

“Processed Food and Food Processing Business - The Global and Indian Prospective”

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Abstract

For decades, lifestyle changes have altered global food habits. Liberalisation, dual family income, nuclear family, contemporary kitchen, time restrictions, and other variables may explain this trend. Processed food is replacing fresh agri-products for people. This has created a new business opportunity with social uplift. Food intake data show changes. This research examines central Indian food processing, particularly in Chhattisgarh. Highlight food processing methods that simplify consumption.

Introduction

For decades, lifestyle has changed Indian culinary habits. Liberalization, dual family income, nuclear family, modern kitchen, time restrictions, etc. may explain this development. Indian cuisine differs from north to south and east to west. Due to daily life strain, people favor clever, simple, and quick cooking over spending a lot of time on it.

People prefer processed foods since spices are hard to make and expensive. Many individuals move for work or school and prefer prepared meals to restaurants. Due to time constraints, most dual-income families desire to cook less. Weekends are for family time, while weekdays are for work and processed food. Flavors and dish availability also matter. All of the aforementioned characteristics drive processed food, which gives them variety and flavor. India is attracting several global and local processed food manufacturers. People are reading more and using more communication technologies. Being more aware of what people eat, depending on health and resources. India has more cardiac and diabetes patients due to lifestyle and diet strain. Health-conscious persons are usually well-educated. Women are weight-conscious and choose items based on calories, ingredients, and product approval certifications. Housewives usually make family meal choices. Their family now buys high-fiber, low-calorie, and nutritious food. Decisions are also influenced by product ads. Indian

obesity rates are rising, and although consumers are becoming more mindful of what they eat, they are also influenced by advertising and packaging.

Food

Humans require air, water, food, clothing, and shelter. Food is essential for bodily function and growth. Food is any material made of carbohydrates, water, fats, proteins, vitamins, and minerals that animals, including humans, consume or drink for nourishment or enjoyment. Food and food processing 2010 (Introduction). Food is mostly protein, carbohydrate, and fat that an organism uses for growth, repair, and energy. (www.britannica.com). Our bodies need carbs, proteins, lipids, enzymes, vitamins, and minerals from food. We cannot produce all these nutrients. Thus, only food provides necessary nutrition. If we don't receive enough nutrients, we may become sick. So a balanced diet with the proper amounts of carbohydrate, protein, fat, dietary fibre, vitamins, and minerals is suggested. Plants and animals are food.

Food science is a multidisciplinary field that combines various scientific disciplines such as biology, chemistry, physics, engineering, and nutrition to study the composition, processing, safety, and quality of food. It involves understanding the physical, chemical, and biological properties of food and applying that knowledge to improve food production, preservation, and consumption.

Key areas of focus in food science include: Food Composition, Food Processing, Food Safety and Quality Assurance, Food Preservation and Packaging, Sensory Evaluation, Food Product Development, Food Engineering, Food Microbiology, Food Chemistry, Nutritional Science.

Processed Food

Convenience food is processed food. Anderson 1995. Ready-to-eat and ready-to-cook processed foods are common. Convenience Foods (2009). Processed meals "make them more appealing to the consumer. "Food Fatty Acids and Health (2013). Convenience (processed) and quick meals are related since they save time in food preparation. Both costs more and take less time than home cooking. Ensminger (1994).

Processed food refers to any food item that has undergone a deliberate change in its natural state through various methods such as cooking, preserving, adding ingredients, or modifying its texture. The purpose of processing food is often to improve its shelf life, enhance flavor,

increase convenience, or make it ready-to-eat.

Processed foods can range from minimally processed items like washed and packaged fruits and vegetables to highly processed products like canned foods, frozen meals, snacks, and sugary beverages. Some examples of processing techniques include cooking, freezing, canning, drying, fermenting, milling, and adding preservatives, sweeteners, or flavor enhancers.

It's important to note that not all processed foods are unhealthy. Processing can have both positive and negative effects on the nutritional value of food. While some processing methods may preserve or even enhance the nutrient content of certain foods, others can lead to nutrient loss or the addition of unhealthy additives like excessive salt, sugar, unhealthy fats, or artificial ingredients.

Consumers should be mindful of the types and amounts of processed foods they consume. Here are a few considerations:

1. Read food labels: Check the ingredient list and nutritional information on packaged foods to understand what they contain. Look for products with simple, recognizable ingredients and avoid those with excessive amounts of added sugars, sodium, and unhealthy fats.

2. Choose minimally processed options: Opt for whole, fresh foods or minimally processed alternatives when possible. For example, select fresh fruits instead of canned fruits packed in syrup, or whole grains instead of refined grains.

