



# INTERNATIONAL RESEARCH JOURNAL ON ADVANCED SCIENCE HUB

e-ISSN : 2582 - 4376  
Open Access

## RSP SCIENCE HUB

(The Hub of Research Ideas)  
Available online at www.rspsciencehub.com

**Special Issue of First International Conference on Social Work, Science & Technology (ICSST 2021)**

### Food Packaging in India: An Overview

Dr. Chitra B T<sup>1</sup>, Karthik A<sup>2</sup>, Nandini K Sanikop<sup>3</sup>

<sup>1</sup>Assistant Professor, Department of Industrial Engineering & Management, R.V.College of Engineering Bengaluru, India.

<sup>2</sup> Department of Aerospace Engineering, R.V.College of Engineering Bengaluru, India.

<sup>3</sup> Department of Aerospace Engineering, R.V.College of Engineering Bengaluru, India.

chitrabt@rvce.edu.in<sup>1</sup>, karthika.ae18@rvce.edu.in<sup>2</sup>, nandinikirans.ae18@rvce.edu.in<sup>3</sup>

#### Abstract

*Packaging, today, is one of the most important element in the food network, guaranteeing food safety and maintenance of freshness among food products from the factories to the plates. There has been tremendous development in technology in the food sector which offers high quality products, increases the shelf life and also therefore safeguards the food security. Our motivation and the main objective of this review paper is to bring out the fact of how food packaging plays a role in assuring the quality and standards of food and to showcase how intellectual property rights can be used in protecting food packaging. The review paper also focuses on some of the new packaging technologies that have transformed the food sector to meet today's needs and the impact of food packaging on our environment. Further, this research paper also highlights the regulations governing the packaging and judicial decision.*

**Keywords: Food Packaging industry, Food products, Intellectual property, Consumer protection.**

#### 1. Introduction

Can you think of any food product that has reached you without a packet or a container? Practically it is a NO. It could be the smallest possible grain from the farm or just a bottle of water. Food packaging is one the largest industries in the globe today and the industry has its own set of rules, provisions that need to be followed with its own advantages and disadvantages and sometimes harms the environment too. In simple words, this industry has evolved from a paper-generation to intelligent techniques in the present days and is rapidly growing at a high pace. Food packaging is one of the most essential procedures in the food business since it helps to keep food items fresh during storage, shipping, and distribution. Food packaging is done to protect food components from different direct and indirect pollutants, as well as to prevent the food from deterioration,

spillage, and other issues. It also helps to keep food fresh and safe throughout the supply chain. There are different techniques used in food packaging like, as we know oxygen in the air causes to shorten the shelf life of food through a process termed as oxidation. vacuum packing or inert environment packaging can help extend the shelf life of food. various foods are packaged at low pressure or with an inert gas to absorb oxygen to avoid this reaction. along with that bag, bottles, cans, tins, boxes, etc are used for food packaging. When it comes to a sustainable food system, the main objective is to keep up the quality and standard of food, improving the safety conditions of the food that will later be consumed and to reduce the waste that is produced, especially after postharvest which is immensely prevalent and a major concern. The relevance of packaging in raising consumer knowledge of environmental concerns is emphasised, as is the acceptance of

concepts such as the use of recyclable, ecologically friendly packaging materials by food firms. A well-designed packaging grabs the consumer's attention and serves as an effective way to communicate as well as a tool for product distinction. To meet customer expectations for healthy and safer food, the food sector is constantly expanding. When "cooking is an art" IPR protection should be provided to safeguard it. IPR in the food sector encompasses everything from materials and recipes to company marketing and branding. [1-6].

