

# A Study on the Perception of Plant-Based Protein Products Among Consumers: Survey-Based Analysis

Samyuktha D<sup>1</sup>, Sophiya R<sup>2</sup>, Ezhil J<sup>3</sup>, Aashika M L<sup>4</sup>, Sindhu S<sup>5</sup>

<sup>1,2,3,4</sup> Dept of Food Processing Technology

<sup>5</sup> Assist prof, Dept of Food Processing Technology

<sup>1,2,3,4,5</sup> PSG College of Arts & Science, Coimbatore, India.

**Abstract-** Nowadays, plant-based protein products are in market demand and has gained attention due to their nutritional content, health improvements and sustainability. With the growing demand for plant-based protein, analyzing and understanding consumer awareness and preference is essential for improving food production techniques and support systems. The objective of this study was to investigate consumer awareness, perception and consumption of plant-based protein. An online survey questionnaire was prepared and shared to collect data on demographic information, type of diet, knowledge of plant-based protein, experience, willingness to buy, taste preference and price ranges. The collected data were collected from 161 participants and the findings shows that majority of participants were aware of plant-based protein and has positive perception due to its health benefits and environmental concerns. However, purchasing behaviour was affected by product variety, availability, taste preference and higher price ranges. Around 80.7% of participants showed willingness to increase their consumption of plant-based protein in the future. The study reveals that, providing awareness, ensuring availability and affordability will increase market growth for plant-based protein

**Keywords:** Consumer survey, Plant-based protein, Protein foods, Phytochemical, market study.

## I. INTRODUCTION

Plant-based proteins are vegan foods which provide amino acids that are absorbed into our body and helps treating different diseases. The proteins which are derived from the plant-based foods are high in carbohydrates, polyunsaturated fatty acids, fibre and oligosaccharides. Hence, they help in reducing problems like type II diabetes mellitus, low density lipoprotein cholesterol, obesity, heart diseases, etc. There are various sources of plant-based protein pseudocereals (quinoa, buckwheat), legumes (soybean, pea, faba bean, chickpea, lupin, and cowpea), cereals (rice, wheat, millet, sorghum, barley, maize), seeds (chia, flaxseed, sesame, sunflower, pumpkin) nuts and almonds which are used widely and incorporated in many food products. (Langyan et al, 2022).

Even there are a lot of benefits, a study showed that the plant-based proteins don't contain specific essential amino acids and has lower digestion resulting in weak synthetic response of muscle protein in comparison to animal protein foods. (Vleit et al, 2015). They are mostly available in the form of powder and come in different flavours like chocolate, vanilla, coffee, hazelnut, etc and are sourced from mainly soybean, peanut, peas, etc. There are also plant based analogues which are rich in protein and serve as an animal meat substitute. They also come as plant-based protein supplement in various forms like powder-based formulation, liquid based formulation, tablet and capsule based formulation by various processing techniques like mechanical (High pressure processing, Pulsed electric field, etc), chemical and enzymatic modification techniques (Sharma et al, 2025). The plant-based protein market around the world has reached USD 16.9 Billion in 2024 and may reach USD 29.9 Billion in 2033, showing growth rate of 6.55%. The increase in the trend of plant-based protein nowadays is because of the consumers searching for alternatives for animal-based protein. This trend is also influenced by the health benefits of plant-based foods and issues about the animal production and the effect they have on our nature. Consumers also have problems like high fat content in meat, allergy from animal-based protein and lactose (Aimutis, 2022).

Protein which is a trend going is an important nutritional or functional ingredient and from other research we have gained information that protein has positive consumer perception and protein when combined with plant based has even more positive perception. (Jessica Aschemann-Witzel et al, 2019). They not only contribute essential amino acids, they also contribute up to 90% fewer greenhouse gas emissions and use 75% less water compared to red meat protein. (Shreya P. Sarathy et al, 2025). While there are a lot of information and articles on plant-based protein, the actual perception of the general public on this is complex. Thus, a survey was conducted to know their opinion, knowledge and concerns on plant-based protein.

## II. RESEARCH METHODOLOGY

This exploratory cross-sectional study employed a survey-based research design to examine the awareness and perception of plant-based protein among consumers. A Google form was created with 20 questions and distributed through various online platforms to perceive the knowledge of participants on plant-based protein products among consumers. The participants were from different age groups, occupations, and residential backgrounds (urban and rural) to understand varied consumer perception on plant-based protein products. Data collection was carried out over a period of three months, from December 2025 to February 2026, using the well-designed questionnaire administered through Google Forms. The questionnaire consisted of 20 carefully designed questions in order to examine the knowledge, awareness and perceptions of participants on plant-based protein products. A total of 161 responses were collected during the study period.

