

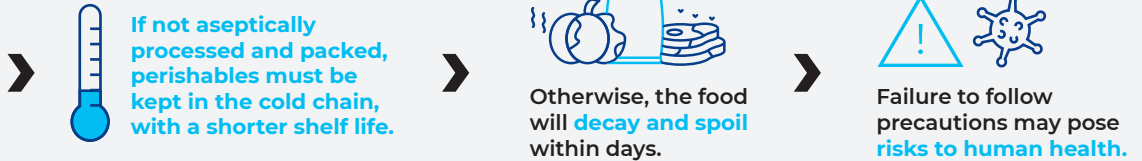
Aseptic packaging and technology: Making perishable foods safe and available

We rely on food and beverages for our daily nutrition. Many of these items, such as milk, juice and plant-based alternatives, are highly perishable. Their short shelf lives present **many sustainability challenges**.

The EU produces

250
MILLION TONNES

of perishable foods per year.¹



European policymakers now face the challenge of regulating packaging for this type of food **in line with the EU Green Deal ambitions**,² aiming to make food systems sustainable and resilient, while supporting reduction in food loss, food waste and carbon footprint.

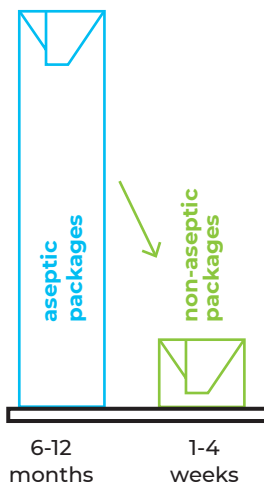


The aseptic process of heat treatment, filling and packaging at the food producer enables the absence of harmful microorganisms across the entire distribution chain until consumption.

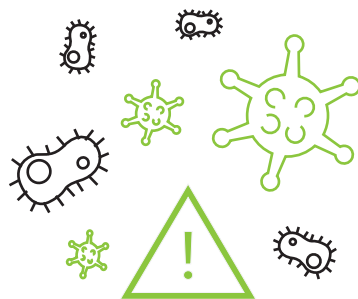
Everything in the production chain must be commercially sterile. That includes food and packaging materials, all machinery and the environment in which the food is packaged.

Without aseptic packages:

1 Shorter shelf life of perishable foods³

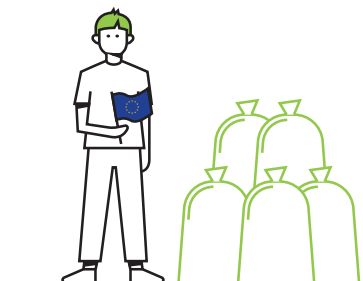


2 Increased growth of pathogens posing a health risk⁴



Food and beverages need to be at **pH <3.7 and kept at <4°C** along the whole value chain to exclude at least bacterial foodborne pathogens. This would require a redesign of the entire distribution chain.

3 Increased risk of additional food waste



131kg
food waste
per EU citizen
per year⁵

¹Key figures on the European food chain, Eurostat, 2021 / ²A European Green Deal, European Commission, 2019 / ³Extended shelf life milk-advances in technology, Rysstad and Kolstad, 2006 / ⁴Growth of food-borne pathogens Listeria and Salmonella and spore-forming Paenibacillus and Bacillus in commercial plant-based milk alternatives, Klaudia Bartula, Mäire Begley, Noémie Latour, Michael Callanan, FOOD MICROBIOLOGY, 2023. / ⁵Food waste per capita in the EU remained stable in 2021

