reared with the purpose of slaughtering the animal for consumption.



- ✓ Religious reasons.

Although the target market for PBMAP may include vegetarians and vegans, the products are targeted at a much larger consumer base referred to as flexitarians. Flexitarians try to reduce their meat consumption through increased consumption of plant-based alternatives. Flexitarians do not abstain from meat consumption but rather reduce the intake of meat over time. Reasons for adopting a flexitarian diet include:

### **SUSTAINABILITY AND THE IMPACT MEAT CONSUMPTION HAS ON THE ENVIRONMENT**



- ✓ The growing human population will mean that food production will have to increase by 50% over the next 30 years to support 10 billion people. The challenge to feed 10 billion people will require new and more efficient food sources to be developed and less efficient food sources to be deprioritised.
- ✓ Livestock farming contributes 18% of human produced greenhouse gas – more than all the emissions from ships, planes, trucks and all other transport combined. Increasing livestock farming from current levels to meet the future food requirements will have a negative impact on the environment.
- ✓ Meat production is also highly inefficient. The production of one kilogram of meat protein requires significantly more land and water resources compared to the more efficient use of resources by plant-based alternatives.

### **HUMAN HEALTH**

- ✓ The extensive use of antibiotics on animals reared for food potentially poses serious health risks to humans. Antimicrobial medicine used on farm animals is a leading cause in the rise of superbugs that are resistant to all but the strongest antibiotics.
- ✓ Flexitarians are making a conscious choice to reduce meat consumption but do not necessarily have the same principled and ethical objections to meat consumption as vegetarians and vegans. A flexitarian diet is sometimes referred to as semi-vegetarian or casual vegetarian. The rise of the flexitarian diet is a result of people taking an environmentally sustainable approach to their diet and swapping meat consumption with plant-based alternatives. It is estimated that about one third of consumers in the United Kingdom are deliberately reducing their meat intake.
- ✓ The flexitarian consumer base is significantly larger than the vegetarian and vegan consumer base. Flexitarians are firmly in the sights of suppliers of PBMAP as a consumer segment that values the appearance, taste and texture of meat-based products but would prefer a plant-based alternative if available.







Meat alternatives are classified into two categories, **cell-based** and **plant-based**.

### 1. CELL-BASED MEAT PRODUCTS

Cell-based products are grown in laboratories from meat cells extracted from a living animal. The extracted cells are placed in a nutrient-rich environment and allowed to grow. Cell-based meat is grown in clean facilities and therefore reduces the risk of contamination from harmful antibiotics.

Cell-based meat products are still in the research and development phase with no products available for sale at the moment.

The development of a cell-based meat product requires research using tissue-engineering techniques to develop products that mimic the taste and texture of real meat. The first cell-based hamburger patty was developed in 2013 and took 3 laboratory technicians 3 months to nurture 20,000 fibres to form the burger patty. The science has since progressed and the first beef steak was developed from cultured meat in 2018.

The cost of producing cell-based products is a consideration and the challenge for participants will be to scale up production to make cell-based products affordable for everyday consumption.

According to the Global Food Initiative, \$50 million was invested in cell-based meat companies in 2018. The first cell-based products are expected to be available to consumers in 2021.

### 2. PLANT-BASED MEAT ALTERNATIVES

Plant-based products are the second category of meat-alternative products being developed for consumers. Plant-based products are further progressed than cell-based products, with plant-based products available for consumption by the public.

PBMAP mimic the taste, texture and visual appearance of real meat. Some plant-based products even “bleed” like real meat using beetroot juice to create the red appearance of meat. Research and development by participants have focused on creating plant-based products that mimic the appearance, flavour, texture and aroma of real meat.

Two US-based companies, Beyond Meat and Impossible Foods, have been at the forefront of developing plant-based meat alternatives. Both companies have invested significantly to develop products that closely mimic real meat.

### IMPOSSIBLE FOODS



Impossible Foods was founded in 2011 with the aim of giving people the taste and nutritional benefit of meat and dairy products without the negative health and environmental impacts associated with livestock products.

Impossible Foods scientists discovered that the heme protein is an important molecule in making meat taste like meat. Heme is the molecule that gives blood its red colour and helps carry oxygen in living organisms. Impossible Foods uses a protein derived from the roots of soy plants to produce the heme molecule. The heme protein is credited with replicating the taste, mouthfeel, aroma and texture of real meat in plant-based products produced by Impossible Foods.

Impossible Foods has raised \$750 million from investors including Bill Gates, Temasek Holdings, UBS, Horizons Venture and Leonardo DiCaprio to support the research and development of its product portfolio.

The Impossible Burger 2.0 was launched in January 2019 to great acclaim. In April 2019, Impossible Foods entered into a distribution arrangement with Burger King to offer Impossible Whopper burgers nationally at Burger King outlets in the US. The Impossible Whopper contains a plant-based patty that looks and tastes like real meat. By the end of 2019 Impossible Whopper will be available at nearly 7,300 outlets.

