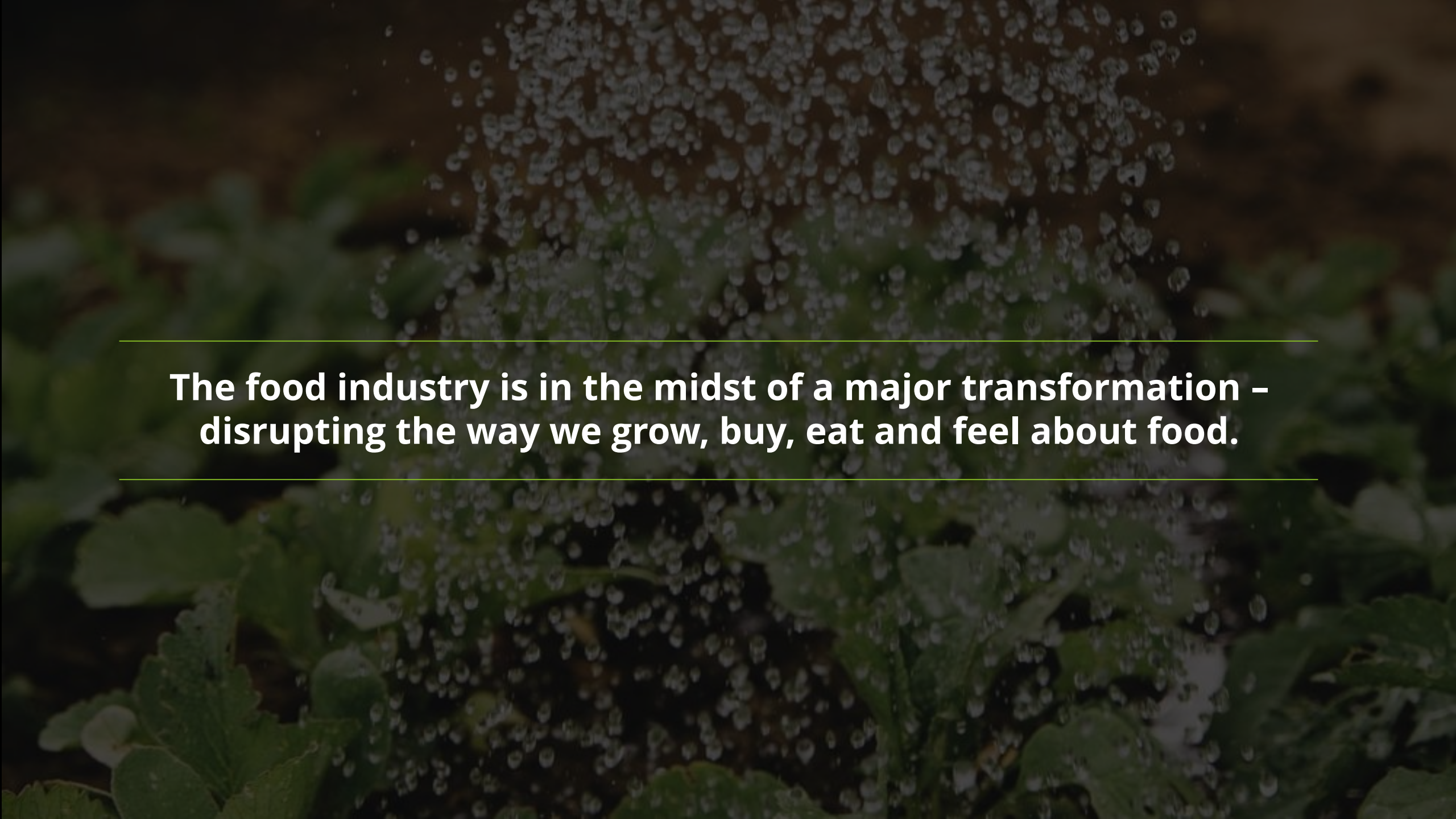




## **The Future of Food**

The trends that are shaping the industry

Vanessa Matthijssen | National Consumer Products Lead



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**The food industry is in the midst of a major transformation –  
disrupting the way we grow, buy, eat and feel about food.**

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# Societal, environmental and technological shifts are **reshaping consumer preferences...**



Planetary  
boundaries



A global health  
imperative



Technological  
advancements

Awareness of **climate change and the impact of food** on the environment is fuelling the “Reductarian / Flexitarian” movement.

The **digitally empowered** and **conscious consumer** is paying attention to the impact of their dietary choices and want more from their food.

The need for **convenience** and **hyper-personalisation** is growing and is visible in our changing food delivery system and through the uptake of personalised meal plans.

Technological advancements are disrupting the food system and transforming the role of **food as a science** including the acknowledgement of **food as a medicine**.



...creating a future full of **possibility** and endless **opportunities**...