### 1.1 History of food packaging

Initially, around 7000 BC, packaging started in Egypt with glass which was used to store food and liquid. In second century BC, China developed flexible packaging using paper to wrap food which was made by treating mulberry bark. From 500 AD to 1500 AD, wooden barrels were employed in ships to move water and food. In 1310, paper making was started in the British empire. In the industrial revolution 1760 to 1840 the rise of the product demand expedited the necessity for quality packaging. In 1810, Peter Durand obtained a patent for iron cans that were coated with the help of tin instead of glass to preserve the quality of food which is one of the most used packaging materials today. In 1817, Sir Malcolm Thornhill designed the cardboard box although cardboard was initially invented by the Chinese. In 1844, first paper bags for commercial purpose were made in Bristol, England and following in 1852, paper bag making machine was invented. Robert Gair, owner of a paper bag company accidentally invented the first carton. Branding, labels and trademarks for packaging were invented. In 1866, trademarks were officially launched by Smith Brothers for their cough drops. The first branded packaging was made by NABISCO an American manufacturer of cookies and snacks in 1890. In 1906, Kellogg brothers invented the cereal box to transport their cereals. Jacques E. Brandenberger, a Swiss Chemist, invented cellophane, a cloth which doesn't absorb liquids in 1908. In 1910, aluminium foil containers entered the market and later the aluminium can in 1959. In 1926, Eckert and Ziegler patented the modern plastics injection moulding machine, which was first to be commercially launched. In 1933 Ralph Wiley discovered polyvinylidene chloride (PVDC) which

was used to pack food post World War II. In 1831, Styrene was first distilled from a balsam tree following in 1933 Germany improved the process as the products were brittle and by 1950, Styrofoam was made available to the world. Between 1940 and 1949 the idea of frozen food packaging was introduced. By 1970, plastic manufacturing industries began to grow tremendously. In 1973, Nathaniel Wyeth, a chemist, obtained the patent on Polyethylene Terephthalate (PET) bottles. In 1980, plastic was used to pack hot foods. In 1999 the Food Standards Act was introduced to the House of Commons that influenced the food packaging industry [7-12].

### 1.2 Objective

This paper focus on the food packaging in general which includes the food packaging in consumers perspective, its importance and their protections. And also, the footprint of food packaging on the environment. The role of Intellectual Property & food packaging regulations has been discussed in this research article too.

### 1.3 Importance of food packaging

The main function of packaging is to preserve and protect the food substance from external sources that would spoil and deteriorate the quality of it. There are different materials used for food packaging, it varies on your preferences as well as the foods you're preserving. Glasses, newspaper, steel, and plastic make up the majority of food packaging. Food packaging is necessary for keeping food safe from contaminants. Food packaging plays a major role in maintaining the shelf life of the product. Food packaging also plays a role in embracing the trademark of the company or the product such that the consumer can identify and differentiate from other products. Food packaging provides the labels through which the consumer can learn about the ingredients, expiry date and the nutritional value.

## 2. Types of Food Packaging

When we mention the kinds of packaging, generally they're classified into three categories: Primary packaging, Secondary packaging and Tertiary packaging.

**2.1.1 Primary packaging:** Primary packaging, is usually referred to as a consumer unit, it is the type of packaging that directly comes in contact with the merchandise hence it's referred as the

consumers unit. When we talk about the aim of primary packaging the first aim is to keep the ultimate product preserved, contained, and protected, especially against contamination.

**2.1.2 Secondary packaging:** When we take the packaging system, the external part of the packaging that will help provide the safety to the main packaging and safeguards the main product, this is usually referred to as the secondary packaging.

**2.1.3 Tertiary packaging:** It is the type of packaging which is also referred to as bulk or transit packing, it is employed to bundle greater numbers of stock keeping units i.e., SKUs for transportation from point A to point B. Products are handled as distribution units during this step. Large and/or heavy cargo could also be transported safely and securely with this type of packing. This type of packaging also helps in storing the product away from any damage during transporting it and handling. Discussing about the types of packaging particularly with respect to food we have following types:

**2.2.1 Aseptic packaging:** Aseptic packaging is comprised of a paper and aluminium blend with a polyethylene covering. It's used to keep goods sterile, such as milk and eggs. Milk-based beverages, as well as liquid eggs.

**2.2.2 Trays:** The majority of this is self-evident. Meats, seeds, and beverages can all be transported on trays.

**2.2.3 Bags:** Bags, like trays, are a frequent food packing option. Bagged snacks and fruit are the most well-known. The food is separated from the environment, namely the air, by "bagging."

**2.2.4 Boxes:** Food products are transported in boxes because they are the most convenient. Metal, corrugated fibreboard and wood are the most popular box materials. Also, Cans, Cartons, Flexible packaging, Pallets and wrappers are the other types of food packaging used.[13-17].

### 3.1 Food Packaging and Environment

The stage where we start encountering the problems with packing food is the design stage. To supply, all the products, packages need a variety of resources such as water petroleum, energy, minerals, wood, textiles and chemicals.

