Consumer views on plant-based foods: Australian sample

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CONSUMER VIEWS *on* PLANT-BASED FOODS

Australian Sample

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INTRODUCTION

There is abundant evidence demonstrating the harmful impacts of animal agriculture on planetary health (Erb et al., 2016; Clark et al., 2020; Romanello et al., 2022). At the same time, plant-forward diets have well-established benefits for both environmental sustainability and human health (Tilman & Clark, 2014; Willett et al., 2019; Springmann et al., 2021). There is thus a critical role for both producers and consumers in shifting diets to ensure a healthy and sustainable food future (Poore & Nemecek, 2018).

With this in mind, the current study explores consumers' views on plant-based foods and identifies the main factors that support or inhibit them to eat plant-based meals at home or when dining out. The study was led by Dr Carla Riverola (Griffith University), in partnership with *Nourish plant-based living* and with the collaboration of Dr Matthew Ruby (La Trobe University), and A/Prof Stephen Harrington and Dr Ozgur Dedehayir (Queensland University of Technology).

In this report, we start with a synopsis of the survey participants' socio-demographic characteristics; we then examine changes in participants' meat consumption over the year prior to the survey; next, we explore consumers' plant-based food choices when eating at home and dining out; and finally, we summarize their plant-based food preferences, discovery channels and uptake.

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I. SAMPLE OVERVIEW

A total of 3,898 responses were collected between December 2021 and March 2022. After removing incomplete and invalid answers, and participants from New Zealand, the study comprised 3,016 Australian consumers. Survey participants included individuals from the eight Australian states/territories, with their area of residence distributed as follows: suburban (42.4%), urban (32.4%), regional (18.4%), and rural (6.8%).

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Participants of the study were aged between 18 and 84, with an average age of 42.5. There was a large proportion of female respondents (80.8% of participants identified as female). Additionally, the distribution of the participants' highest level of formal education was as follows: middle school – Year 10 (4.9%), high school – Year 12 (13.4%), TAFE (28.1%), bachelor's degree (33.3%), and postgraduate degree (18.8%). This shows the survey had a large participation from non-school qualified individuals compared to the Australian Education and Work distribution (Australian Bureau of Statistics, 2022).

Dietary patterns

Study participants self-identify as following a range of dietary patterns. Omnivorous, pescatarian, reducetarian, flexitarian, vegetarian and vegan/completely plant-based were all represented. Poultry was identified as the most frequently consumed meat product among the sample. Dairy and eggs are also consumed frequently. Regarding plant-based protein, legumes are the most frequently consumed, followed by traditional plant-based alternatives such as tofu, tempeh, seitan, and veggie patties.

II. CHANGES IN MEAT CONSUMPTION

In total, 35.5% of the participants claimed to have changed their meat consumption over the previous 12 months: of these, 32.2% reported reducing their meat consumption, while 3.3% reported increasing it (see Fig. 1).

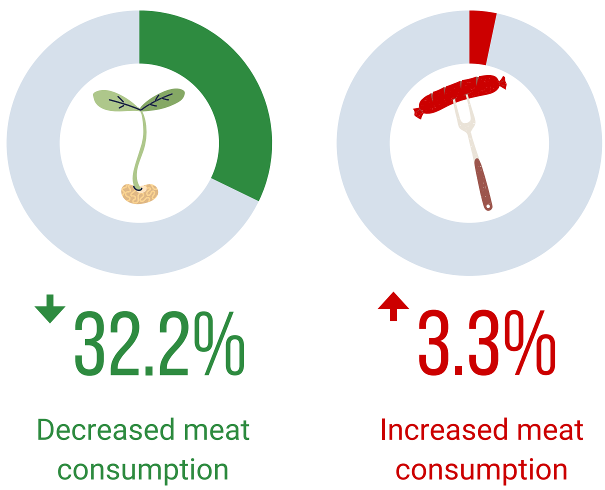

Figure 1. Reported changes in meat consumption over the previous 12 months (n=3,016)

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Reasons for changes

Health considerations were identified as the most common reason for a change in meat consumption, whether increased or decreased (see Fig. 2).