By using aseptic packaging and technology, perishable foods:

can be stored at ambient temperatures

for 6-12 months

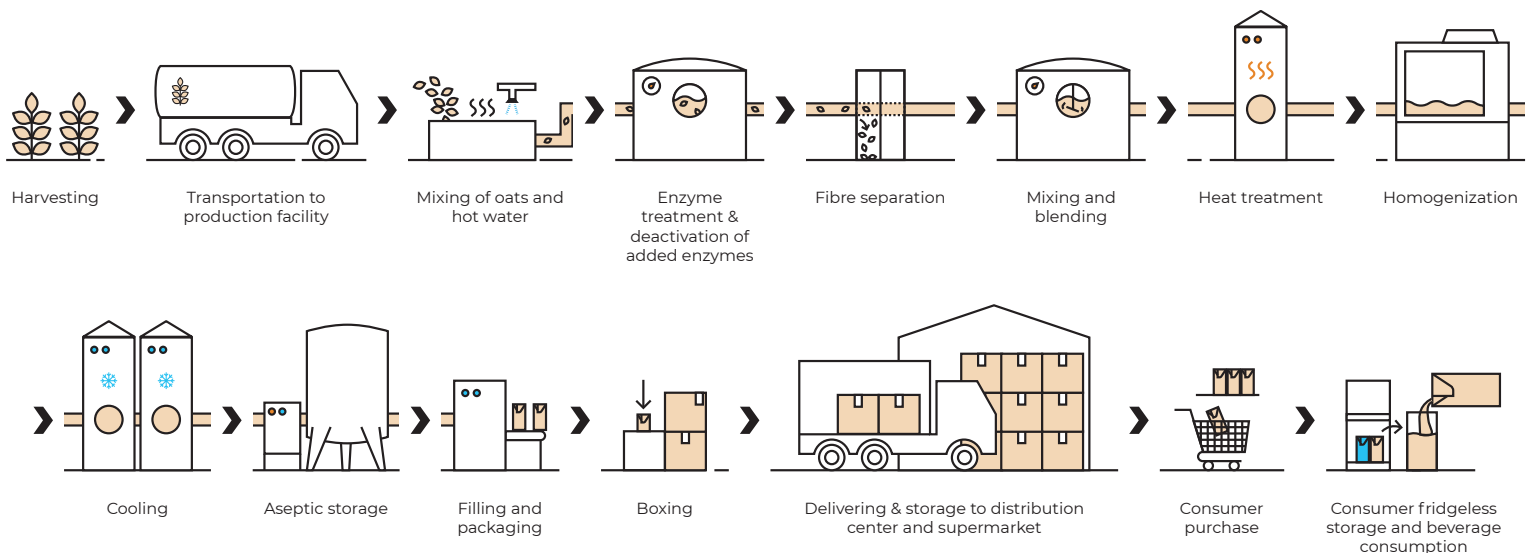
without the need for cold chain distribution

Plant-based beverages require specialised processing and packaging solutions.

Consumption of oat-based beverages in Europe increased by 50.8% between 2020 and 2022 – as consumers seek out health benefits as well as low environmental impact^{1,2}.

This is good news for the planet, but **key food safety and availability considerations remain**, both for plant-based beverages and their raw ingredients which are not naturally stable.

This diagram illustrates how plant-based beverage manufacturing works for oat-based production.³



The high share of renewable materials can help lower the carbon footprint of beverage cartons compared to many alternatives.⁴

Did you know ...



€ 1.96 billion by 2026

The European market for oat-based beverages is projected to reach €1.96 billion by 2026.⁵

Aseptic filling technology combined with innovative packaging, including aseptic beverage cartons, keeps food and beverages safe and flavourful up to 12 months, without the need of refrigeration or preservatives.

Tetra Pak[®]
PROTECTS WHAT'S GOOD

¹Nielsen, IRI, Kantar Q4 2022 – consolidated figures from: BE, IT, FR, ES, UK, DE, AT, CH, PO, PT, SE, NL, NO, DK / ²'How Oat Milk Can Help Save the Environment' Columbia University, 2021 / ³'White paper: Oat-based beverages – processing challenges & techniques' Tetra Pak, February 2020 / ⁴ Supporting Evidence - Environmental performance of beverage cartons, Circular Analytics, 2020 - Source study only covered packaging for milk and juices / ⁵Global Market Data: Segment Insights, Tetra Pak, 2022

Learn more about packaging perishable liquid foods