The questionnaire was divided into two main sections. The first part of the questionnaire was about Demographic information of the participants, such as age, gender, designation and area of residence (urban/rural), which helped in understanding the socio-demographic characteristics of the participants. The second part contains questions focused on evaluating participant's knowledge and perception on plant-based protein diet and products, including their dietary pattern, familiarity with plant-based protein sources, purchasing habits, flavour expectations and perspectives on plant-based protein products.

## III. RESULT AND DISCUSSION

### A. Demographic profile

The survey was carried out using a well-designed questionnaire through google forms, which included 161 respondents to assess the perception of plant-based protein. Among 161 respondents 64 per cent were females and 36 per cent were males. A majority (73.3%) of the participants belong to the 18-24 age group, followed by the 25-34 age group (12.4%) and then 6.8% in the age group of 5-44 and 7.5 per cent in the age group of 45 and above. We conducted this study in both rural and urban area to understand a wide range of perception of plant-based protein from individuals, where 61.5 per cent of respondents were from urban and 38.5 per cent were from rural areas. By considering the dietary patterns, 44.1 per cent of participants were flexitarians (flexible with both vegetarian and non-vegetarian), 40.4 per cent were non-vegetarians and 14.3 per cent were vegetarians.

### B. Dietary patterns of the participants

The data were obtained from a total of 161 participants and analysed with the help of statistical tools to describe the results in percentage form. The analysis of dietary patterns of participants revealed that 44.7 per cent were flexitarians (flexible with both vegetarian and non-vegetarian diet), 40.4 per cent were non-vegetarians, and 14.9 per cent were vegetarians. The results suggest that the majority of participants follow a flexitarian dietary pattern, which indicates a balanced consumption of both plant-based and animal-based food products (Figure 1).

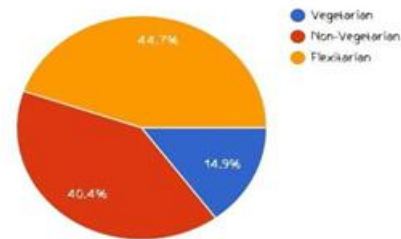


Figure 1. Dietary patterns of the participants

### C. Awareness of plant-based protein products

Among the participants, 73.3 per cent of participants answered that they were familiar with plant-based products, either through seeing them in the market or purchasing them, whereas 26.7 per cent had not come across such products. This demonstrates that most of the consumers are aware of plant-based protein products, indicating its market growth. The higher level of familiarity reflects the growing visibility and acceptance of these products in the market. At the same time, the presence of a notable unaware group indicates that awareness is not yet universal. These findings suggest that while plant-based protein products are gaining attention, there is still a need to expand awareness and improve reach among all consumers. The findings indicate that 39.8 per cent of respondents gained awareness through social media, making it the leading source of information. This is followed by 37.3 per cent who became aware through friends and family, indicating the vital role of personal networks and communication in spreading awareness. On other hand, only a small proportion of respondents were influenced by TV advertisements, suggesting limited impact of traditional media. Additionally, 12.4 per cent of respondents had never heard about plant-based protein, highlighting a gap in awareness among a section of the population, while 8.1 per cent reported other sources (Figure 2).

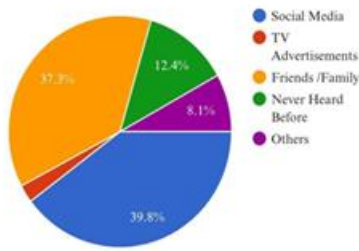


Figure 2. Source of awareness

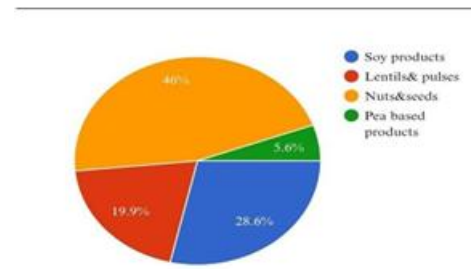


Figure 4. Protein source preference

*D. Flavour expectation of consumers*

The results suggested that 55.3 per cent of participants answered that these products sometimes meet their flavour expectations, followed by 17.4% of them who felt that the products meet their flavour expectations. Around 16.1 per cent rarely got the flavour expectations met, whereas 11.2 per cent are never satisfied with the flavour of the plant-based protein (Figure 3). Previous research also stated taste and sensory characteristics are the essential factors influencing consumer acceptance of plant-based protein products (Perez-Cueto et al., 2022). The result suggests that improving the taste of plant-based protein products is essential to enhance consumer acceptance and satisfaction.