3. Balance processed foods with whole foods: Incorporate a variety of whole foods like fruits, vegetables, whole grains, lean proteins, and healthy fats into your diet. Limit the consumption of highly processed foods that are often high in calories, added sugars, and unhealthy fats.

4. Cook from scratch: Preparing meals at home using fresh ingredients allows you to have control over the ingredients and methods used in the cooking process. This helps reduce reliance on heavily processed foods.

5. Be mindful of portion sizes: Even with healthier processed foods, it's important to consume them in moderation and maintain an overall balanced diet.

Finished Food - Foods with little processing go through washing, peeling, slicing, juicing, freezing, drying, fermenting, and pasteurization. Foods that have undergone some processing are crushed, refined, and chemically treated. Foods that have undergone extensive processing may be baked, fried, smoked, toasted, puffy, shredded, chemically flavored, colored, and vitamin-sprayed.

Food processing enhances the quality, cleanliness, efficiency, and shelf life of food. the cured. There are food categories for ready-to-eat (RTE) and ready-to-cook (RTC) items.

Ready-To-Eat (RTE) meals - processed meal that is ready to consume. for instance, jam, potato chips, and bread. Foods that are ready to eat don't need further preparation.

Ready-To-Cook (RTC) food requires further preparation before consumption. For instance, fried snacks, papad, masalas, pahas, and cereals and processed grains.

Food Processing

Food processing is the systematic process of turning raw components into edible food or other forms for consumption. Food processing employs clean, harvested crops or killed and butchered animal products to make appealing, marketable, and long-lasting food items. Wikipedia (www.wikipedia.org). Food processing turns raw food into healthy, easy-to-cook, well-cooked and conserved meals. Food processing is used to cook and preserve uncooked food. Food processing companies employ these processes to produce processed and preserved foods for everyday use. Food processing comprises grading, sorting, and packing to extend food shelf life.(www.niir.org)

Prehistoric food processing includes slaughtering, fermenting, drying, salt preservation, and diverse cooking methods such roasting, smoking, steaming, and oven baking.

The military pioneered modern food production in the 19th and 20th centuries. Peter Durand pioneered tinning and canning in 1810 after Nicolas Appert devised a vacuum bottling method to feed French soldiers in 1809. Canned products become a global staple despite their high cost and lead content. In 1862, Louis Pasteur developed pasteurization, which improved food microbiological safety.

In the 20th century, advances in spray drying, juice concentrates, freeze drying, artificial sweeteners, coloring agents, and preservatives like sodium benzoate, and a rise in consumer social order in developed countries (including the US) led to food processing growth. Late 20th-century items included dry quick soups, reconstituted fruits and juices, and self-cooking dinners.

The food processing sector is highly fragmented industry, it widely comprises of the following sub- segments: Fruits and Vegetables processing, Milk processing, Alcoholic Beverages processing, Meat and Poultry processing, Sea Food processing, Grain and Cereals Processing, Packaged Food, Convenience Food, Packaged Drinks.

Food processing refers to the transformation of raw agricultural materials into food products through various physical, chemical, and biological methods. The purpose of food processing is to make food safe, extend its shelf life, enhance its taste, texture, and nutritional value, and provide convenience to consumers.

There are several common methods and techniques used in food processing: Cleaning and Sorting, Cutting and Slicing, Heating and Cooking, Preservation, Fermentation, Milling and Grinding, Mixing and Blending, Packaging, Additives and Ingredients, Quality Control.

Food processing plays a vital role in meeting the demands of a growing population by making food more accessible, convenient, and safe. However, it is important for food processors to prioritize food safety, maintain nutritional integrity, and meet consumer preferences for minimally processed or healthy food options.

Pros of food processing - Manufacturing large quantities of food is less expensive than producing meals from raw ingredients. So, producers and suppliers of processed foods may reap significant benefits. Food products satisfy a variety of convenience needs. Processing food increases consistency, preserves, streamlines marketing and distribution, and eliminates contaminants. Many foods are seasonal because of processing. Large distances may be covered by processed foods. removes dangerous and spoilage bacteria from a variety of foods. Modern produced food is advantageous for those with diabetes, allergies, and other dietary limitations. Food processing enhances nutrients. Fresh meals are more prone to spoil

than processed foods, which may also be carried further.

Food processing offers several benefits that contribute to the availability, safety, convenience, and variety of food.