## MEAT ALTERNATIVE PRODUCTS

### BEYOND MEAT



Like Impossible Foods, Beyond Meat has developed plant-based products based on molecular science where the cells are created to mimic that of animal protein. Beyond Meat claims that its burgers offer the same fatty mouth feel as beef burgers. The Beyond Burger uses beetroot juice to mimic blood and pea protein as its main protein ingredient.

Beyond Burger was the first plant-based meat product to be ranged and sold in the meat fridge in corporate grocery. The ranging of the Beyond Burger in the meat fridge gave the product legitimacy as the meat fridge is where the flexitarians shop for their protein. The Beyond Burger is sold in 15,000 grocery stores and 12,000 restaurants worldwide.

Beyond Meat listed on the Nasdaq on 2 May 2019. The IPO, priced at \$25 per share, was a success after the share price increased by 163% on listing and closed at \$65. The Beyond Meat share price has since settled at about \$80 giving the company a \$4.8 billion market cap.

The share price performance is remarkable considering Beyond Meat reported revenue of \$88 million, gross profit of \$17.5 million and net loss after tax of \$19 million in 2018. The current share price implies a valuation of north of 50x 2018 revenue, which is a super high valuation, even when compared to technology companies such as Netflix and Facebook.

### TOP ONE DAY PERFORMANCE OF IPO'S SINCE 2000

COMPANY	YEAR	ONE-DAY POP
Avanex Corp.	'00	377.8%
UTStarcom Inc.	'00	278.5%
Storage Networks Inc.	'00	234.3%
Oni Systems Corp.	'00	230.3%
Rhythms Netconnections Inc.	'00	229.2%
Giga Media Ltd.	'00	225.9%
Diversa Corp.	'00	212.5%
Avici Systems Inc.	'00	212.1%
McDATA Corp.	'00	205.6%
Niku Corp.	'00	187.5%
CoShine Communications Inc.	'00	174.2%
<b>Beyond Meat Inc.</b>	<b>'19</b>	<b>163.0%</b>
Youku.com Inc.	'10	161.3%
Palm Inc.	'00	150.2%
Castlight Health Inc.	'14	148.8%
Bookham Technology plc	'00	146.3%
Viva Net.Works Inc	'00	137.2%

Source: Dealogic

To explain the valuation multiple, analysts point to the growth of the plant-based dairy industry which is currently about 13% the size of the dairy milk industry in the USA. Using the dairy industry as a proxy, the size of the meat category in the US is roughly \$270 billion. Applying a 13% share to the meat category suggests a potential market size of \$35 billion for plant-based meats.

Sceptics point out that plant-based meat alternatives are not necessarily healthier than conventional meat. It is argued that consumers initially adopted plant-based milk products predominantly for health reasons (lactose intolerance, etc.), with initial consumption concentrated within consumers that were unable to consume dairy milk products. The switch by flexitarians to plant-based meat products are not necessarily motivated by health reasons. Sustainability, the impact on the environment and access to products free of antibiotics are the main reasons flexitarians are reducing meat consumption in favour of PBMAP. Sceptics argue that PBMAP will attract less than a 13% share of the meat category as consumers are not completely swapping out of meat products but rather switching between meat products and PBMAP.

**In addition to the two specialist companies listed above, participants in the developing plant-based meat category include:**

- ✓ Food corporates – Nestle announced in April 2019 the launch of the Garden Gourmet Incredible Burger in eight European countries with plans to roll out a plant-based burger product in the USA.
- ✓ Animal protein companies – Tyson Ventures and Maple Leaf Foods are two meat companies that have invested in plant-based specialists. Cargill has invested in cell-based meat alternatives.
- ✓ Private label suppliers which are expected to play an important role in retail in Europe.

## AUSTRALIA

Australia is a country with a history of consuming meat-based products and is the country with the highest per capita meat consumption in the world.

### TOP MEAT EATING COUNTRIES

Kilograms per capita, per year, 2013

Australia	93
United States	91.1
Israel	86
Argentina	84.7
Brazil	78.1
New Zealand	73.5
Canada	70.5
Malaysia	54.9
South Africa	50.7
South Korea	50.2
China	48.8

Source: OECD

Meat consumption per capita has been stable since the 1960s at 110 kilograms per person per year, however type of meat consumed has changed. Consumption of chicken and pork now outstrips the consumption of beef, mutton and lamb mainly due to increases in the cost per kilogram of beef, mutton and lamb. (See Graph on next page).

Australia also has a long history of vegetarian and vegan products. Woolworths, Coles and Aldi stock numerous vegetarian and vegan brands and products. Euromonitor considers Australia's packaged vegan food market to be worth \$136 million, growing to \$215 million in 2020. Australia has the fourth largest vegan food labelling market in the world after the USA, Germany and Britain. Australia is the third fastest growing packaged vegan food market in the world.