The production process in the designing part will often lead in releasing the greenhouse gases and some particles in the air, also wastewater or sludge

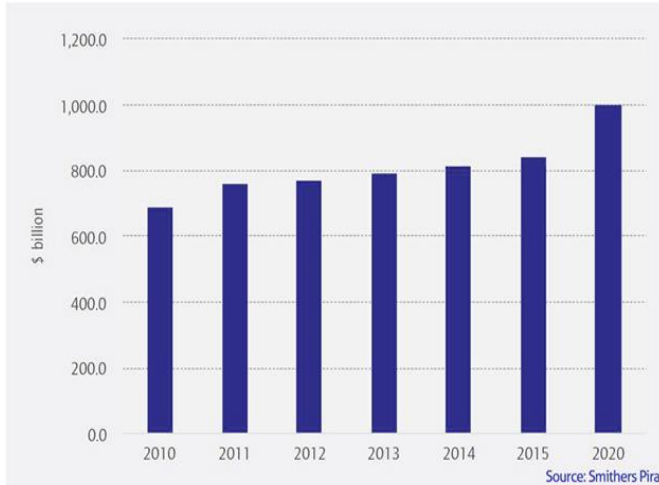
which contains hazardous pollutants. The function of packaging in avoiding and decreasing product waste is often overlooked, but in recent years, its importance in reduction of waste has begun to be acknowledged. Improper disposal of packaging sometimes causes pollution problems. Garbage might even be considered a societal issue. People are more aware than ever before. Others live, work, and play in areas where trash is thrown. Less material is employed to form packaging known as "source reduction". Thin items like aluminium cans and lightweight plastic soda bottles are samples of source reduction. Environmental variables play an essential part in the assembly of new goods and should continue to do so.

Natural polymers play a key role within the synthesis of biomimetic materials in nanotechnology. Natural polymers are an indispensable source in the biomaterials area. More efficient packaging design is expected to be recoverable and used economically. Sustainable packaging meets health and market expectations for people and society and is useful, safe, and cost effective throughout its life cycle. They are made by using supply, production, transport, and recovery renewable energy. It is designed to have maximum renewable or recycled materials and manufactured with best practices and most clean production technologies. According to all end of shelf-life scenarios it is made of all healthy materials made and physically made to use the most appropriate materials and energy effectively and recovered. In the packaging business, it is expected that consumer attention on recycling and "green" packaging awareness will rise in the next ten years. Sustainable design is the best design in the social, economic and environmental performance or the least in the social, environmental and economic costs. Sustainable design is strategic use of design without compromising design and environmental hazards to meet future human needs. [18-25].

### 3.2 Statistical Data

The need for packaging has been increasing at an exponential rate, since packaging design is the most effective way to attract buyer's attention. Aside from branding, the packaging design of your goods may make or break your success in the market. According to the research "The Future of Global Packaging through 2022," global packaging

demand will rise at a steady 2.9 percent per year until 2022, reaching \$980 billion. By 2018, worldwide packaging sales will have increased by 3% and will be growing at a 4% yearly pace. Packaging sales made up 36 percent of overall sales in Asia, while 23 percent and 22 percent respectively in North America and Western Europe.



**Figure.1. Packaging Waste Disposal Statistics**

In today's world, packaging trash is a major contributor, accounting for half of all waste. In 2015, 53 percent of containers and packaging were recycled. Landfills produced 29.4 million tones that same year (21.4 percent of total land filling).

**India's Plastic Waste Statistics** -In India 3.3 million metric tons of plastic waste was produced in 2018, according to a study made by the Central Pollution Control Board (CPCB). According to the research, the country created almost 25,940 TPD (around 9.4 million tonnes per year) of plastic garbage.