While food processing offers numerous benefits, it is essential to strike a balance and ensure that processed foods maintain their nutritional value, minimize the use of additives, and meet consumer demands for healthier options. Consumers should also make informed choices by reading labels, understanding ingredient lists, and selecting minimally processed or whole food options whenever possible.

Limits on Food Processing - Fresh food that has been cleaned, chopped, and given other simple kitchen preparations often has more naturally occurring vitamins, minerals, and fibre than food that has been processed in a factory. Because heat and processing damage many essential minerals, processed food often contains less minerals than fresh food. Processing food lowers nutritional value and creates additional risks. Chemicals used to enhance the texture and add taste to processed meals are either toxic or nutritionally useless. Chemicals and preservatives used in the manufacture of commercial goods may be harmful to human health. Serious health problems are caused by inexpensive chemicals or plants that imitate natural ingredients. When processed foods have more calories than other nutrients, they are said to have "empty calories". Junk food, or processed food that is mass-produced, is often cheap and convenient. Because processed food ingredients are frequently produced in large quantities and distributed widely among value-added food manufacturers, violations of hygiene standards in 'low-level' manufacturing facilities that produce a widely used basic ingredient can have serious repercussions for many final products. Preservatives and flavoring compounds cause cancer.

To mitigate the limitations of food processing, it is important to focus on:

- Minimally processing foods to retain their natural attributes and nutritional value.
- Choosing processing methods that preserve the nutritional content of food.
- Limiting the use of additives, preservatives, and unhealthy ingredients.
- Providing clear and accurate labeling to inform consumers about the processing methods used and the presence of any additives or preservatives.

- Encouraging the development and consumption of whole, unprocessed or minimally processed foods.
- Promoting sustainable and environmentally friendly food processing practices.

By addressing these limits and focusing on responsible food processing practices, it is possible to ensure that processed foods continue to provide benefits while meeting consumer expectations for quality, safety, and nutrition.

The Global Food Processing Market

Sales of food, beverages, and tobacco were \$4,140.3 billion in 2005. Without tobacco, which accounts for 11% of the industry, it was estimated that the global market would reach US\$3660 billion in 2005 and US\$4320 billion in 2010. Processed food markets worldwide are influenced by national economies. Countries with high incomes prefer processed food. Consumption of processed foods increases in developing nations as urbanization and wealth increase. Demand for staple foods and carbohydrates is driven by economic progress and low income in emerging countries.

The market is divided into four major categories based on market maturity and processing level:

- High-tech, organic, and useful foods are sought after in the USA, Japan, and Australia. Eastern Europe prizes excellence and cleanliness.
- Snacks, prepared meals, and processed meat are prioritised in India and Latin America.
- Markets that are the least developed still depend on carbs. LDCs often import food.

(2009) Doloitte

The global food processing market refers to the industry involved in transforming raw agricultural products into processed food products. It encompasses various activities such as cleaning, sorting, cooking, preserving, packaging, and adding value to food products.

The global food processing market has been experiencing steady growth in recent years due to several factors, including:

1. Increasing Population: The growing global population has led to a higher demand for processed and packaged food products. Food processing helps meet the rising food requirements by extending shelf life, improving convenience, and ensuring food safety.

2. Changing Consumer Lifestyles and Preferences: Busy lifestyles, urbanization, and a shift towards convenience-oriented food consumption have increased the demand for processed and ready-to-eat meals. Consumers are seeking convenient and time-saving options without compromising on taste or nutrition.

3. Technological Advancements: Advancements in food processing technologies have improved efficiency, productivity, and product quality. Innovative processing methods, such as high-pressure processing, microwave processing, and advanced packaging techniques, have helped preserve the nutritional value and sensory attributes of processed foods.

4. Increased Focus on Food Safety: Food processing plays a crucial role in ensuring food safety by implementing strict quality control measures and adhering to regulatory standards. Consumers are becoming more aware of food safety issues and are demanding products with higher safety standards.

5. Globalization and Trade: The expansion of international trade and the globalization of food markets have boosted the demand for processed food products. Processed foods can be transported over long distances, allowing consumers to access a wide range of food products from different regions.

6. Demand for Convenience and Ready-to-Eat Foods: The demand for convenience foods, including ready-to-eat meals, snacks, and beverages, has been growing rapidly. Busy lifestyles, dual-income households, and the need for on-the-go food options have fueled the demand for processed food products that require minimal preparation.

7. Increasing Disposable Income: Rising disposable incomes in emerging economies have led to increased spending on processed food products. As consumers have more purchasing power, they are willing to pay for convenient and value-added food products.

