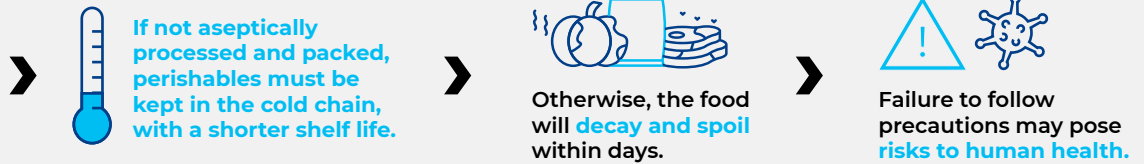


Aseptic packaging and technology: Making perishable foods safe and available

We rely on everyday food items for our daily nutrition. However, many of these food and beverages such as milk, juices and plant-based alternatives are highly perishable with short shelf lives, thereby presenting **many sustainability challenges across the value chain.**

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 Higher carbon footprint⁵

Single-use glass bottles	430g CO ₂ eq / l
PET bottles	156g CO ₂ eq / l
Reusable glass bottles	100g CO ₂ eq / l
Aseptic beverage cartons	83g CO₂ eq / l

4 Increased risk of additional food waste

127kg food waste per EU citizen per year⁶

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, Máire Begley, Noémie Latour, Michael Callanan, FOOD MICROBIOLOGY, 2023. / ⁵'Impact assessment study of an EU-wide collection for recycling target of beverage cartons', ACE, February 2022' / ⁶Avoiding food becoming waste in households - the role of packaging in consumers' practices across different food categories, Williams, Lindström, Trischler, Wikström and Rowe, Journal of Cleaner Production, 2020.

By using aseptic packaging and technology, perishable foods:

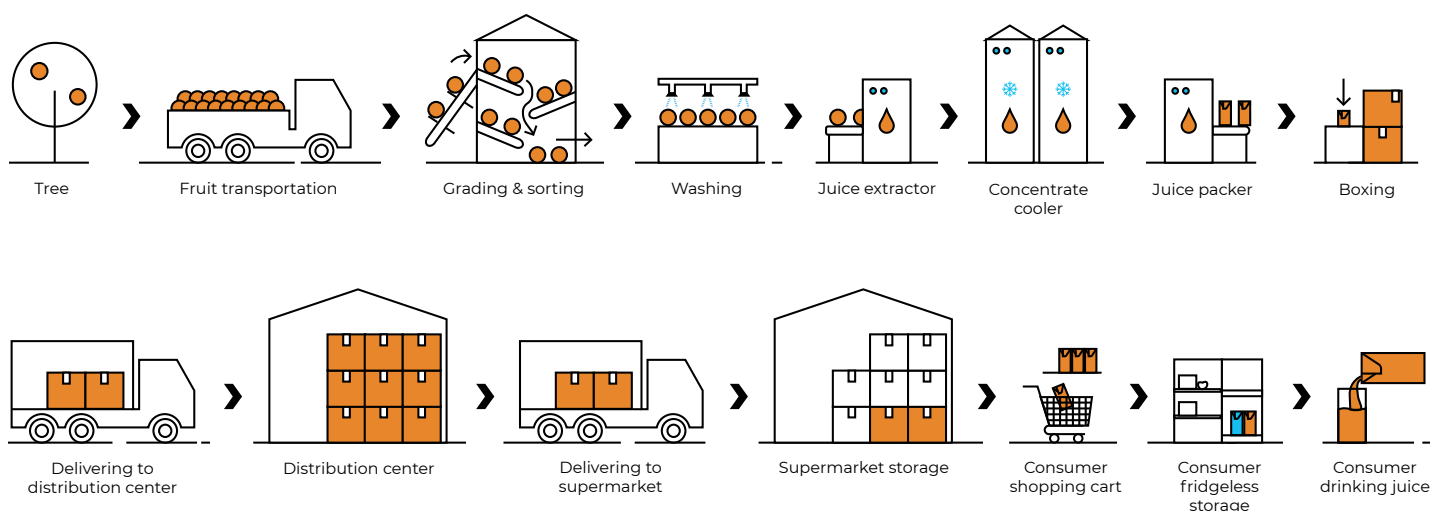
can be stored at ambient temperatures

for 6-12 months

without the need for cold chain distribution

Why do European juice and nectar producers prefer aseptic filling technology, combined with beverage cartons?

Aseptic juice processing and packaging systems **help extend the shelf life of perishable foods**, safeguarding against microbial spoilage and quality deterioration while minimising loss and waste along the packaging and distribution process.¹



The high share of renewable materials help beverage cartons feature a lower carbon footprint than many alternatives.³

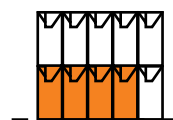
Did you know ...

In the EU beverage cartons are used for...



59% of juices²

40% of the total packaged juice volume is orange juice²



¹ Tetra Pak Orange Book / ² 2018 Liquid Fruit Market Report, AIJN, 2018 / ³ "Impact assessment study of an EU-wide collection for recycling target of beverage cartons", ACE, February 2022

Aseptic filling technology combined with innovative packaging, including aseptic beverage cartons, keeps food and beverages safe and flavourful for 6-12 months, without the need of refrigeration or preservatives.