#### **4.1 Role of Intellectual properties in food packaging**

The innovation and creative thinking while designing the package in the packaging industry has always been growing, therefore due to which the design and manufacture of latest packaging and packaging related technology mostly end up with generation of property which will provide a valuable commercial advantage. Nevertheless, all ideas are left unprotected and open, allowing the competitors to repeat. This will lead to decrease in trading as well as a lesser return on the effort made in developing a replacement package. A few intellectual property rights, like copyright and unregistered designs, can appear automatically on

the designing of a piece and with no registration required. On the other hand, patents and registered designs must be applied for before the innovation is disclosed. Unregistered rights have advantages and are easy to obtain since they grow organically. However, depending on unregistered rights might be risky because proving that copying occurred, which is generally necessary to show infringement, can be challenging. A registered right provides easier protection since it creates an ownership right, suggesting that no one else can use the design or cover of yours which is patented or registered. A patent allows its owner to establish themselves as the market leader for a product covered by the patent, it provides an opportunity for the owner to make a profit, and acts as a deterrent to rivals. Any novel technological characteristics of a package, such as a replacement closure or dispensing mechanism, might be protected by a patent. In addition to protecting the package itself, the equipment and/or technique used to make it will be patentable. A patent aims to guard the general concept of an invention to hunt the broadest possible scope of protection. The intention is usually to make sure that a competitor cannot make some relatively minor modifications then achieve an equivalent advantage to things the invention does, while also avoiding any infringement. Along with patents, a registered trademark is used in the protection of shape and design of the package. Once the trademark is registered it protects the package from infringement. However, there are few designs that cannot be registered under trademark for example marks that are vulgar or marks that have a religious sentiment or marks having scandalous or obscene matter. Once a trademark is registered it is published, so that people get to know what is already registered and for opposition from the public from granting a trademark registration. The symbols or the names representing a company or the product of that firm are frequently granted a registered trademark. Obtaining trade mark registration for aspects of a replacement package, like its design or pattern, colour and shape, assist in the prevention of counterfeit items being sold by competitors. It's critical to understand property and how it works to prevent rivals from duplicating products, trade marks, or designs. Commercial benefits, such as a potential tax cut, should not be

neglected.[26-31].

#### 4.2 Improving food safety and consumer protection

It is the responsibility of the government to make laws and enforce them and ensure that quality and standards are maintained in the food industry to protect consumers and enrich nutrition among them. Food safety is a science discipline that outlines how to prepare, handle, and store food in order to avoid food-borne sickness or disease. Every customer has the right to know if the food you are eating is safe and of excellent quality. The government should set up a system that will be responsible in maintaining the safety of the food that is produced locally or imported and also in reducing the risk of diseases that are spread through food. The government should also set up the maximum level of substance that can be used which will be harmful in high quantities (for example- additives) and stricter provisions for adulterated food. International organisations and developed countries are often welcomed to provide assistance to the other countries in maintaining the standards and improving the quality. The labelling regulations should provide all the relative information with respect to the food along with caution, for consumers if there are any contents that could harm a particular set of consumers and should also protect consumers against false information about the product that could deceive the consumer. Food safety can be further improved by amending the present laws and making stricter regulations and higher penalties if the standards are not met.

#### 4.3 Food packaging laws and regulations

Packaging has an insignia as an important industry in most of the countries. The laws and regulations that hold these industries and their products are very important. These laws serve as a safeguard and render protection to the consumers in terms of quality and quantity. The relationship between food packaging and consumer protection is critical. A food package aims at delivering safe and quality food to the consumer. To protect the consumer and the environment, Packaging Laws and Regulations have been made by the Government.

A package design must fulfill all the applicable government laws, provisions and regulatory standards. Each country can have its own export and import laws and regulations with respect to

packaging in general. Packaging design also includes the label on the product and there are laws which define the standards that have to be met with respect to labelling, for example the ingredients, nutritional values and the date of manufacture and expiry. It is important for the manufacturer to know all the laws that relate to food packaging and must ensure that all of them are followed for the benefit of the customer and the society.

The laws and regulations protect the customer as they aim at

- i. The labelling standards as so as all the necessary details are conveyed to the customer, thereby also protecting from any false-claim or misleading information
- ii. Having a safe packaging system, such that the materials do not have an environmental impact.
- iii. In maintaining the food quality in terms of safety and hygiene and the quality of the materials used for different food substances
- iv. The Indian government has implemented legislation to ensure that packaged goods meet certain quality requirements. Regulations have also been established for the specific type of packaging that is necessary, based on the product. The following are the rules on packaging quality requirements that regulate food items in India
  - Agriculture Marketing (AGMARK) Rules, 1937
  - The Fruit Products Order, 1955 (FPO)
  - The Meat Food Products Order, 1973 (MFPO)
  - The Standards of Weights and Measures Act, 1976 and the Standards of Weights and Measures (Packaged Commodities) Rules, 1977 (SWMA).
  - Bureau of Indian Standards (BIS) Act, 1986 and BIS rules, 1987
  - The Prevention of Food Adulteration Act, 1954 and the Prevention of Food Adulteration Rules, 1955 and its first amendment, 2003 (PFA).
  - The Edible Oil Packaging Order, 1998
  - Food Safety and Standards Act, 2006 and Food Safety and Standards (Packaging and Labelling) Regulations, 2011.