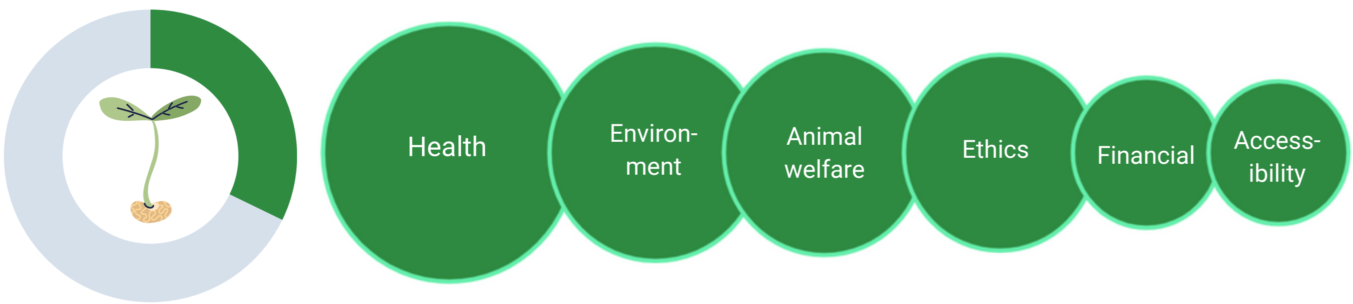
The prevalence of health as a motivation for decreasing meat consumption may reflect a growing awareness of the health risks of certain animal products, in particular red and processed meats, which have been classified by the World Health Organization's International Agency for Research on Cancer as probably carcinogenic to humans (Group 2A) and carcinogenic to humans (Group 1) respectively (Bouvard et al., 2015).

While a far smaller percentage of the sample reported having increased their meat consumption, health considerations were also the most common reason for doing so. This highlights the importance of following qualified guidance to ensure nutritional needs are met, a recommendation that applies across all dietary patterns (Willett & Stampfer, 2001).

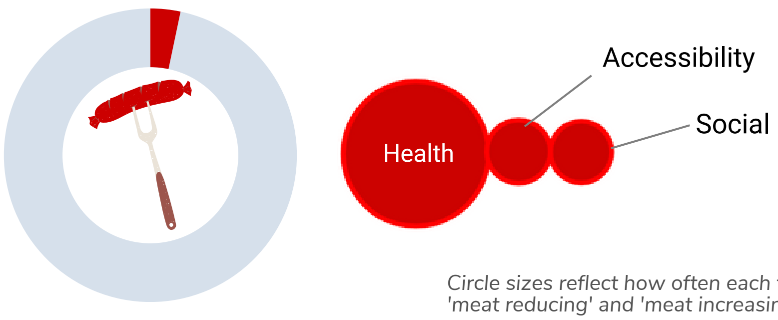
After health, the most commonly cited reasons for reducing meat consumption were environmental, animal welfare, and ethical concerns. This is consistent with increasing public awareness of the environmental footprint of animal agriculture (Smith, 2022) and questions around the legitimacy of treating animals as commodities (Singer, 1990; Joy, 2011).

Figure 2. Most common reasons cited for decreasing or increasing meat consumption
Based on multiple-choice responses in which participants identified the three most relevant answers

Reasons for decreasing (n=971)



Reasons for increasing (n=100)



Circle sizes reflect how often each factor was cited in multiple choice questions given to the 'meat reducing' and 'meat increasing' sub-samples.