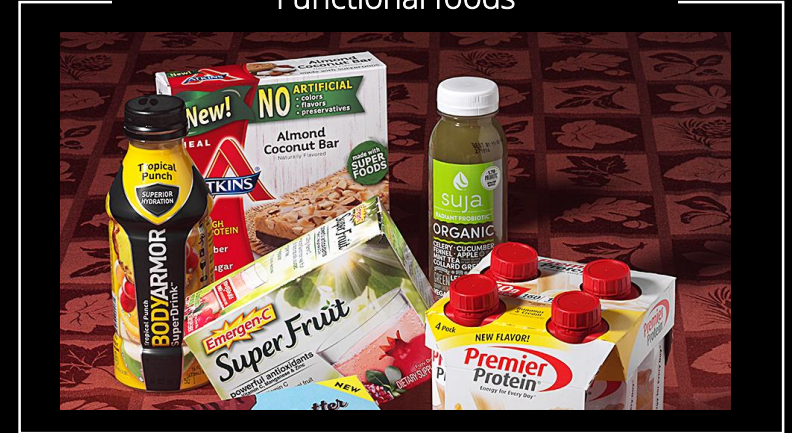
Alternative proteins



Synthetic foods



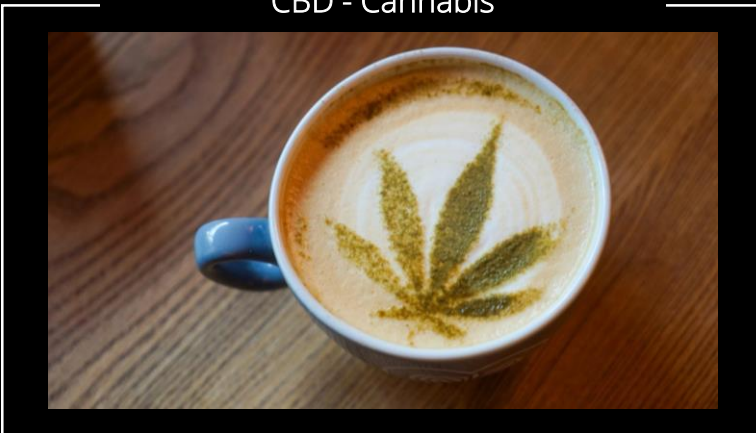
Functional foods



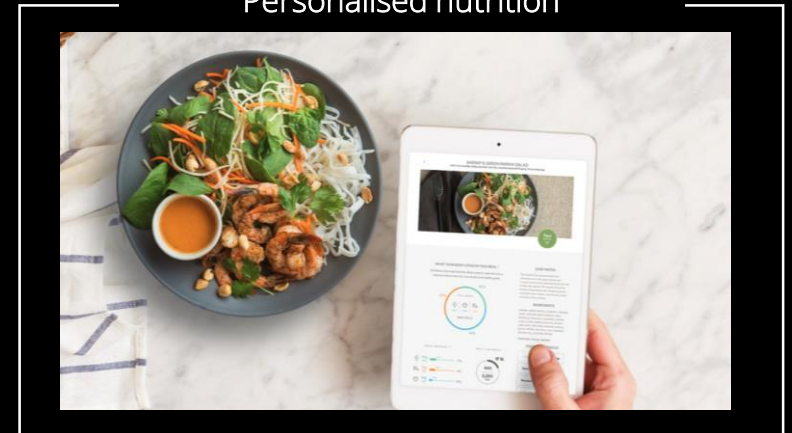
Probiotics and fermented foods



CBD - Cannabis



Personalised nutrition

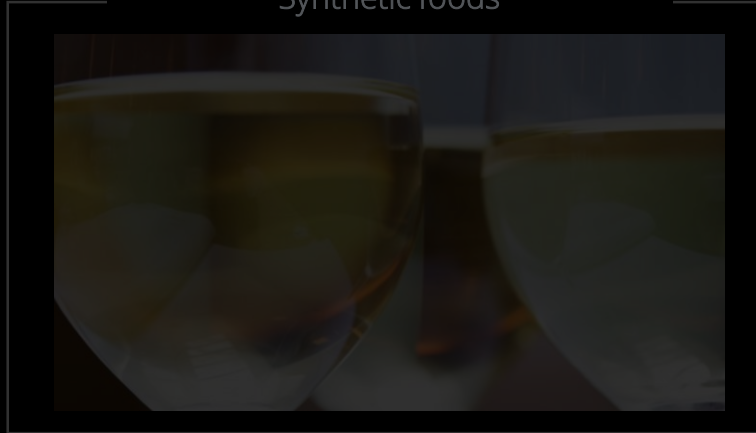


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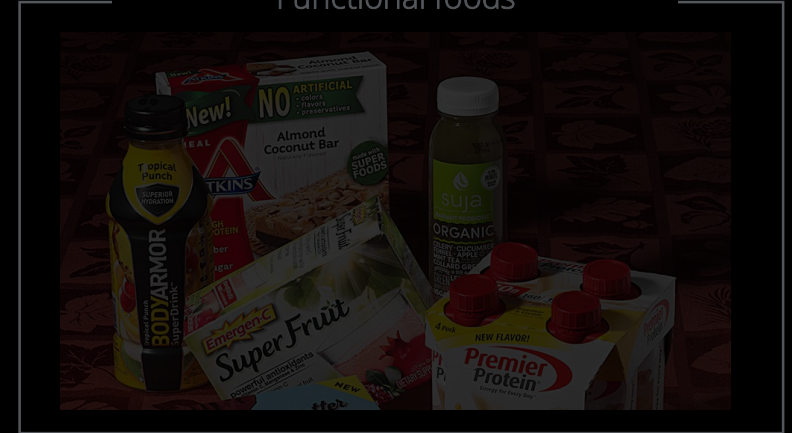
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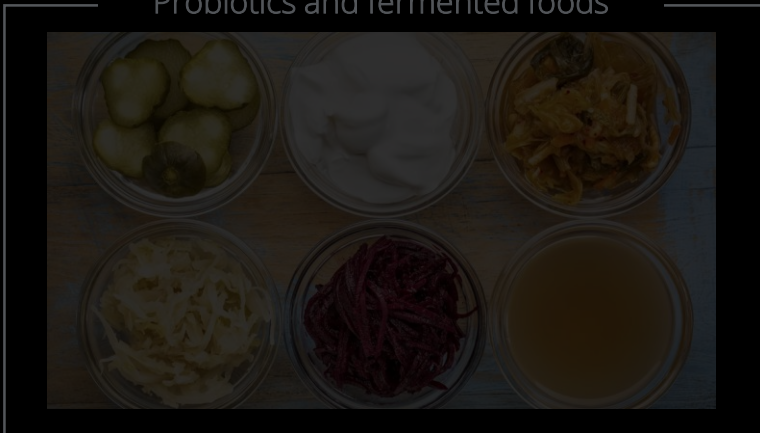
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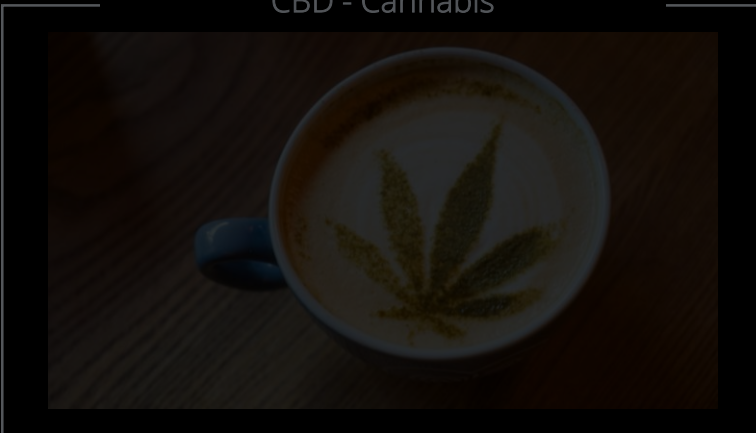
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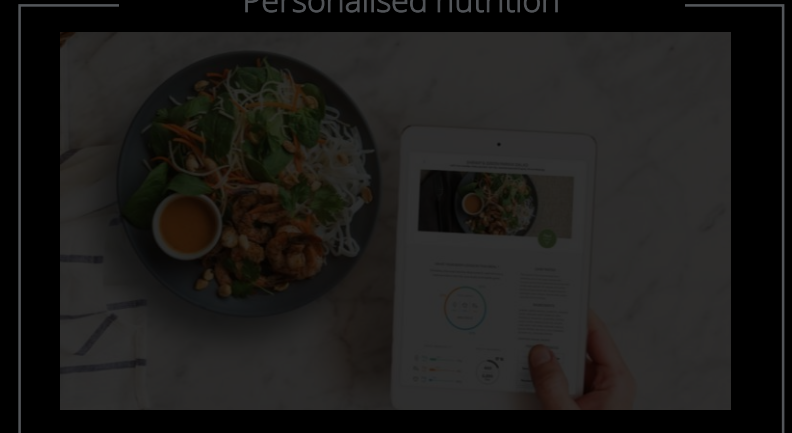
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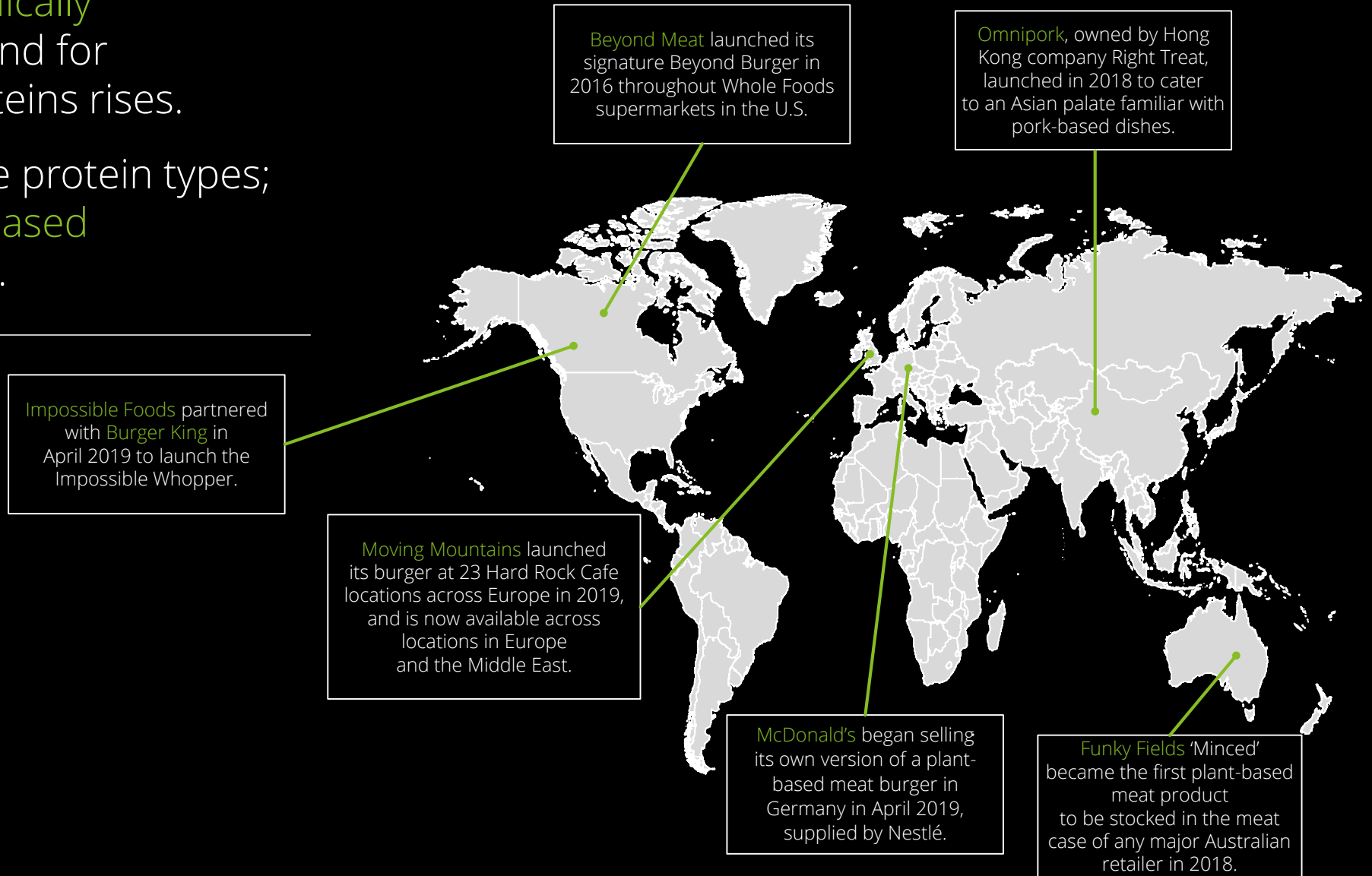