The Prevention of Food Adulteration Act, 1954 prohibits the use of any food adulterants (section 7) and The Prevention of food adulteration rules

1995 gives the labelling provisions of food packaging in view of consumer protection. The Bureau of Indian Standards Act, 1986 prohibits the improper use of standard mark and The Bureau Of Indian Standards Rules, 1987 has provisions with respect to materials used in food packaging and the standards of labelling. The Standards of Weights and Measures Act, 1976 has provisions with respect to the net weight, capacity, number of contents and the penalty that will be faced when the standard isn't met while The Standards of Weights and Measures (Packaged Commodities) Rules, 1977 mentions that if deceptive packages aren't re-packed or re-labelled, they can be seized and also mentions the declaration that needs to be included on the package. The Edible Oils Packaging (Regulation) Order 1998 gives the labelling standards and prohibits those packages which do not meet the quality standards. The Agricultural Produce (Grading and Marking) Act, 1937 states the penalties that would be faced when the in case of unauthorised marking of the grade designation mark and of counterfeiting the designation mark and lastly in case of selling migrated articles. Meat Food Products Order, 1973 mentions the hygiene and sanitary requirements of the manufacturer. In the Food Safety and Standards Act, 2006, the packaging and labelling provisions are given under section 23 while the penalties for misbranded food is given under section 53 and 57. Food Safety and Standards (Packaging and Labelling) Regulations, 2011 states the general requisites for packaging and labelling for standard food products, specific food products and pre-packed food products. The Fruit Products Order 1955, has provisions on maintaining quality standards along with the sanitary and hygienic conditions in the manufacturer's premises.[32-35].

#### **4.4 Judicial Decision**

##### **4.4.1 Shilpi Banerjee vs Union of India & Ors. on 8 October, 1999.**

The application was filed by Shilpi Banerjee, on the basis of public interest litigation, claiming that the tin containers used for the packaging of vanaspati should adhere to the standard of ISI. She pleaded to prohibit the use of second-hand packaging material made of tin and those tin containers without ISI mark and that vanaspati and edible oil must be prohibited from being packed in

substandard quality material. Edible oil packaging comes under the provision of the Standards of Weights and Measures (Packaged Commodities) Rules, 1977 and the Prevention of Food Adulteration Act, 1954. The honourable court said it would be harmful to health when tin is exposed to acids and would cause injuries to the public health. Also, they prohibited the use of second-hand tins for food packaging and asked the controller to ensure proper inspection.

##### **4.4.2 M/S.Chromachemie Laboratory Private ltd vs The Authorized Officer on 25 September, 2015**

A writ was filed against the defendants to clear the goods for home consumption. The Company had imported 80 packages of 'Erythritol' which is used in manufacturing of artificial sweetener. The product did not contain the label according to the Food Safety and Standards (Packaging and Labelling) Regulations, 2011. A writ was filed against the defendants to clear the goods for home consumption. The learned counsel for the petitioner said that Erythritol is a sugar alcohol and thus a food additive which is not meant for direct consumption and stressed on the point that Erythritol is utilized in manufacturing of artificial sweetener and the final-end product can be labelled before selling to the customer. He also stated that the final goods would not come under the category of 'pre-packaged' or 'pre-packed' food as per its definition and hence the labelling regulations are not applicable according to Section 3(1)(f) of the Food Safety and Standards Act, 2006. The honourable court held that it is not acceptable according to regulation 2.2.2 of the Food Safety and Standards (Packaging and Labelling) Regulations, 2011 that the product whether it is food or food additive or meant for industries or retail to be unlabelled and since all goods are degradable it is mandatory to label. Since the life period of the good is unknown the court said that Erythritol has inadequately failed to satisfy the requirements under labelling and dismissed the writ.