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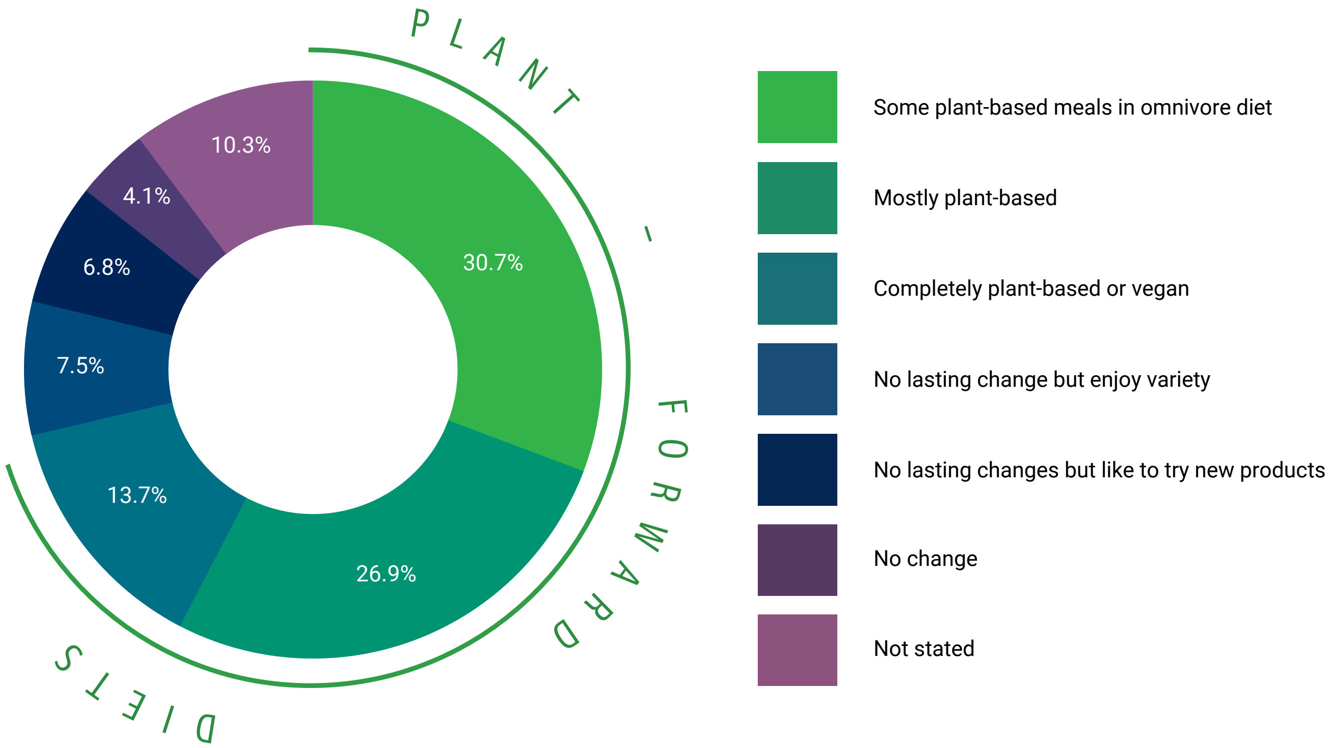
Besides health, participants who had increased their meat consumption in the past year reported other key barriers to the continuity of following a plant-forward diet, including accessibility of plant-based products and social/peer influence. These factors will be discussed in more detail in later section 3 (Consumer behaviour) which examines the drivers and barriers to eating plant-based meals both at home and when dining out.

Dietary aspirations

Amongst the participants who had changed their diet in the last 12 months, a majority indicated that they aspire to follow **plant-forward diets**. This classification includes participants who aspire to have some plant-based meals in an omnivorous diet, those who are interested in following a mostly plant-based diet, and those who aspire to follow a completely plant-based diet. Of the remaining participants, 14.3% are interested in trying new products and/or enjoy variety in their diet. (Fig. 3.)

Figure 3. Dietary aspirations of those who reported having changed their diet in the previous 12 months



These findings indicate a widespread interest in and openness to plant-forward diets amongst Australian consumers. Additionally, we see that the food industry (manufacturers and food service providers) has a key role in attracting a broader range of consumers to adopt plant-based meals by developing appealing and exciting options to attract curious consumers.

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III. CONSUMER BEHAVIOUR

The study sought to explore participants' behaviours when eating at home and when eating out. In both contexts, we enquired into the extent to which they choose to eat plant-based meals, including their motivations for and barriers to doing so (Fig. 4).