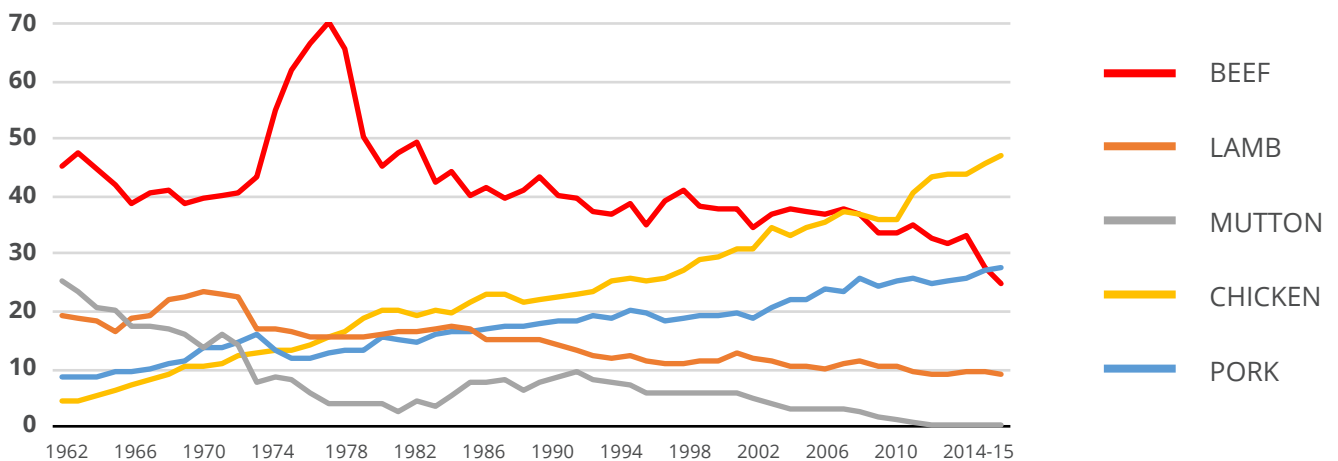
There is a limited supply of PBMAP available in retail in Australia. Comet Line has found the plant-based products listed below targeted at the flexitarian consumer:

- ✓ Beyond Burgers (available in Coles)
- ✓ Funky Fields mince (available in Woolworths)
- ✓ Alternative Meat Company, distributed by Life Health Foods, a subsidiary of Sanitarium





## MEAT CONSUMPTION IN AUSTRALIA (KG, PER CAPITA, BY TYPE) 1962-2016



Source: Wong et al

In foodservice, the take up of PBMAP has also been slow. Vegan fast food chain, Lord of the Flies was the first fast food outlet in Australia to offer the Beyond Burger on its menu in April 2018.

Momentum is however, building in foodservice. Competitive Foods Australia (CFA) invested \$1 million in V2Food. V2Food was formerly part of the CSIRO and is developing plant-based meat alternative products backed by research conducted by the CSIRO. CFA's distribution network of 440 Hungry Jack's stores across Australia will provide V2Food with an ideal platform for distributing product into the foodservice channel in Australia.

## WHERE TO FROM HERE

PBMAP has certainly captured the attention of the food industry in recent times. Depending on one's position in the industry it presents either an opportunity or a threat. Investors have led the way supporting several food technology startups to become fully fledged businesses, in the USA and now also in Australia.

The success of PBMAP will depend on the end product and whether a plant-based product can mimic a real-meat product. To have a meaningful impact the plant-based product must look, smell, taste and cook like real meat. Plant-based products that can replicate the experience of preparing, cooking and eating real meat will no doubt be successful. An entire new consumer base is available to be serviced for products that exhibit these characteristics.

An exciting time lies ahead for the food industry and investors in the food industry as there will no doubt be success stories of products that met the consumers expectations. We are also under no illusion that there will be products which will not meet consumer expectations and that will fall by the wayside as consumers support products that best meet their needs.

**Comet Line is keeping a close eye on developments in this part of the food industry.**



Comet Line Consulting is a strategic advisory business that specialises in acquisitions and divestments within the Australian and New Zealand food & beverage industry. Deep industry knowledge and strong relationships with business owners, trade investors and financial investors are defining features of the Comet Line Consulting business.



**David Baveystock** has worked in the Australian food and beverage industry for over 25 years including senior roles with Nestle Australia and Manassen Foods. David is recognized as a leading executive in the food and beverage industry and consults to senior management and business executives.



**Ben van der Westhuizen** has 25 years corporate advisory experience and has advised on a variety of transactions with a collective value in excess of \$2 billion. Ben has advised on acquisitions, disposals and capital raisings in both Australia and South Africa. Ben has held senior corporate advisory roles with KPMG Corporate Finance, Challenger and PSG Group where he advised on several high-profile transactions.



**Lindsay Cunningham** has worked in the Australian and international food industry for over 35 years, with executive roles at Givaudan, Arnott's, Uni Chef and I&J Foods. After a corporate career, Lindsay has directly provided strategic consulting services to a range of clients including Allied Mills, Arnott's, Nestle, Fonterra, Goodman Fielder International, Lindt and the Sydney Fish Market.

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