Personalised nutrition






















































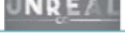














The protein industry is radically transforming as the demand for alternatives to animal proteins rises.

There are three alternative protein types; 1) insects/algae, 2) plant-based and 3) cell-based proteins.





Brand	Plant-based meat products stocked in major Australian retailers*	Retailers	Manufacturing Origin
The Alternative Meat Co. 	2-5	coles 	 Australia
Bean Supreme 	6-10	coles  	 New Zealand
Beyond Meat 	1	coles 	 USA
Coco & Lucas 	2-5		 Australia
Eaty 	2-5	coles 	 Australia
Field Roast 	2-5		 USA
Fry's Family Foods 	>10	coles  	 South Africa
Funky Fields <i>Funky Fields</i>	1		 Denmark
Gardein 	6-10	coles  	 Canada
Linda McCartney 	6-10		 United Kingdom
Loma Linda 	6-10	coles	 Thailand
Nature's Kitchen 	2-5	coles	 Australia
Next-Gen 	1		 Australia
Quorn 	>10	coles  	 United Kingdom
Sophie's Kitchen 	5-10	coles  	 Taiwan
Sunfed 	1	coles	 New Zealand
Tofurky 	2-5	 	 USA
Unreal Co. 	2-5		 Australia
Veef 	1		 Australia
The Vegan Factor 	2-5		 Australia
Vegie Delights 	>20	coles  	 Australia

Source: Food Frontier (Meat the Alternative – 2019)

## Plant-based meat: what can we find in Australian supermarkets?

Plant-based meat is one 'alternative protein' where a commercial market already exists in Australia - **\$150 million AUD in consumer spend last year** (approximately 75% in foodservice and 25% in grocery).

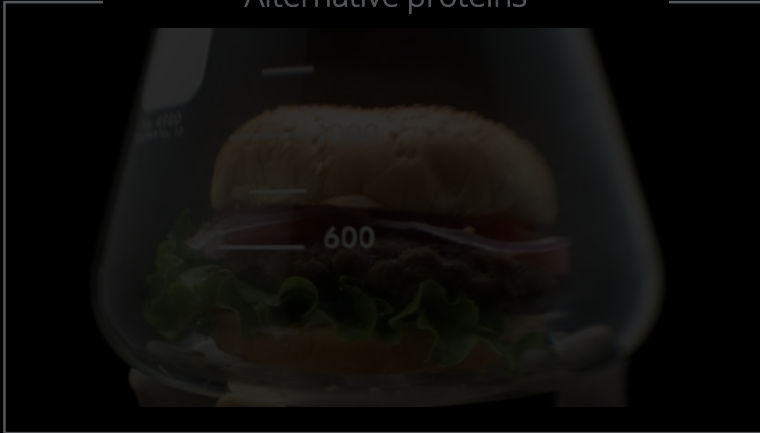
The product aims to replicate the sensory experience of cooking and eating meat and is **targeted towards flexitarians** (as opposed to vegans or vegetarians).

For the first time in Australia, Deloitte Access Economics were engaged by Food Frontier to **quantify the size of the sector** and its future economic potential.

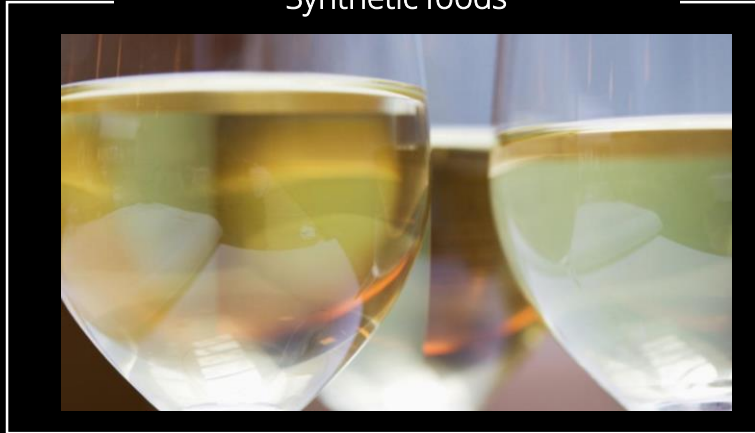
By 2030, the Australian plant-based sector is estimated to contribute almost **\$3 billion AUD** in domestic sales.

...creating a future full of **possibility** and endless **opportunities**...

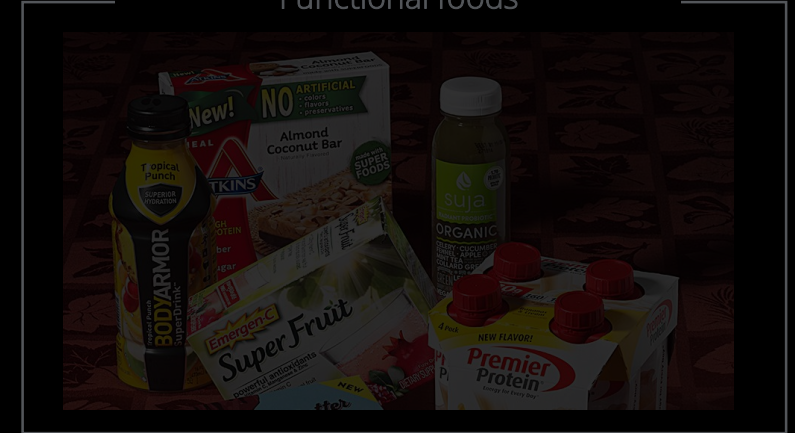
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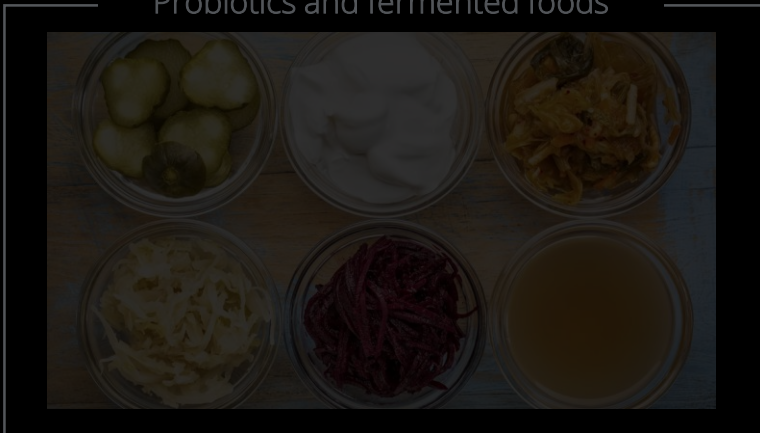
Synthetic foods