Plant-based meals at home

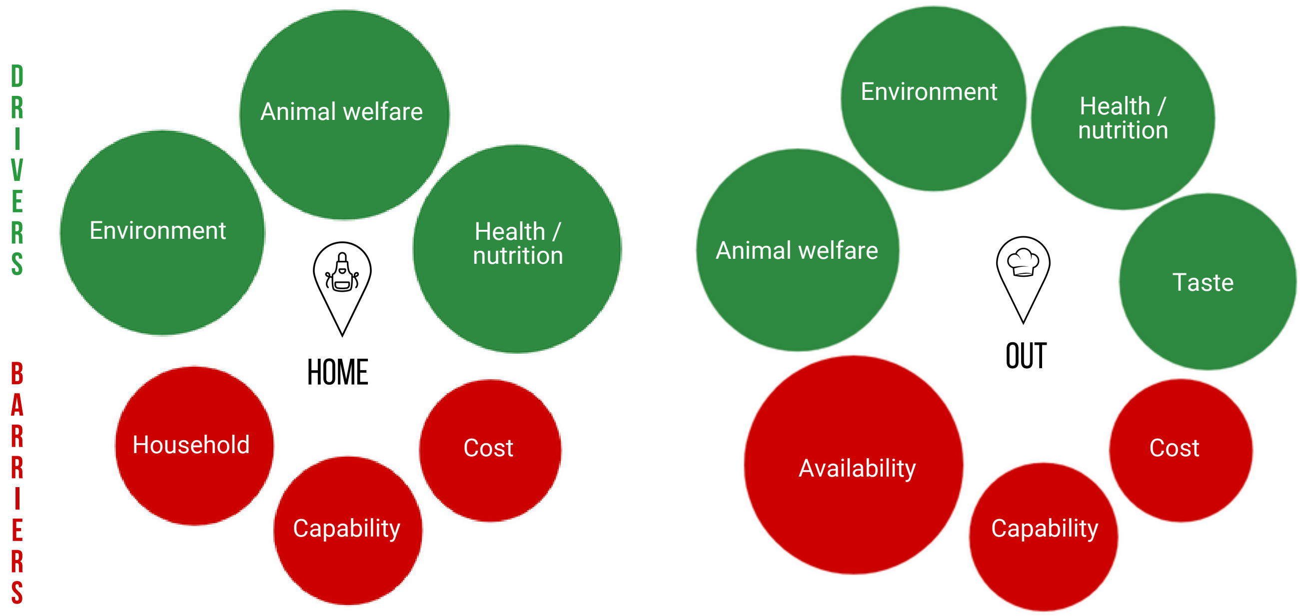
90.7% of our survey participants indicated that they frequently eat home-cooked meals, while 84.6% indicated that they occasionally get takeaway meals.

Participants most frequently purchase their plant-based foods in the major supermarkets, although they occasionally purchase products in independent stores, specialist stores, and markets.

The main reasons for choosing to eat plant-based foods when eating at home were concerns about **animal welfare**, the **environmental** impact of food products, and the participants' desire to eat in a **nutritious** manner. This is consistent with their motives for reducing meat consumption.

By contrast, factors influencing the decision not to eat plant-based meals at home were primarily: **household** members ("People in my household will not eat plant-based meals"), followed by the participants' **capability** to prepare plant-based meals ("I don't know how to prepare appealing plant-based meals"), and **cost** ("Plant-based foods are too expensive compared with animal-based foods").

Figure 4. Drivers and barriers to choosing plant-based foods at home and when eating out
Based on multiple-choice responses in which participants identified the three most relevant drivers and barriers



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Plant-based meals out

In the eating out context, we began by asking about the overarching factors that influence participants' choice of venue. Many participants indicated that they choose a venue that offers specific dishes that they like. The price of menu items, the atmosphere of the venue, and a convenient location also emerged as important factors when choosing where to eat. Additionally, some participants stated that the variety of plant-based dishes on the menu also influences their decision.

The main reasons for choosing to eat plant-based foods when eating out are consistent with participants' motives to reduce meat, with the primary drivers being concerns about **animal welfare**, the **environmental** impact of food products, and the desire to eat in a **nutritious** manner. Additionally, and in contrast to eating at home behaviours, **taste** also featured as a key motivator for choosing plant-based meals when eating out.

