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# Pioneering The Future Of Sustainable Packaging & Agricultural Solutions

**Solving the Micro-plastic crisis with science-based, scalable, profitable, planet-positive solutions.**


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# Microplastics becoming a megaprob

## Studies show an increasing prevalence in our waterways

By John Zaktansky
MidlifeSusquehannaRiverkeeper.org

In 2019, as Susquehanna University professor Jennifer Elick transported her class to a wastewater treatment facility tour and water sampling opportunity in eastern Snyder County, one of her students started feeling sick.

"I dropped her off at the local laundromat with some fleece blankets and had her run them through the wash cycle," Elick said. "Every 10 minutes, she took a sample of the washer's water."

Meanwhile, Elick and the rest of her

Photo provided

Susquehanna University student Samantha Chillis tests samples for evidence of microplastics, which she found in increasing numbers in Bull Run near Lewisburg, Pa.

Microfibers hang off wrapped around a b banks of Perms Cre grove, Pa.

John Zaktansk

*Reflections from the Riverkeeper*

# Microplastics found in human brain for first time

The substances have previously been found elsewhere in the body, but researchers in Brazil say they have found them in the part of the brain that processes smell

Adam Vaughan, Environment Editor

Microplastics have been found in the human brain for the first time, raising concerns over potential impacts on human health.

The tiny pieces of plastic are near-

see an increasing prevalence of these diseases worldwide," said Thais Mauad, who led the study.

The location in the brain has led her to speculate that people are breathing in the plastics through their nose. "When you breathe, there are neuron cells in your nasal cavity connected to the olfactory bulb. We thought maybe this could be the entry route," said Mauad. Other studies in recent years have shown one type of air pollution, fine particulate matter called PM2.5, can reach the brain.

Scientists are still investigating what effect microplastics have on human health. One Italian team, writing in the New England Journal

# UNSAFE WATER

- Study, which assessed tap water in Margao, Panaji, Mapusa, Marcela and Canacona and treated water samples from water treatment plants at Assonora, Opa, Salaulim and Canaocona, has found microplastic particles
- Around 11 water samples of different water sources (pre-treated, post-treated and

Dr Mahua Saha for an investigation led by Toxic Links, a Delhi-based NGO

- Findings have sho average number of microplastics found in each 20 litre wate sample ranged from 1MPs/L to 11.6MPs/
- Study has indicate

# Our alarming plastic diet

## Study: Malaysians eat 500mg of microplastics daily

By DIYANA PFORDTEN
newsdesk@thestar.com.my

**TALING JAYA:** Malaysia ranks e highest among 109 countries consuming microplastics, which e plastic particles smaller than mm, a recent study found.

The study, published in the nvironmental Science and echnology journal, found that alaysians eat an average of 2.3mg of microplastics daily r capita.

increasing plastic pollution levels.

"Dietary microplastics involve those accumulated in foodstuffs and the material losses from plastic use in food and drink production, processing, and final product packaging.

"Meanwhile, airborne microplastics mainly originate from the abrasion of plastic materials, such as those in tyres and blow-ups from aquatic plastic particulates," they said.

The authors said one major

Top 10 countries with the most microplastic consumption


# Microplastics Are in Our Food, Water — Even Our Bodies

Study finds microplastics in mussels along Kasimedu harbour

# PLASTIC ON MY PLATE

U.Tejonmayam @timesgroup.com

Shooting a balloon or grabbing a pack of cotton candy may be fun on a beach outing, but not when the colours on the rubber balloon or the plastic used to wrap the snack land on our plates. Going by the findings of a city-based laboratory, that day will arrive soon.

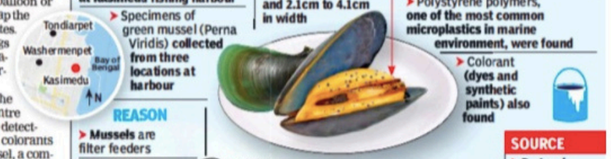
Scientists from the National Coastal Centre for Research (NCCR) detected microplastics and colorants in Asian Green Mussel, a commercially important seafood, collected from different locations along the Kasimedu Fishing Harbour, one of the busiest fishing spots in the city.