##### **4.4.3 International Foodstuffs Co. Llc vs Parle Products Pvt Ltd. And Anr, 2016**

International Foodstuffs Co. LLC (IFCL), a Dubai based company, the plaintiff is the registered proprietor of the mark 'LONDON DAIRY' used in selling ice creams, which is registered as word-

mark and label-mark under class 30 in 2007. The defendants have acquired the mark Londonderry which they use in selling boiled confectionery sweets, with their mark registration currently pending. The plaintiff on realizing this filed a petition for an injunction on grounds of trade mark infringement and passing off. The honourable court gave the verdict saying that there is nothing in common between the trademark and that of parle is purely distinct and the chances to get confused between the product is minimal due to the large difference in the price of the products and the products are completely distinguishable in all parameters except the phonetics and therefore refused to grant injunction.

#### **4.4.4 Dabur India Limited vs Marico Ltd, 2020**

The plaintiff Dabur India filed a complaint in the Delhi high court against the defendant Marico over the launch of Saffola honey. The claims focused on the bottle, label, and packaging being imitated. Dabur asserts that 'Dabur honey' has been sold constantly and widely in its new trade-dress and packaging since 2013, and that it has a solid reputation among its customers. Dabur requested an ad-interim injunction, to which the defendant objected, claiming that the major element of the defendant's bottle is its brand name Saffola inscribed in a heart shaped yellow colour, which is a feature that the defendant uses in all of its goods. The honourable court mentioned that even while Marico's brand name Saffola is prominent on the bottle, the overall comparison of the two products shows a similarity, which can confuse the minds of consumers, and if no ad-interim injunction is issued, the plaintiff will suffer irreparable loss. However, it was noted that the interim injunction will not apply to the defendant's items that were already. [36-39].

#### **5.1 Suggestions**

From a Manufacturers point of view, we suggest that the manufacturers should make use of the power of Intellectual Property Rights to protect their packing strategy, packing shapes (especially when it comes to bottles or containers) and design of the package as it becomes a identity if the company grows in the future and there likely could be someone who could infringe and make benefit of the hard earned fame as pictured in the above cases. From a Consumer protection point of view if we focus on the health and safety factor, we can

look into the subject of "Printing ink used in food packaging" - Off-set migration may occur when printing inks come into touch with food on the interior surface. Inks may be present in the bulk material if recycled paper is used. Though there are no regulations on the use of printing ink on food packages, we suggest the manufacturer make use of an alternative ink which is eco-friendly and which does not have any harmful effect on the health, like vegetable-based printing inks or water-based printing inks. Also, we suggest the manufacturer strictly adhere to the laws and regulations so that there is no harm caused to the consumers and the environment. Food Packaging Waste Reduction Is Everybody's Responsibility There are various ways to reduce your food packaging waste through restriction, replacement, and reuse. To limit this waste, one can

- Purchase products in bulk.
- Make use of reusable products.
- If one-time usable, then use biodegradable disposables.
- Recycle after use so that the waste is reduced.

#### **Conclusions**

Packaging is an indispensable part of modern life created by technology. Today, people's living style, situation, their busy work schedule, accessibility and knowledge to cook and many other factors have played an important role in the rising demand for pre-packed food which in turn has increased the overall production of food packaging. Technology quickly changes our lives and makes our lives more active and affects every sector differently and the food packaging sector also takes its share of change. Green packaging technology which is affordable, manufactured using natural resources, which can protect the food in its entire shelf life, allowing portions, ease of use, small footprint, having technological advantages and functional features, and is environmentally friendly contributes to the quality of human life. Nowadays, using efficient packaging technologies, packaging is thinned as much as possible, weight has been reduced and package failure is minimized. Its shape, opening and closing features, and sizing have led the operation of eating to be easier and more practical and safer in compliance with consumer demands and expectations. For people to live their daily lives actively they will prefer packaging methods

which are providing integration to life and replying their expectations. while selecting a material for food packaging, factors like cost, handling, deterioration of food with respect to time and environment impact factors must be considered. Technologies are immensely advancing and intelligent packaging is on the horizon and very likely to take over the packaging industry in the upcoming years