The global food processing market is highly competitive and includes both large

multinational corporations and smaller regional players. Major players in the industry engage in product innovation, strategic partnerships, acquisitions, and expansion into new markets to gain a competitive edge. The market is also witnessing trends such as the demand for natural and organic food products, clean label products with minimal additives, and a focus on sustainability and eco-friendly practices.

Food Processing Business - The Indian Scenario

After China, India produces the most fresh and processed foods. India's largest consumer industry is food, which generates \$181 billion in sales and 21% of the country's GDP. By 2015 and 2025, the Indian food market is projected to grow 40%, reaching \$258 billion and \$344 billion, respectively (World of Food India, 2011; Merchant, 2008).

India's economy depends heavily on food processing. The food processing industry in India is supported by the government and is doing successfully. 2011's Food Processing Entrepreneurs' Handbook.

Processing food links business and agriculture. Production, consumption, exports, and growth are all dominated by this sector. With financial reliefs, subsidies, and incentives, the government has prioritised this sector in order to promote commercialization and value-added agriculture in order to decrease waste, generate employment, and increase exports. (www.niir.org)

India's percentage of processed foods is minimal in comparison to wealthy nations. Food that has not been processed makes up around 50% of the diet. Only 18% of its goods are high value. India's food industry had a US\$220 billion year in 2005. The value contributed to the primary processed food was about US\$40 billion. The remaining food is non-processed commodity food. Annual industrial growth is 9–12%. employs 2 million as of 2005 (Dolotte, 2009).

The food processing industry in India has been witnessing significant growth and plays a crucial role in the country's economy. Here is an overview of the Indian scenario in the food processing industry:

1. Market Size and Growth: The food processing industry in India has been growing at a rapid pace. According to the Ministry of Food Processing Industries (MOFPI), the sector attracted over USD 10 billion in foreign direct investment (FDI) between 2014 and 2019. The market is expected to continue expanding, driven by factors such as urbanization, changing consumer preferences, and increasing disposable incomes.

2. Government Initiatives and Policies: The Indian government has taken several initiatives to promote the food processing industry. The MOFPI has implemented schemes and incentives to attract investment, enhance infrastructure, provide skill development programs, and facilitate market access for processed food products. The Pradhan Mantri Kisan Sampada Yojana (PMKSY) is a flagship scheme that aims to develop modern infrastructure and support agro-processing clusters across the country.

3. Agriculture Base: India has a vast agricultural sector, providing a strong foundation for the food processing industry. The country is one of the largest producers of various agricultural commodities, including fruits, vegetables, grains, and spices. This abundant supply of raw materials presents significant opportunities for value addition and processing.

4. Increasing Urbanization and Changing Lifestyles: Rapid urbanization and changing consumer lifestyles have led to an increased demand for processed and convenience food products in India. The rise of working individuals, dual-income households, and a shift towards nuclear families have fueled the need for ready-to-eat meals, packaged snacks, and other convenience-oriented food products.

5. Diverse Food Products: The Indian food processing industry encompasses a wide range of products, including dairy products, processed fruits and vegetables, grains and cereals, beverages, meat and poultry products, bakery and confectionery items, and more. This diversity reflects the rich culinary heritage and regional food preferences in India.

6. Export Potential: The Indian food processing industry has immense export potential. The government has been actively promoting exports of processed food products through initiatives like the Agri Export Policy and the establishment of specialized export zones. Indian food products, such as spices, basmati rice, processed fruits and vegetables, snacks, and dairy products, are increasingly gaining popularity in the international market.

7. Challenges: The Indian food processing industry also faces certain challenges that need to be addressed. These include inadequate infrastructure, fragmented supply chains, limited cold storage and logistics facilities, lack of access to finance, and quality control issues. Additionally, there is a need for greater technology adoption, research and development, and skill development to enhance productivity and competitiveness.

Conclusion

The key is to strike a balance between convenience and the nutritional quality of your diet. Prioritize whole, minimally processed foods whenever possible while being mindful of the choices you make when it comes to processed foods.

Food enterprises are often unorganized and tiny. Food is processed to prevent, reduce, and eliminate infestation by microbes, insects, or other vermin, to stop or slow deteriorative chemical or biochemical reactions, to maintain and/or improve nutritional properties, to increase storage stability or shelf life, to make food more palatable and attractive, and to make foods for special groups of people.

The global food processing market is expected to continue growing, driven by population growth, changing consumer preferences, technological advancements, and increased emphasis on food safety and convenience.

The Indian food processing industry offers significant opportunities for growth and investment. With government support, a strong agricultural base, changing consumer dynamics, and export potential, the sector is poised for continued expansion and innovation.

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