



ASSOCIATION OF COMPOSTABLE PRODUCTS IN INDIA

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CIN: U91990RJ2021NPL074708

ABOUT US :-



Association of Compostable Products in India (ACPI) is a PAN registered non-profit making association Registered under section 8, for memberships to :

1. Compostable product manufacturers and sellers certified by Central Pollution Control Board (CPCB) in India.
2. Manufacturers and marketers of compostable product raw material.
3. Compostable product manufacturing machinery suppliers.

The aim is to promote this Ecofriendly compostable alternative , to the Banned SUP & to give handholding to the plastic manufacturers to convert them as compostable products manufacturers ,with their existing plant and machineries .



SINGLE USE PLASTIC BAN IN INDIA -IN 3 STAGES

Stage 1

From July 1, 2022 — the list of banned items will grow. It will include single-use plastic plates, cups, glasses, cutlery such as forks, spoons, knives, straw, trays, wrapping/packing films around sweet boxes; invitation cards; cigarette packets, plastic/PVC banners less than 100 micron and stirrers.

Stage -2

Second stage will come into effect from January 1 ,2022, when six categories of single-use plastic — earbuds with plastic sticks, plastic sticks for balloons, plastic flags, candy sticks, ice-cream sticks, polystyrene

Stage 3

Ban with effect from September 30. 2021 The rules propose that each sheet of non-woven plastic carry bag shall not be less than 60 (GSM per square metre) or 240 microns in thickness. A carry bag made of virgin or recycled plastic shall not be less than 120 microns, with effect from the same date.

WHY SINGLE USE PLASTIC BAN IN INDIA-



Plastic bag
20 years



Coffee cup
30 years



Plastic straw
200 years



6-pack plastic rings
400 years



Plastic water bottle
450 years



Coffee pod
500 years



Plastic cup
450 years



Disposable diaper
500 years



Plastic toothbrush
500 years

INDIAN PLASTIC WASTE - India produces 9.46 million tonne of plastic waste every year, of which 40% remains uncollected. And 43% is used for packaging, most of it single-use. About 60% of this has ended up in landfills or in the natural environment.



ALTERNATIVES FOR THE SUP BANNED ITEMS :-



Alternatives for SUP

Glass Products .

Paper Products .

Metal Products .

Cloth Products .

Wooden
products /Leaf
based Products .

Bio Plastic /
compostable
products.



WHY COMPOSTABLE IS/ISO 17088 ; SUITED FOR INDIAN CONDITIONS



Compostable

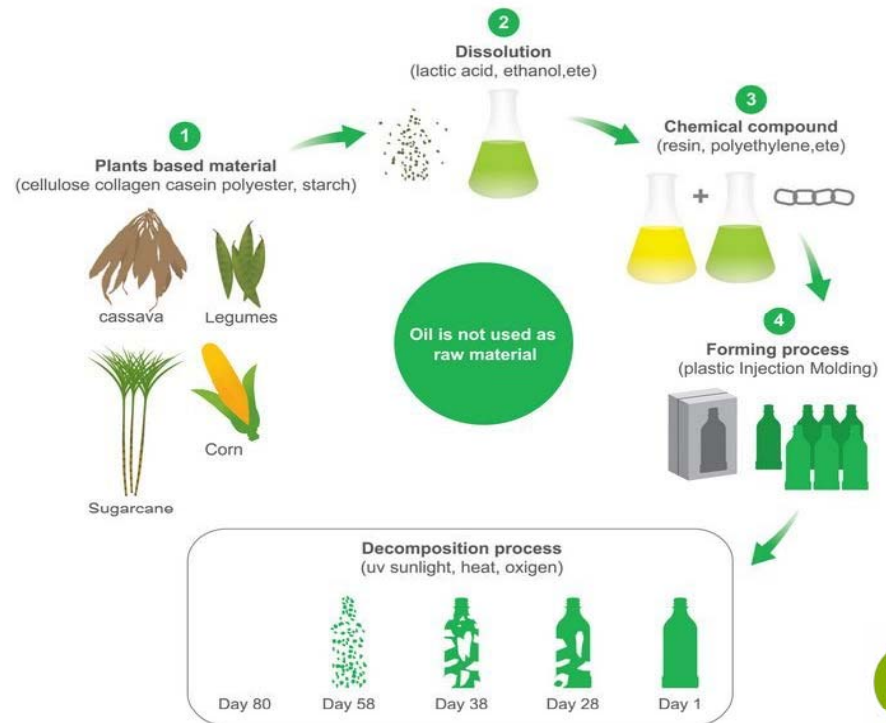
Proof of biodegradation available thru accredited laboratories, For India CIPET Biodegradation takes place through biological activity, particularly microbial activity