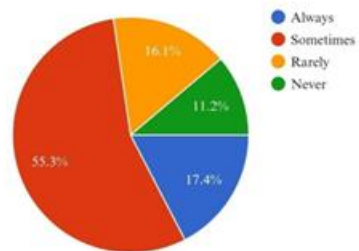


Figure 3. Flavour expectation of consumer

*E. Consumer preference*

The results clearly show that mostly preferred source of plant-based protein is nut and seeds (46%), followed by 28.6 per cent preferring soy products and 19.9 per cent preferring lentils and pulses-based products, while only 5.6 per cent of participants favouring pea-based products. This indicates that consumers prefer traditional and commonly used protein sources over unfamiliar protein sources like pea-based products, possibly due to limited awareness or exposure (Figure 4).

In terms of product type, mostly preferred type is ready-to-cook products (53.4%), showing a clear preference for foods that quick and easy to prepare. This is followed by 26.1 per cent preferred plant protein chocolate, indicating that many consumers are drawn towards tasty and innovative options and 17.4 per cent preferred yogurt, suggesting that familiar and simple-to-consume products are well accepted. Very few preferred other products such as milk, raw and boiled lentils and pulses. This highlights that consumers show interest towards taste-oriented and functional food products (Figure 5).

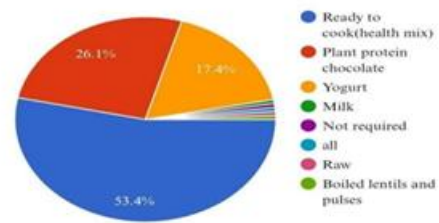


Figure 5. Product-type preference

Overall, the survey indicates that people’s perception on plant-based protein is positive. Previously a similar study was conducted among medical professionals at Rush University Medical Centre, to identify their awareness, attitudes and consumption of plant-based diet (Amanda J, et al, 2017), which similarly showed an increasing interest and acceptance of plant-based protein products among different population groups.

**IV. CONCLUSION**

The study concluded that consumer perception of plant-based protein is generally positive. Young individuals showed greater interest in plant-based protein products due to increasing health awareness. The results indicate that more people are choosing plant-based diets mainly to improve their health, as well as due to environmental concerns, ethical reasons, and changing lifestyle trends. The survey also revealed that plant-based protein consumption is higher among urban populations compared to rural areas, owing to high

awareness and better product availability. In addition, plant-based protein is becoming more important in modern lifestyles because it requires less land, water, and energy compared to animal-based protein sources. This is in line with previous research, which also states that plant-based proteins serve as a sustainable and nutritionally adequate alternative to animal proteins, ensuring dietary requirements while promoting health and environmental benefits (Langyan et al., 2022). In the future, plant-based protein is expected to gain even more popularity as people become more aware of health and environmental sustainability. Further research and product development may improve the taste, availability, and affordability of plant-based protein foods, encouraging wider adoption among different population groups.

their structure, function and relationship: A review,” 2025.

## V. ACKNOWLEDGEMENT

The authors thank all the participants for their valuable responses and acknowledge the guidance and support provided by faculty during this study.

## REFERENCES

- [1] K. Sharma et al., “Dietary plant-based protein supplements: Sources, processing, nutritional value, and health benefits,” 2025.
- [2] S. Langyan et al., “Sustaining protein nutrition through plant-based foods,” 2022.
- [3] W. R. Aimutis, “Plant-based proteins: The good, bad, and ugly,” 2022.
- [4] N. A. van Vliet, N. A. Burd, and L. J. van Loon, “The skeletal muscle anabolic response to plant- versus animal-based protein consumption,” *Journal of Nutrition*, vol. 145, no. 9, 2015.
- [5] A. J. Krause and K. A. Williams, “Understanding and adopting plant-based nutrition: A survey of medical providers,” *American Journal of Lifestyle Medicine*, vol. 13, no. 3, pp. 312–318, 2017.
- [6] F. Michel, C. Hartmann, and M. Siegrist, “Consumers’ associations, perceptions and acceptance of meat and plant-based meat alternatives,” *Food Quality and Preference*, vol. 87, 2021.
- [7] F. J. A. Perez-Cueto et al., “How barriers towards plant-based food consumption differ according to dietary lifestyle,” *International Journal of Gastronomy and Food Science*, vol. 29, 2022.
- [8] J. Aschemann-Witzel et al., “Consumer perception on plant-based protein: The value of source transparency for alternative protein ingredients,” 2019.
- [9] S. P. Sarathy et al., “Plant-based protein: A multi-nutritional sustainable alternative to animal foods and