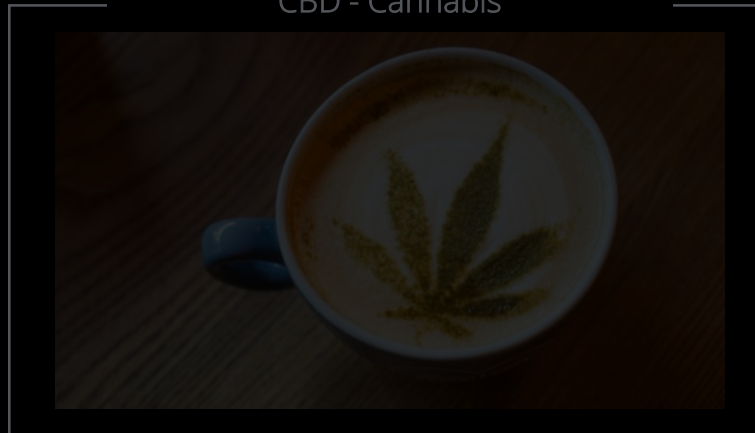
Functional foods



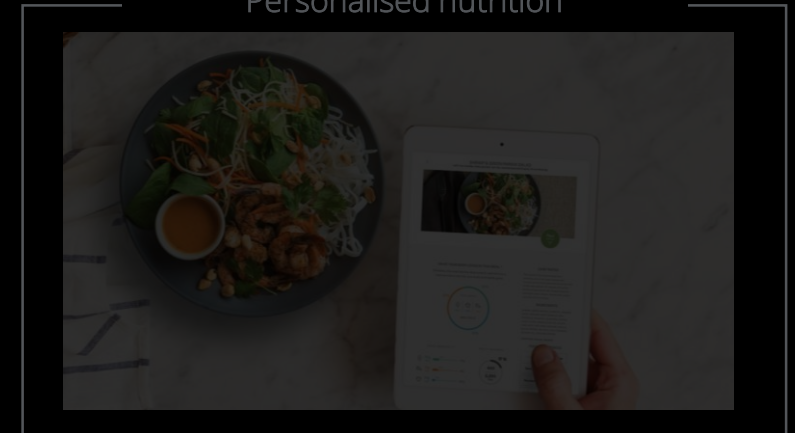
Probiotics and fermented foods



CBD - Cannabis



Personalised nutrition





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New technologies are creating the possibility of manufacturing and consuming **synthetic food and drinks**.

These artificial foods are developed from **chemically synthesised food compounds** and mimic the appearance, taste and texture of natural foods down to a molecular level.

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**\$2.97**  
Billion USD

The global synthetic food industry is expected to grow at a **CAGR of up to 5.87%** to see a **market size of \$2.97 billion** (USD) by 2025.

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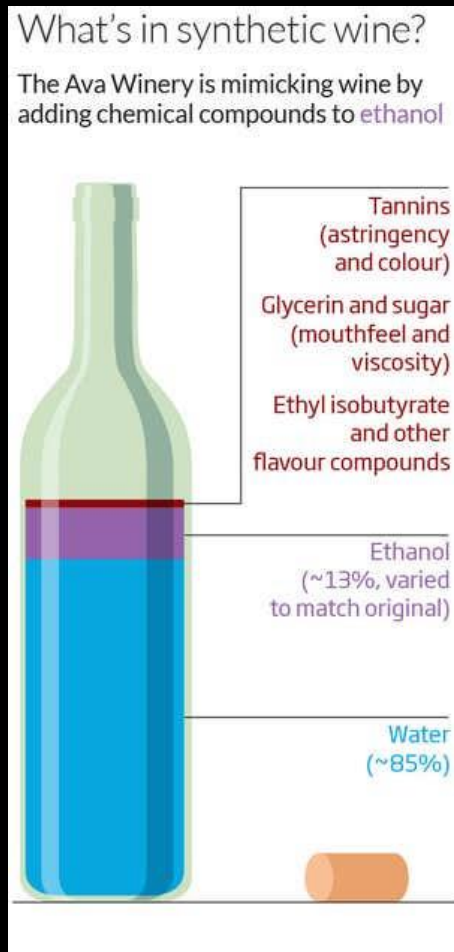
Endless West reported that **90% of people were unable find the difference** between their synthetic Moscato and natural wine during a blind taste test.

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US Agri tech company **Perfect Day** has developed a wide range of **synthetic dairy products** such as its signature ice creams by producing whey and casein proteins in the lab, mixed with other ingredients found in natural dairy products.

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## Example – Ava Winery

Ava Winery, a San Francisco start-up that is making synthetic wine without grapes – simply by combining flavour compounds and ethanol.

*“We can turn water into wine in 15 minutes.”*

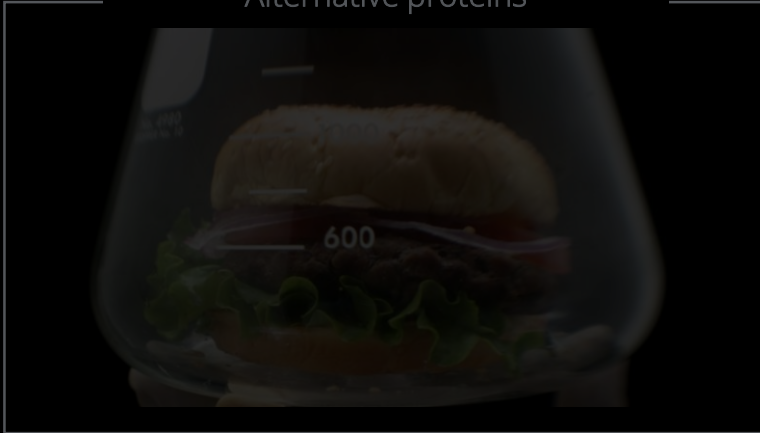
The team combines chemistry with the expert taste buds of a qualified sommelier.

Using gas chromatography mass spectrometry and other tools, the team analysed the composition of wines including Chardonnay, champagne and Pinot Noir, identifying key flavour molecules – like the esters ethyl isobutyrate and ethyl hexanoate – and their concentrations (see graphic).

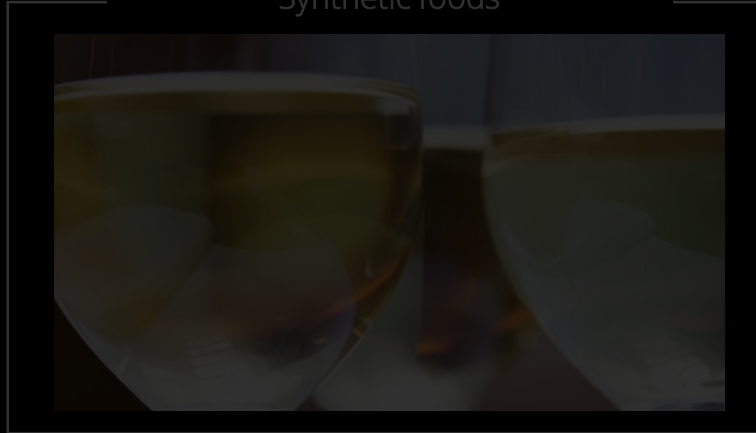
They then mixed these molecules and tinkered with their proportions, and had their sommelier test their resulting concoctions

...creating a future full of **possibility** and endless **opportunities**...

