



Best-practice line for traditional extracted soya beverages



Application

For production of traditional extracted soya beverages

Highlights

- Complete proven technical solution for traditional extracted soya beverages with higher yields than industry average and lower TCO
- Balancing taste and yield, to achieve right quality at optimum cost
- Flexibility to achieve different taste profiles, from beany to low beany, with same raw material
- Optimised and controlled production throughout the entire process
- Produces high-quality products that meet stringent safety standards
- Solution based on extensive knowledge and experience in key technologies: extraction, mixing, in-line blending, UHT, homogenisation and CIP
- Close to 4 decades of experience designing and delivering soya extraction solutions

An end-to-end line concept for every production need

This best-practice line is designed for production of soya beverages extracted from soya beans. The line includes extraction (grinding, trypsin inhibitor deactivation and fibre separation) and processing to achieve the desired soya base characteristics. Application of different process configuration – grinding, fibre separation, enzyme deactivation or grinding, enzyme deactivation, fibre separation) and different process parameters (beany to low beany) allows the flexibility to match your consumers' requirements. Post-extraction treatment in terms of powerful high-shear mixing helps create multiple product formulations from the soya base; sterilisation through UHT, followed by aseptic storage and aseptic filling ensure food safety and long life under ambient conditions.

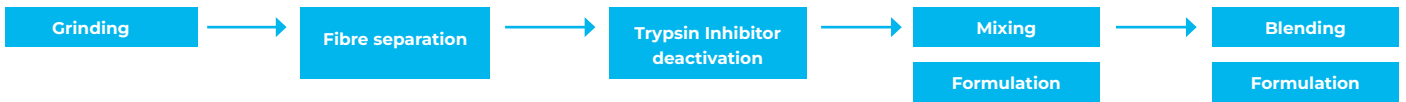
We provide a combination of processing technologies for the best-practice line for soya beverages based on extraction, including: Tetra Pak® Extraction System – Soya, Tetra Pak® Pasteurizer BF, Tetra Pak® High Shear Mixer, Tetra Pak® In-line Blender B, Tetra Therm Aseptic VTIS, Tetra Pak® Homogenizer, Tetra Pak® Aseptic Tank, Tetra Pak® CIP unit and Tetra Pak filling machines.

Line overview

Combining several processing technologies

Extraction in Tetra Pak® Extraction unit Formulation

- 1 Tetra Pak® Extraction unit – soya extraction 2 Tetra Pak® Double Decanter 3 Tetra Pak® Pasteurizer BF 4 Tetra Pak® High Shear Mixer 5 Tetra Pak® In-line Blender B



Process description

Tetra Pak® Extraction unit

Formulation

1 Grinding

- Dry grinding
- No soaking of beans required
- Whole or dehulled beans
- Rapid conversion from raw material to product
- Flexible for various needs
- NaHCO₃ dosing (optional)
- Grinding under water
- Continuous process
- Closed, hygienic system
- No soaking = lower costs:

With soaking

- » 3 to 4 hours lost production time
- » Major additional water consumption
- » Risk of lost beans at shutdown
- » Additional cost of effluent water treatment

Without soaking

- » No lost production time
- » No water needed for soaking
- » No risk of lost beans at shutdown
- » No additional cost for effluent water treatment

2 Fibre separation

Fibre separation – one decanter

- Low sediment content in product
- Consistent quality of soya base
- Continuous okara discharge
- CIP of decanter

Fibre separation – two decanters

- Rewash of okara to improve protein recovery
- Optimisation of first decanter for clarity of soya milk
- Optimisation of second decanter for dryness of okara
- Increase of yield with increase of water-to-bean ratio

3 Trypsin inhibitor (TI) deactivation

- Deactivation of TI for human consumption
- Using steam injector for direct steam injection
 - » Consistent temperature control
 - » Low thermal impact
 - » Minimum 20 hours before CIP
- Optional indirect TI deactivation increases energy efficiency

4 Mixing in Tetra Pak® High Shear Mixer

- Quick and effective mixing and processing
- Reduces air incorporation
- Ensures the right product quality
- Can reduce the need for functional ingredients

5 Blending in Tetra Pak® In-line Blender B

- Allows for more precise and efficient measuring of ingredients and the blended product
- Combines several liquid streams into a single large stream

UHT

6 Tetra Therm® Aseptic VTIS unit or Tetra Pak® Indirect UHT unit D with Tetra Pak® Homogenizer

7 Tetra Pak® Aseptic Tank

Cleaning

8 Tetra Pak® CIP Unit P

Filling

9 Tetra Pak filling machine



UHT

6 Continuous heat treatment with Tetra Therm® Aseptic VTIS unit or Tetra Pak® Indirect UHT unit

- Low overall heat load minimises impact on taste, colour and nutritional value
- Suitable for a wide range of dairy and plant-based products
- Highest operational efficiency for direct UHT systems on the market

7 Buffering in Tetra Pak® Aseptic Tank

- Handles high or low viscosity products, with or without fibres, with smaller or bigger particles
- Provides safe storage between processing and packaging, minimising product losses
- Cleaning in place and production monitoring enhance efficiency
- Can be customised with e.g. agitators and cooling jacket, to further increase safety and quality
- Available as a separate unit or as a functional component in integrated lines

Cleaning

8 Cleaning with Tetra Pak® CIP unit P

- Simple and modular, easy to install and use with premium performance
- Cost effective, enables economical use of water and detergents
- Flexible – adapt cleaning programs to meet specific production needs

Filling

9 Filling with Tetra Pak filling machine

- Highest package output in the industry
- Lowest possible operational cost
- High food safety (unique aseptic process FDA filed)

Automation solutions for total control and top performance

- Maximise efficiency and enable future-proof flexibility
- Enable complete control with full traceability
- Cut human error to a minimum and streamline your entire operation

Tetra Pak® Services

We provide customised service solutions maximise your operational excellence, minimise your cost and environmental impact, and ensure the right product quality every time, throughout the lifecycle of your operation a complete range of services including:

- Automation services
- Production improvement services
- Installation services
- Maintenance services
- Parts and logistics services
- Quality management services
- Remote services
- Training services

Guaranteed performance on parameters that matter

We guarantee the performance we promise, with key performance indicators based on your production scenario and predefined in a contractual agreement, covering for example:

- Protein level
- Protein yield
- Product quality (sediment content)
- Production time
- Capacity