When asked about the barriers to choosing plant-based meals when dining out, the primary reason given by participants was limited **availability** ("There is a limited availability or variety of options in the menu"). This is followed by the customers' **capability** to find suitable options ("Appealing plant-based dishes are difficult to identify on the menu"), and **cost** considerations.

These findings show that taste motivates consumers to choose plant-based meals when dining out; however, limited availability and variety of plant-based options, how these options are presented in the menu and their cost can also dissuade customers from choosing them. This suggests that food service providers are not yet meeting consumer demand for plant-based meals.

IV. PLANT-BASED FOOD PREFERENCES, DISCOVERY AND UPTAKE

Our survey found that most consumers (45.6%) prefer to eat a combination of plant-based foods that do and do not mimic the taste and texture of animal products, while another 32.8% of participants stated that they prefer traditional plant-based foods only.

Channels for product discovery

Most participants indicated that they find information about plant-based diets and discover new products mainly through website articles and **online** sources. Interestingly, 58.6% of participants also reported the role of **stores** and **restaurants** to discover new products, which highlights the key role of food providers (both restaurants and grocery stores) in how new products get popularised. Additionally, these results suggest that food providers are central in the development of healthy and sustainable lifestyles as they play a key role in the innovation and diffusion of plant-based foods.

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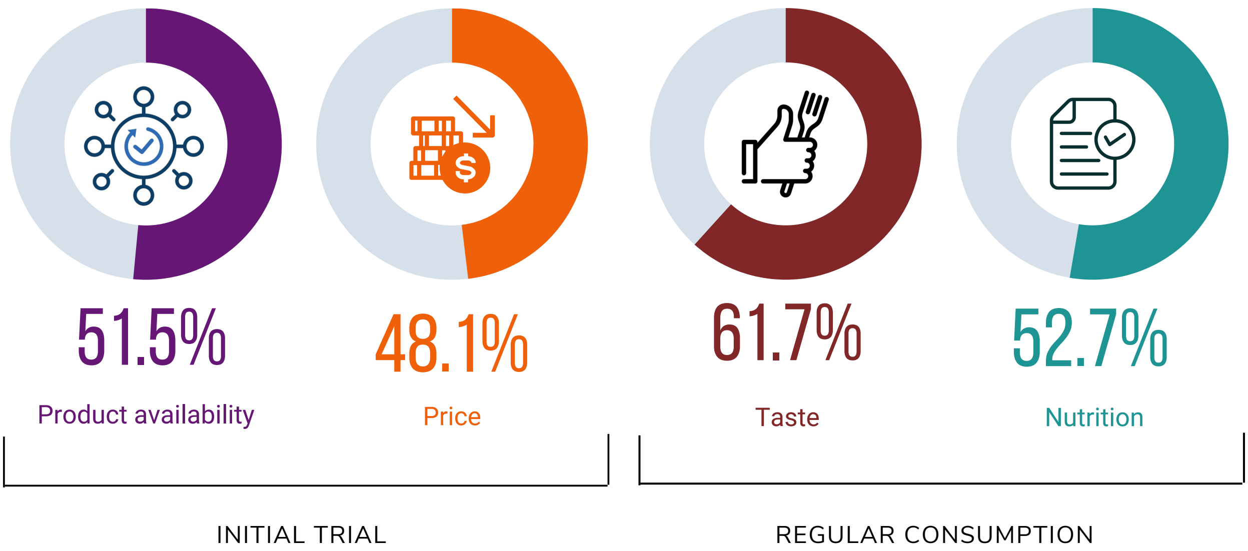
Initial and ongoing uptake of new plant-based products

When participants were asked about what influences them to try a new plant-based food, the two most predominant factors were the product's **availability** and **price**. By contrast, when they were asked what influences them to consume the product on a regular basis, **taste** was at the forefront of their decision, followed by **nutritional value** (Fig. 5).

This shows that when new products are made available through stores and restaurants, taste and nutritional composition are essential considerations to ensure repeat consumer purchases.

Figure 5. Key enablers of initial trial and regular consumption of plant-based products
Based on multiple-choice responses in which participants identified the three most relevant factors



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