Alternative proteins



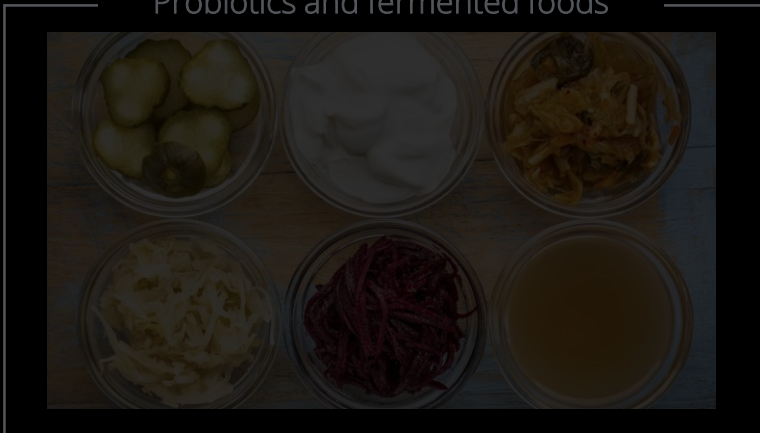
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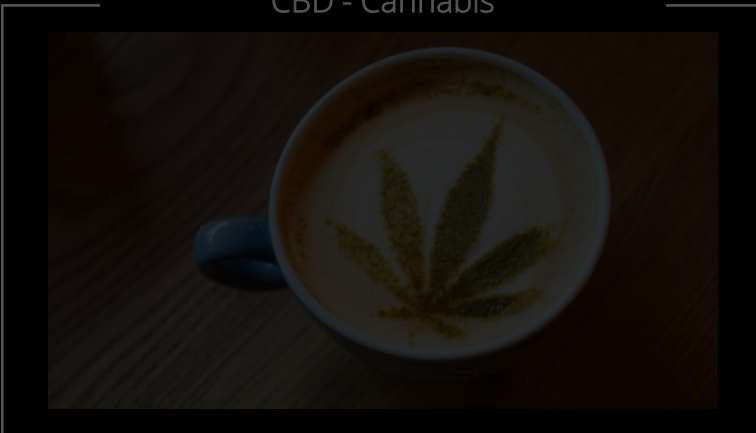
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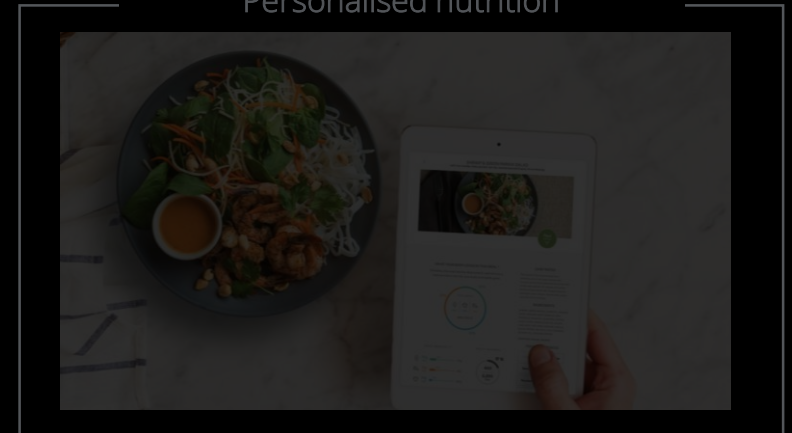
Probiotics and fermented foods



CBD - Cannabis



Personalised nutrition





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Functional foods are catering to the rise of wellness focused diets, promising substantial benefits to consumers on both a mental and physical level, such as accelerated cognitive abilities including sleep aid and increased sporting performance

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*Global food and beverage launches with a "sports and recovery" claim have seen a 23% average annual growth from 2014 to 2018*

*"Energy and alertness" claims follow closely behind with 12% growth over the same period*

Source: Grandview Research; Nutra Ingredients; Innova Market Insights; Mr Supplement

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**\$161.49**  
Billion USD

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The global functional foods market is estimated at \$161.49 billion USD in 2018, with an expected CAGR of 7.9% over 2019 to 2025

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**\$5.5**  
Billion AUD

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AU consumption of fortified and functional food products is expected to reach \$5.5 billion AUD by 2030, with an additional opportunity for export to reach \$4.2 billion AUD particularly to markets with largely vegetarian populations

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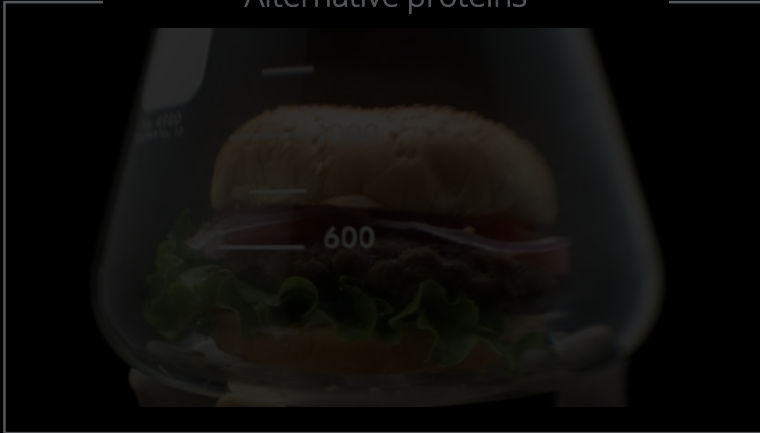


Body Science is a popular Australian sports nutrition company offering high quality supplements aimed at increasing athlete performance.

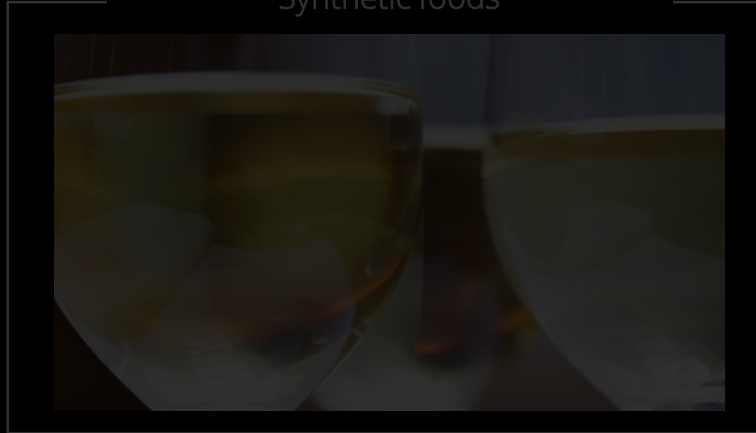
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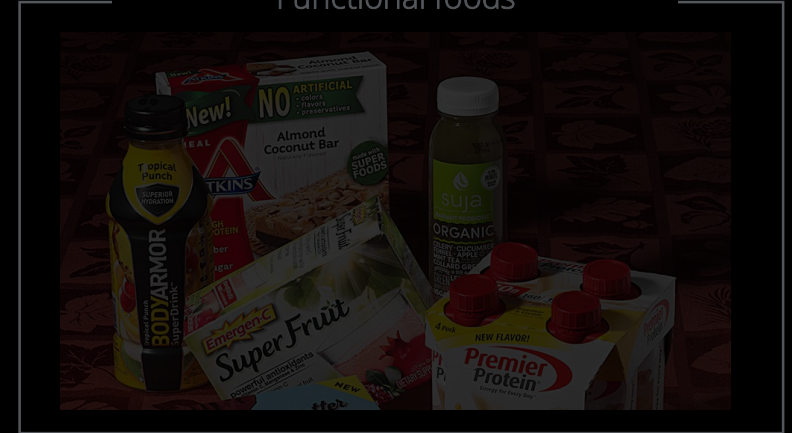
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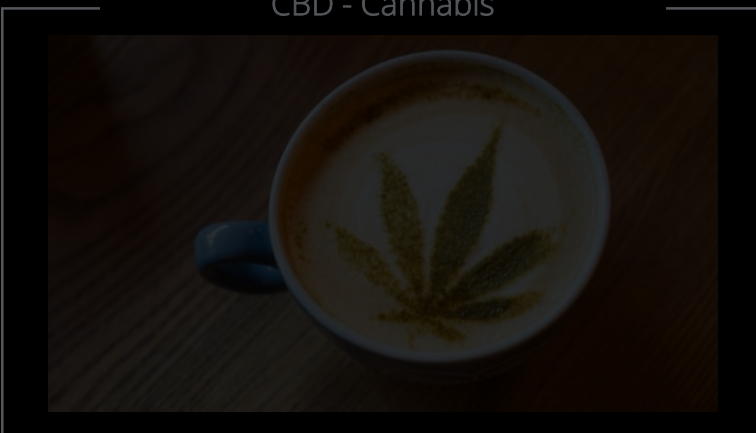
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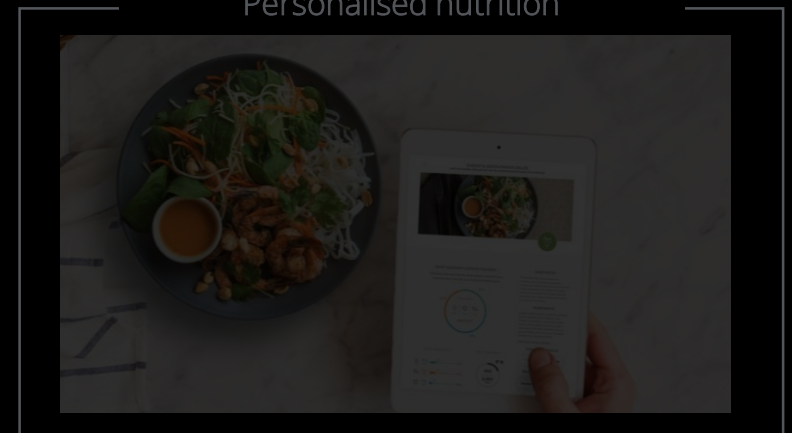
Probiotics and fermented foods