Meets composting standards like ASTM D6400, EN 13432, IS:ISO 17088
Well established standards defines timeline

Based on raw materials used which can be distinguished as Starch Based, Cellulose based, produced by bacteria & fossil based,

Gives out CO₂, Water & biomass.
Biomass suitable for agriculture

Bioplastic





***Nature Is The Most
Trusted Recycling
Partner!***





WORKING CLOSELY WITH GOVERNMENT FOR THE SINGLE USE PLASTIC BAN



COLLABORATION WITH DEFENCE RESEARCH AND DEVELOPMENT ORGANISATION (DRDO) FOR THE DEVELOPMENT OF COMPOSTABLE RAW MATERIAL IN INDIA- 2022



WORKING CLOSELY WITH STATE GOVERNMENT / AUTHORITIES FOR THE SINGLE USE PLASTIC BAN AND PROVIDING IT'S ALTERNATIVES



WORKING CLOSELY WITH STATE GOVERNMENT / AUTHORITIES FOR THE SINGLE USE PLASTIC BAN AND PROVIDING IT'S ALTERNATIVES



ARRANGING VARIOUS CONFERENCES AND SEMINARS TO CREATE AWARENESS ABOUT COMPOSTABLE PLASTIC



ACCEPTANCE OF ALTERNATIVE PACKAGING / PRODUCTS GLOBALLY :-

According to Capgemini's latest research study on sustainability and changing consumer behaviour, 79% of consumers are changing their purchase preferences based on social responsibility, inclusiveness, or environmental impact. 53% of consumers and 57% in the 18-24 age group have switched to lesser known brands because they were sustainable. More than half of the consumers (52%) say that they share an emotional connection with products or organisations that they perceive as sustainable.

•The global plastic alternative packaging market is expected to grow from **\$61.23 billion in 2020** to **\$71.08 billion in 2021** at a compound annual growth rate (CAGR) of **16.10%**.

• *DELPHINE VIGUIER-HOVASSE – Global Brand President – L'Oréal Paris*

- By 2025, 100% of our plastic packaging will be refillable, reusable, recyclable or compostable
- By 2030, 100% of the plastics used in our packaging will be either from recycled or bio-based sources (we will reach 50% in 2025)

The top opportunities in the plastic alternative packaging market segmented **by type** will arise in the **starch-based plastic segment**, which will gain **\$941.8 million** of global annual sales by 2025. **Data by :**The Business Research Company

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NDIAN Perspective:

According to media reports, companies such as Marico, Bacardi, ASICS, HUL, Nestle India, Future Consumer, Coca-Cola, Pepsi-co, Parle Agro will move to 100% recyclable packaging by 2025 helping towards a sustainable future.

Sanjiv Puri, chairman & MD at ITC.

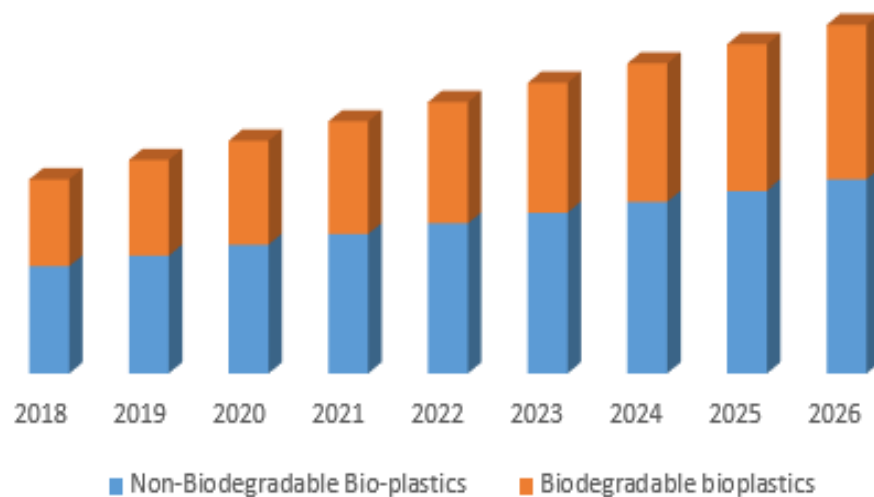
“ITC's We aim to ensure that 100% of our packaging is reusable, recyclable or compostable in the NEXT DECADE