### References

- [1].A Brief History of Packaging - Kenneth R. Berger, reviewed by B. Welt
- [2].An overview of paper and paper-based food packaging materials: health safety and environmental concerns - Gaurav Kr Deshwal, Narender Raju Panjagari, Tanweer Alam
- [3].<https://crawfordpackaging.com/automation-and-innovations/history-of-packaging>
- [4].<https://ohioline.osu.edu/factsheet/cdfs-133>
- [5].<https://www.structuralgraphics.com/blog/a-brief-history-of-packaging/>
- [6].Food Packaging History and Innovations-Sara J. Risch
- [7].Take legal measures to protect food packaging – Jeffrey Brown, Adnan Bohr
- [8].Patent wire- Intellectual property
- [9].<https://consumeraffairs.nic.in/more/archive/the-standards-of-weights-and-measures-act>
- [10].<https://indiankanoon.org/doc/61800811/>
- [11].<https://indiankanoon.org/doc/32969400/>
- [12].<http://extwprlegs1.fao.org/docs/pdf/ind10950.pdf>
- [13].[http://164.100.47.4/billtexts/rsbilltexts/AsIntroduced/XXVI\\_2003.pdf](http://164.100.47.4/billtexts/rsbilltexts/AsIntroduced/XXVI_2003.pdf)
- [14].<https://www.india.gov.in/fruit-products-order-1955>
- [15].<https://fssai.gov.in/upload/uploadfiles/files/MFPO-1973-Amended-English.pdf>
- [16].<https://fssai.gov.in/upload/uploadfiles/files/Editional-Oil-Packaging.pdf>
- [17].<https://legislative.gov.in/sites/default/files/A1937-1.pdf>
- [18].<https://bis.gov.in/PDF/bs/198663.pdf>
- [19].<https://bis.gov.in/index.php/bis-act-rules-regulations/118330-2/>
- [20].[https://www.indiacode.nic.in/bitstream/123456789/7800/1/200634\\_food\\_safety\\_and\\_standards\\_act%2C\\_2006.pdf](https://www.indiacode.nic.in/bitstream/123456789/7800/1/200634_food_safety_and_standards_act%2C_2006.pdf)
- [21].[https://www.fssai.gov.in/upload/uploadfiles/files/Packaging\\_Labeling\\_Regulations.pdf](https://www.fssai.gov.in/upload/uploadfiles/files/Packaging_Labeling_Regulations.pdf)
- [22].<https://www.legalindia.com/judgments/shilpi-banerjee-vs-union-of-india-ors-on-8-october-1999>
- [23].<https://indiankanoon.org/doc/189494021/>
- [24].<https://indiankanoon.org/doc/143167701/>
- [25].<https://www.mondaq.com/india/trademark/489148/trademark-infringement-case--london-dairy-vs-londonderry>
- [26].<https://www.hindustantimes.com/mumbai/phonetic-similarity-in-brand-names-not-infringement-hc/story-1JyVh87majScBMJD57O5RM.html>
- [27].<https://indiankanoon.org/doc/67666016/>
- [28].<https://timesofindia.indiatimes.com/business/india-business/dabur-marico-in-legal-tussle-over-honey/articleshow/77076067.cms>
- [29].<https://www.google.com/url?sa=t&source=web&rct=j&url=https://onlinelibrary.wiley.com/doi/10.1111/1541-4337.12343&ved=2ahUKEwiW3P3K2dXwAhVr73MBHVCEdyA4ChAWMAN6BAGLEAI&usq=AOvVaw3l0bvJmyHVfmNG16NhKCsK>
- [30].<https://www.infinitiresearch.com/thoughts/top-smart-packaging-companies>
- [31].<https://www.bluebite.com/brand-strategy/smart-packaging-examples>
- [32].<https://packaging360.in/insights/intelligent-packaging-systems-for-food/>
- [33].[https://www.researchgate.net/publication/345063737\\_Food\\_Packaging\\_and\\_Storage](https://www.researchgate.net/publication/345063737_Food_Packaging_and_Storage)
- [34].[https://www.researchgate.net/publication/312000963\\_Food\\_packaging](https://www.researchgate.net/publication/312000963_Food_packaging)
- [35].<https://www.mondaq.com/india/trademark/954524/role-of-ip-in-food-industry>
- [36].<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3312695/>
- [37].<https://www.shorr.com/packaging-news/2020-09/2020-food-packaging-consumer-behavior-report>
- [38].Foodservice Packaging Institute, "A Brief History of Foodservice Packaging", 2006
- [39].Reducing wasted food and packaging: A Guide for food services and restaurants. US Environmental Protection Agency.