CBD - Cannabis



Personalised nutrition



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**Probiotics** in the form of supplements and **fermented foods** (live bacteria naturally found in the gut) are rapidly growing in popularity

It targets weight management/obesity, digestive issues and the immune system. There is increased evidence linking it to mental health (depression and anxiety) – **gut-brain axis**

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**\$58.15**  
Billion USD

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The global naturally fermented food market size is expected to grow incrementally by **\$58.15 billion USD** during 2018-2022 at a **CAGR close to 7%**

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The **Kombucha industry** is booming in Australia, with an **estimated market value of \$200 million AUD** in 2019

Its popularity continues to grow, surfacing in local pubs thanks to partnerships such as The Bucha of Byron and Stone & Wood Brewing Co., offering a beverage similar to beer and less sugary than soft drinks

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**Harris Farm** offers a wide range of fermented products in its campaign for "**A Happy Gut**," specifically targeting gut wellness. Products include kefir pots and drinks, yoghurts, fermented vegetables and kombucha

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And probiotics are now making their way into pet care...



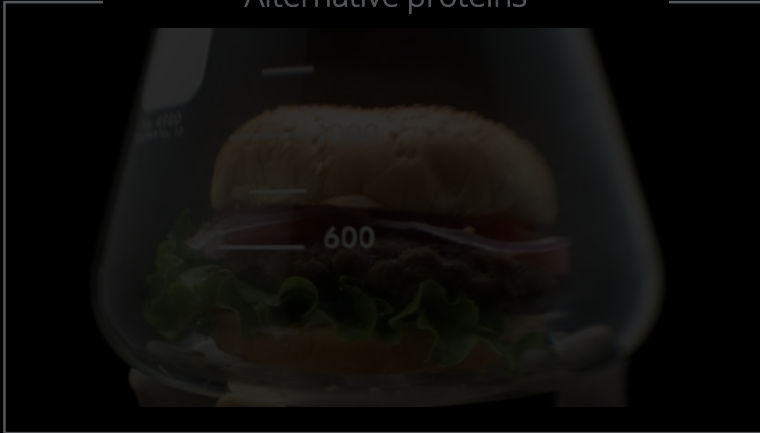
Over 60 percent of dog owners indicate their dogs regularly exhibited one or more anxious behaviours

Nestle Purina has released a nutritional supplement for dogs to support those suffering from fear and anxiety. This product contains the probiotic strain bifidobacterium which help dogs maintain calm

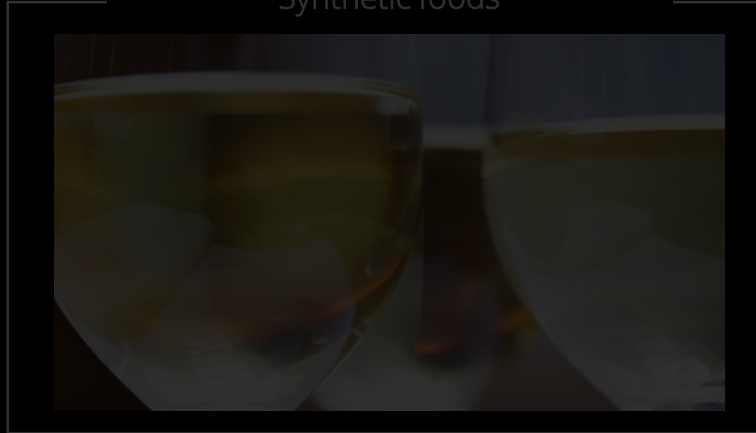
Nestle sells this product through specialty and veterinary clinics

...creating a future full of **possibility** and endless **opportunities**...

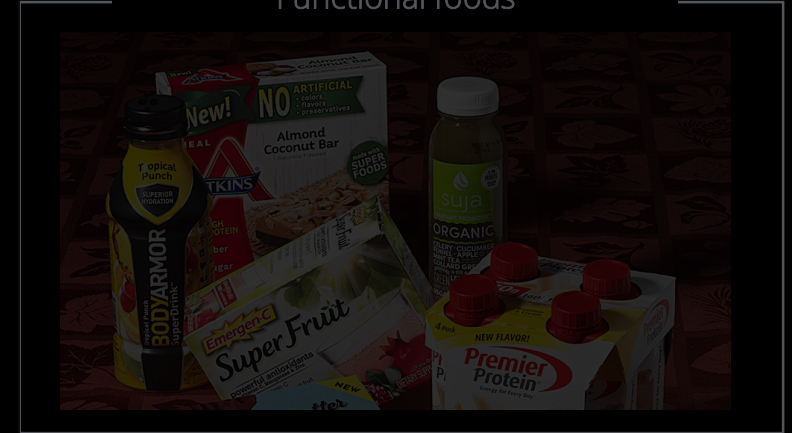
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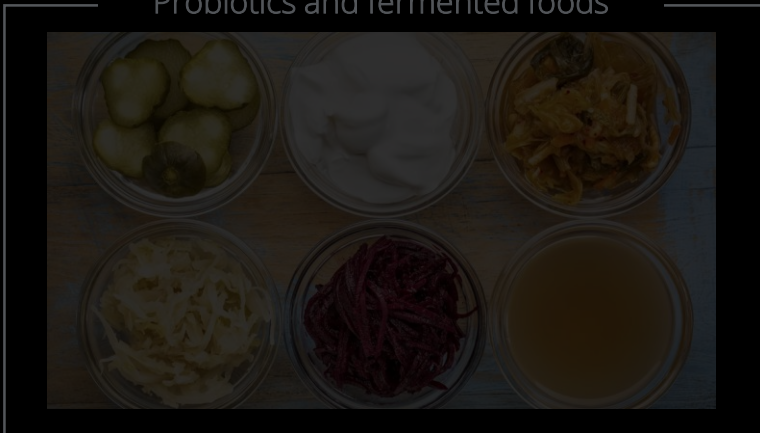
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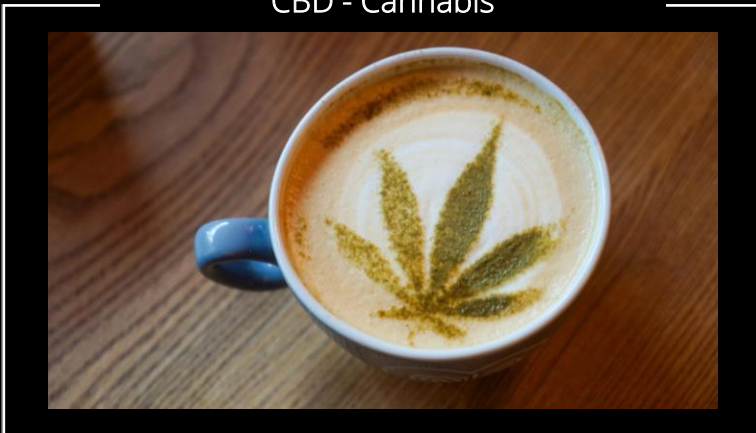
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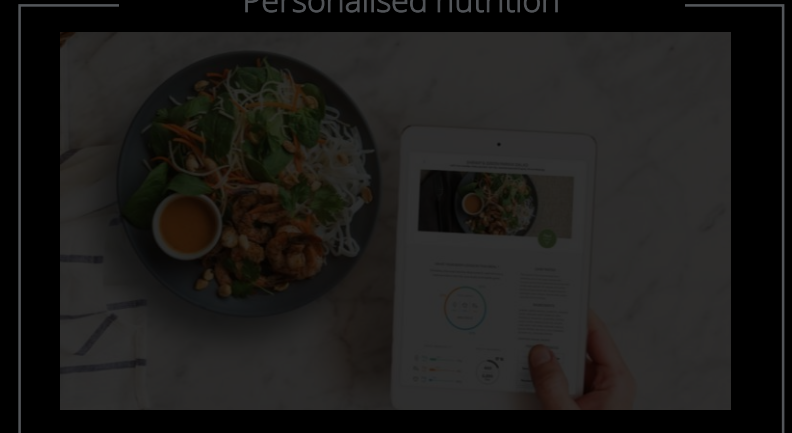
Probiotics and fermented foods