Microplastics of 30 micrometre size, fibres of 5 to 25 micrometre and colorants like orange, green, light blue and dark red in 62 to 108 micrometre were found in the soft tissues of

## OCEAN'S UNDERBELLY

**THE STUDY**

- National Centre for Coastal Research collected mussels at Kasimedu fishing harbour
- Specimens of green mussel (Perna Viridis) collected from three locations at harbour
- Specimens weighed 23.7g to 31g and measured 7cm to 9.5cm in length and 2.1cm to 4.1cm in width




**FINDINGS**

- Microplastics found in soft tissues of mussels
- Polystyrene polymers, one of the most common microplastics in marine environment, were found
- Colorant (dyes and synthetic paints) also found

**REASON**

- Mussels are filter feeders
- They filter 24 litres of water a day in which microplastics could be floating
- They could have ingested microplastics

**SOURCE**

- Port and harbour, spillages from ships, fishing trawlers and boats, fish landing centres, recreational activities on beaches, industrial

## STUDY HIGHLIGHTS

- Microplastic presence is found the highest at High Court jetty, followed by Ponjikkara, Ernakulam jetty, Bolgatty, Mulavukad and

# Plastic in the sea

To assess the threat of microplastics to marine life, the National Institute of Ocean Technology has comenced a study. Details:

- Microplastics are small plastic particles less than 5 mm in size that end up in the ocean
- They come from various sources, including the cosmetics industry
- Microplastics may be mistaken for food by aquatic life; such particles ingested by fish may affect humans
- The pilot study by NIOT and NCCR lifted samples from four locations near coastal areas and deep sea — off Chennai, off the mouth of the Godavari river, off the mouth of the Mahanadi river delta in Odisha and off the Ganges river's mouth in West Bengal
- Water samples and sediment collected from depths ranging from 40 metres to 200 metres
- Presence of microplastics in the ocean will be determined by a lab study of the

break up into smaller pieces

- The particles enter the ocean through waterways. In Chennai, the Cooum, the Kosasthalaiyar and Adyar rivers

THE TIMES OF INDIA

*Leaky city landfill poses severe*

PLASTIC CHOKE

IIT Gandhinagar

Amount Of Microplastics At Various Location Of Sampling Along Sabarmati River

Sewage outlet along Saba

IN COSMETICS

Microbead plastics, less

**This is no longer just an environmental issue — it's a health and consumer perception crisis. Phitons is ahead of the curve, delivering certified compostable alternatives with the scale and systems the future demands.**

# Introduction to Phitons

Phitons is a sustainability-driven materials science company pioneering compostable, high-performance alternatives to single-use plastics. Our mission is to deliver scalable, planet-friendly solutions for packaging, agriculture, and industrial applications.

## Our award-winning product portfolio includes:


### EarthenKraft

**Convenient, Guilt-Free, Sustainable Alternatives to Single-Use Plastics**

- Compostable daily-use products (bags, pouches, bin liners)
- Hospitality & Healthcare Solutions
- Retail & Delivery Solutions


### Earthen DuraPack

**Eco-Conscious, Durable Packaging for Industrial Components**

- Compostable high-strength sheets for industrial packaging, LDPE replacement
- Industrial & Manufacturing Solutions


### EarthenAgri

**Smart Agricultural Solutions that Enrich Soil and Simplify Farming**

- Compostable mulch sheets and nursery bags, soil-enriching, zero microplastics
- Agri & Farm Solutions


### EarthenFresh

**Redefining Freshness—Longer Shelf Life Without Cold Storage**

- Active packaging with natural antimicrobial oils, extending produce shelf life
- D2C grocers and fresh produce exporters

## TRUSTED BY INDUSTRY
## REPEATABLE WINS ACROSS SECTORS

Phitons

# EarthenAgri: The World’s First Proven Compostable Mulch Film

- **EarthenAgri replaces plastic mulch films in agriculture**—a major source of soil microplastic contamination
- Contains **proprietary Earth-derived mineral filler**, it decomposes naturally in soil after crop cycles
- **Unlike plastic, it doesn’t need to be removed or burned**—farmers simply till it back into the earth
- **Proven across 3,00+ acres in India**, especially for short-term crops (3–5 months)

**This is not a lab experiment—it works at scale and is the only compostable mulch film with real-world validation**

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# From Ban to Blueprint: Making Cities Truly SUP-Free

Cities wanted to **eliminate single-use plastics**. But **enforcement failed** because viable **alternatives didn't exist at scale—until now**

**The Opportunity for BlueCities:**

- 🛑 **The Ban Isn't Enough**
  - SUP bans failed because cities lacked real, scalable alternatives.
- ✅ **Now the Solution Exists**
  - Compostable. Certified. Locally manufacturable—EarthenAgri and EarthenKraft fill the gap.
- 🌍 **From Policy to Practice**
  - We enable citywide pilots that make bans enforceable, adoptable, and practical.
- 🔗 **Join the Transition**
  - We're ready to partner with cities, waste boards, and urban sustainability champions.

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