BIO PLASTIC MARKET TREND :-



India Bio plastics Market, by Product



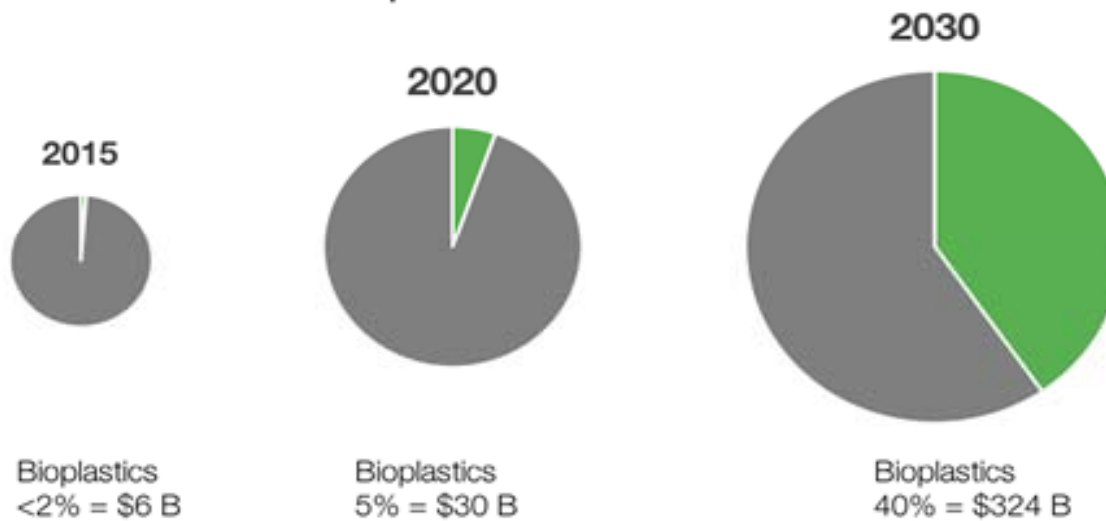
India Bio plastics Market to grow at 28.4 % CAGR during the forecast.



MOST SUSTAINABLE SOLUTION WILL GROW MOST



Global Bioplastics Market



¹Source: Grand View Research 2014, European Bioplastics 2013, BCC Research 2017, Nexant Inc. 2012

² <https://www.alliedmarketresearch.com/press-release/bioplastics-market.html>



COMPOSTABLE PLASTIC IS THE FUTURE OF PLASTIC (STRENGTH)



- ✓ End of life : Follows the basic rule of going back to nature. Converts 100% into natural products in limited time
- ✓ Uses existing Facilities- Easy switchover in existing infrastructure.
- ✓ Scalable – Globally 20MMT/year is already in use and capacities growing
- ✓ Accepted globally as most promising alternate to SUP



DIFFICULTIES TO BE ADDRESSED (WEAKNESSES)



- ✓ Limitations in using functional packaging applications like that of requiring barrier properties
- ✓ Cost is still high compared to plastics
- ✓ Awareness is limited to certain section.
- ✓ Policies to replace plastics have still not percolated to smaller towns.



CHALLENGES FOR COMPOSTABLE PLASTIC (THREATS)

- ✓ Fake products in the name of OXO-biodegradables misleading and entering in the market in big way
- ✓ Lack of regulation and enforcement in many countries
- ✓ Price gap between Conventional plastic and Compostable plastic.



THE WAY AHEAD IS A BRIGHTER WAY(OPPORTUNITIES)

- ✓ New polymer innovations like PHA, PBS, PEF etc. These newer compostable plastics addresses most of current problems of it.
- ✓ Natural / biobased feed stock is abundant. Newer technologies are evolving to use biobased /natural resources
- ✓ Huge global investments coming up in this sector like CJ BIO, Danimer Scientific etc
- ✓ Citizen drive towards green packaging across the world



THE RECENT ADVANCEMENTS:



- ✓ Bread Loaf Study: Srisa et al.¹⁷⁴ studied antifungal bioplastic films, developed based on PLA and poly(butylene adipateco- terephthalate) (PBAT) blends. According to PP's forensic engineering, additional storage resulted in the development of fungal growth over the entire loaf on day 4. Mold mycelium expansion was successfully reduced by PLA/PBAT films and microbiological growth was not detected in any of these films.



THE RECENT ADVANCEMENTS (CONTD):



- ✓ Compostable polymers are also appealing materials for biomedical applications due to their unique physicochemical, biological, and degrading features. They help in reducing greenhouse gas emissions and fossil resource depletion. An Italian Company Bio-on is pioneering it.



THIS IS HOW BIO PLASTIC APPLICATIONS CAN BE A GAME CHANGER



Compostable
Courier Bags



Compostable
Bin Liners



Paper Coating



T-shirt,
Retail bags



Multilayer
Packaging



Cling Wrap



Compostable
Hand Gloves



Compostable
Cutlery



Mulch Films



Food Packaging



Compostable
Straws



Injection
molding



Compostable
Cups & Glass



Compostable
packing



THANK YOU SO MUCH



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