CBD - Cannabis

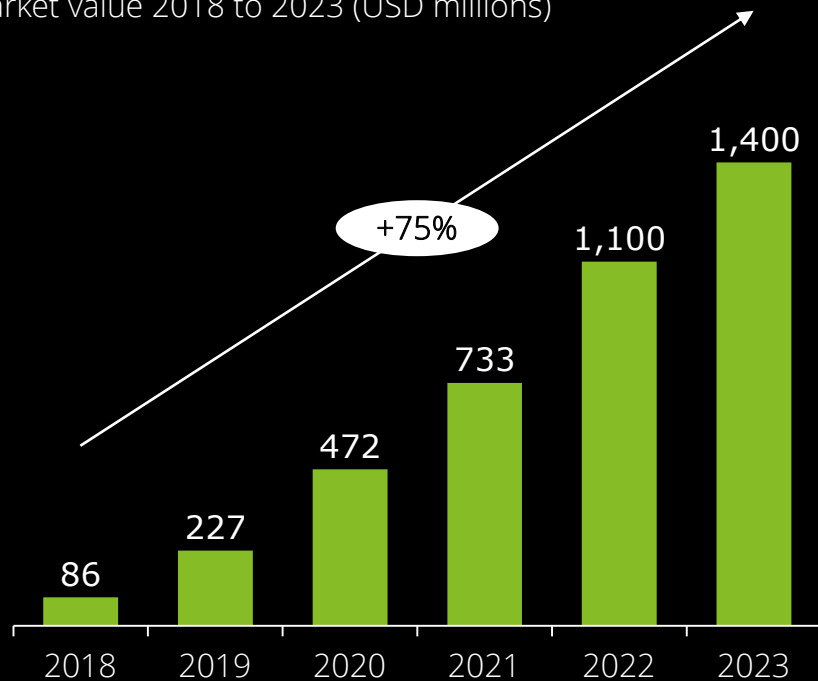


Personalised nutrition



The growth of the cannabis industry is rapidly accelerating to cover a broad range of cannabis-related consumer products (e.g. CBD-infused drinks, food, skin care) and developing a market in health as it continues to get legalised

Predicted US market growth of CBD-infused drinks industry  
Market value 2018 to 2023 (USD millions)



Source: Zentih Global; Statista; Business News AU

The Future of Food | The trends that are shaping the industry

\$1.4  
Billion USD

The CBD-infused drinks industry in the US alone is estimated to be worth \$1.4 billion by 2023, and makes for one of the most popular cannabis-related products on the market



Cannabis-infused drinks are further making their way to Australia, with companies such as Hemp Oz offering Hemp-infused spring water, and Melbourne-based The Cannabis Company offering its cannabis-infused alcohol, the Myrcene Hemp Gin



Australia's industry leader Cann Group is beginning to branch out into CBD-related pet products, and building presence in New Zealand ahead of its 2020 cannabis referendum



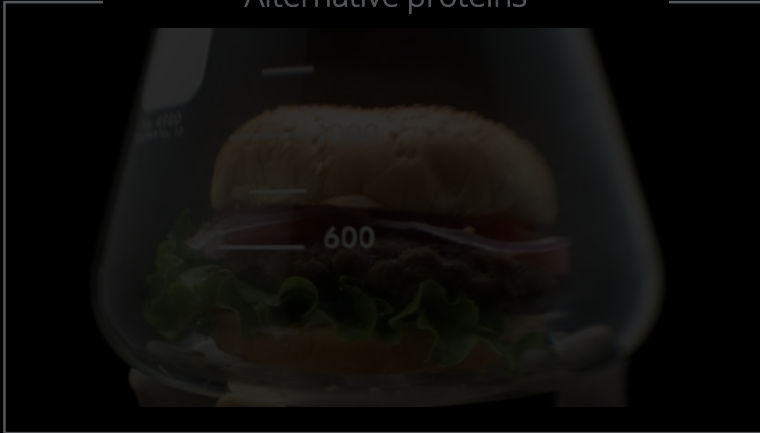
# Australia's Top 10 **cannabis** companies – market cap of \$1.8 billion AUD

Company	Head office	Listing Date	Market Cap	Description
Elixinol Global	Sydney	01/2018	\$508M	Distributor of Hemp products, joined forces with Hemp Foods Australia
Cann Group	Melbourne	05/2017	\$263M	40 crops at two undisclosed locations around Melb. Supplied to pharma manufacturing partner IDT Australia
Althea	Melbourne	09/2018	\$212M	This company puts education about the benefits of medical marijuana at the forefront and is backed by the support of a medical science liaison team. Althea imports finished product from Canada
Botanix Pharmaceuticals	Perth	07/2016	\$131M	Botanix creates cannabinoid based skin-care products to treat various skin health care concerns such as dermatitis, eczema and psoriasis with an end goal of achieving FDA approval.
Cann Global	Sydney	07/2018	\$111M	Cann Global transformed from a boutique mining company into a medicinal cannabis business buying out a majority stake in Medical Cannabis Limited.
AusCann Group	Perth	02/2017	\$118.87M	Largely focused on manufacturing and supplying quality medical cannabis products to be used in clinical research
Medlab Clinical	Sydney	07/2015	\$74.91M	Medlab produces a proprietary spray delivery system to ease pain suffered by cancer patients. Teaming up with the Canadian company Pharma science, this partnership will see the Medlab present themselves in the US and Canadian markets faster.
Creso Pharma	Sydney	10/2016	\$70M	Creso Pharma recently had an \$122M script takeover from Canada's CieloPharma, the parent company of Colombia's largest cannabis grower. They have a 24,000sqft indoor production facility in Canada.
MGC Pharmaceuticals	Perth	02/2016	\$63.07M	This company develops technology which could transport pharmaceuticals directly into the brain. MGC works with medical Drs across three tenets- dermatological, botanic & innovation.
THC Global	Sydney	04/2017	\$59.96M	Develops medical cannabis and manufactures and distributes hydroponics equipment including materials and nutrients. THC operates out of QLD and is already importing

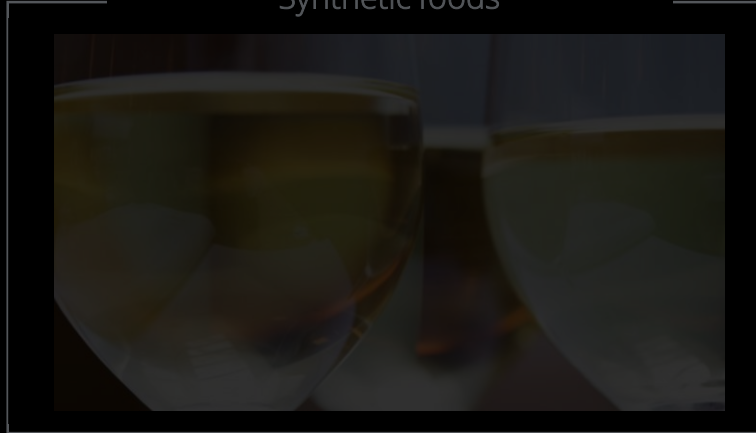
Source: Business News AU

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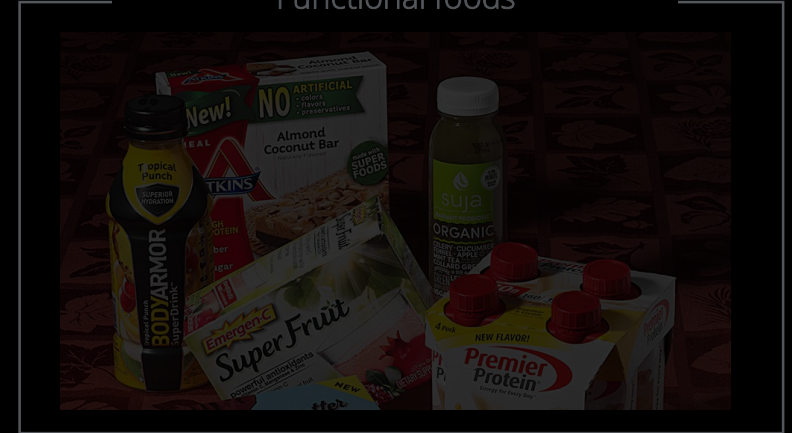
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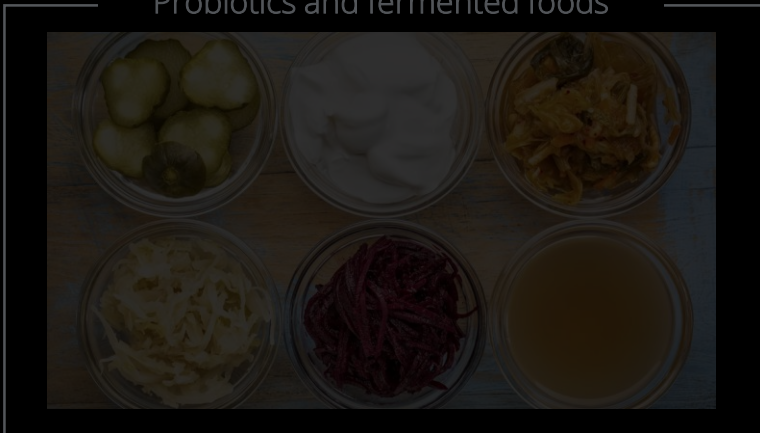
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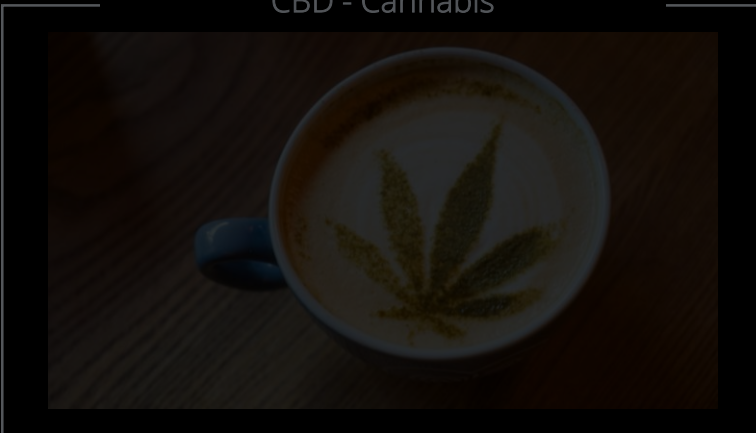
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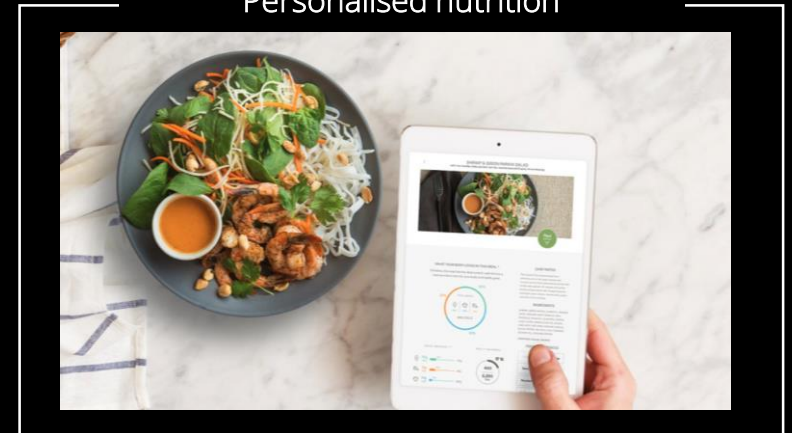
Probiotics and fermented foods



CBD - Cannabis



Personalised nutrition



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Personalised nutrition is surpassing the one-size-fits-all approach, with recommendations now being hyper customisable based on genetics data derived from saliva, blood and stool samples

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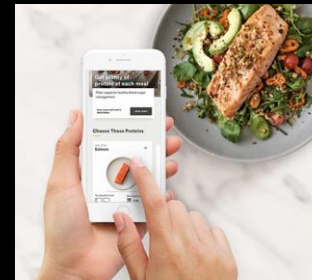
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\$11.5  
Billion USD

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The global personalised nutrition market is estimated to be \$11.5 billion USD by 2025

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Viome's acquisition of Campbell Soup's Habit combines microbiome analysis expertise with Habit's robust consumer behaviour insights based on individual biology, metabolism and personal goals

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100,000  
Users

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The Nestlé Wellness Ambassador is a personalised nutrition program where AI recommends products based on individual customer's DNA, blood test results and photos of their food, and currently has ~100,000 users in Japan

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## AU Example – MyDNA



MyDNA is an Australian **personalised genomics** company that helps people understand the secrets of their DNA and what to do with that knowledge. Their vision is to be the world's most trusted provider of personalised, actionable, genetic information

They use a simple **at-home-cheek-swab** revealing genetic insights to power your plans – fat burning, fat storage, power, endurance, stamina, injury risk and more

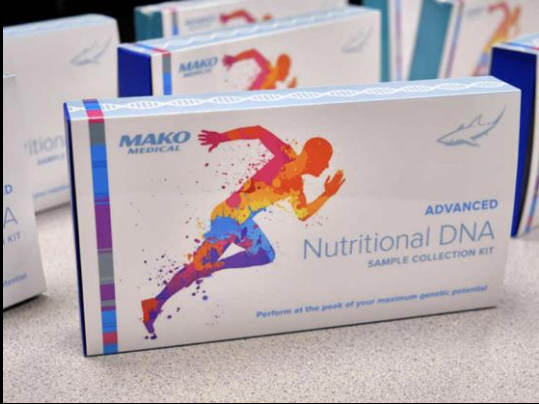
MyDNA develops **customised DNA Fitness plan or personalised Skin Care Plan** outlining Topical Skin Care, Lifestyle, Fitness goals, Nutritional and Oral Skin Care recommendations to help turn your DNA insights into action

Ongoing self-discovery and support with regular new DNA Insights  
**Goal tracking, shopping list and inspirational articles**

The myDNA Life app available in the Apple App Store and Google Play Store

## US Example – MakoDNA

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MakoDNA ships a kit to a consumer. A **swab** is then used to collect saliva. The sample is shipped back to Mako, where the DNA is analysed. The identified genetic variations are then **fed into the algorithm-generating** pipeline

A nutrigenetic report becomes available online (patient/consumer portal), which offers the newly defined nutritional targets. The same data is also fed to the meal plan generator. At the end of this process, the client is offered a **nutrigenetic report and a customisable meal plan**

This allows not only for the optimisation of human performance (in areas such as speed, muscular strength, endurance, and mental focus) through nutrition but also to identify the genetically related potential of an individual for physical performance

MakoDNA is available **online and in pharmacies** across the US, as well as **gyms, colleges, universities** and **local medical providers**



**Read more of our Future of Food Insights**

<https://www2.deloitte.com/au/futureoffood>



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