



Future proofing yogurt production

– reducing your costs and environmental footprint

Carin Cronström

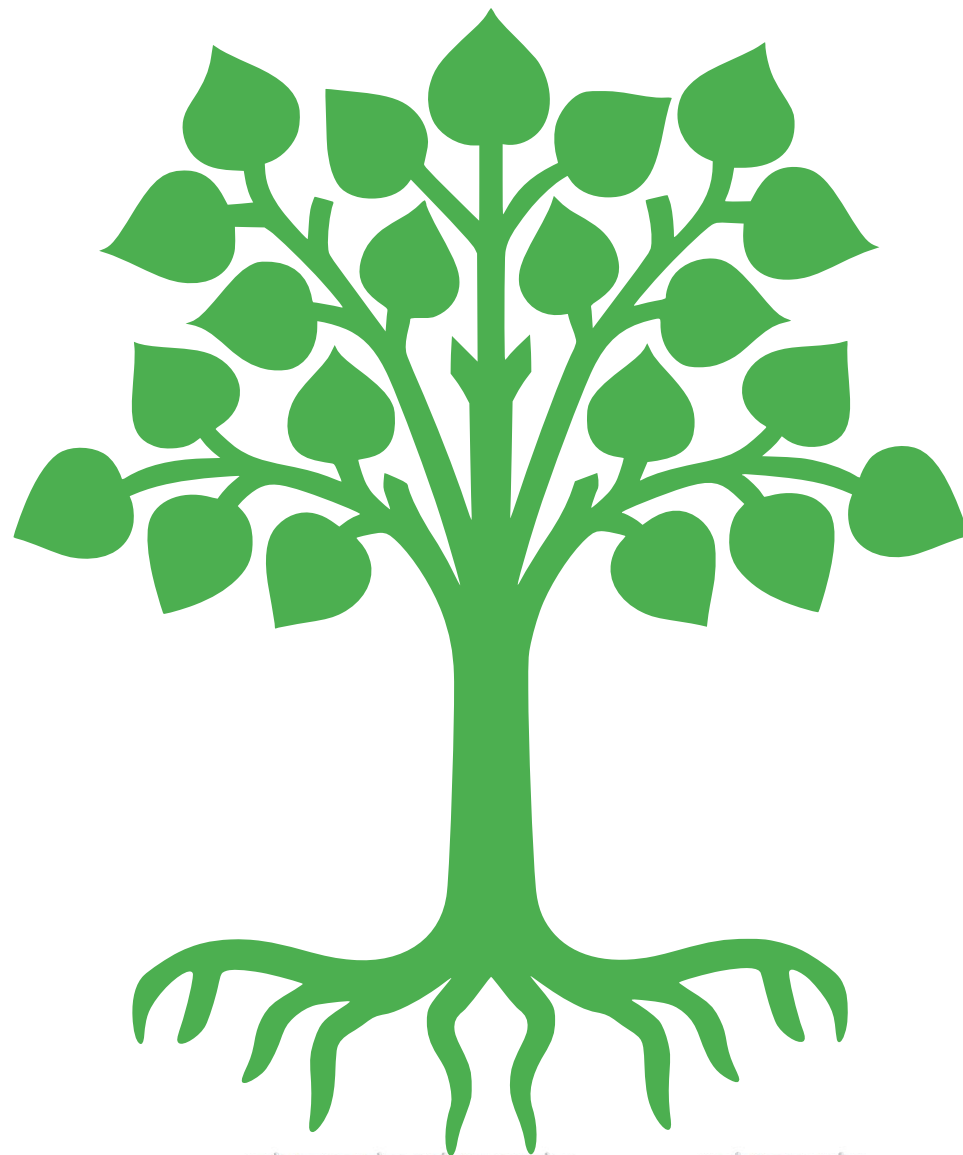
Line Solution Manager – Chilled and Fermented Dairy

 **Tetra Pak®**
PROTECTS WHAT'S GOOD



The amazing world of yoghurt...

...and other fermented dairy products





A need for change



Consumer concerns about the future of the planet are on the rise



Margins are under pressure – costs continue to increase



Quality and innovation remains strong drivers





High expectations on the industry



Be sustainable



Provide affordable products



With quality and differentiated product range

“You can’t get different results by doing things the same way”

Richard Moran





Greater sustainability in your operations

Tetra Pak commitment



Avoid
Recover
Optimise
Neutralise



Our **2030** ambition
Best-practice line performance:

 **50%** reduction
vs. 2019

 **50%** reduction
vs. 2019

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vs. 2019



Examples of Equipment, Lines, Solutions and Services

...for more sustainable yoghurt production

Equipment

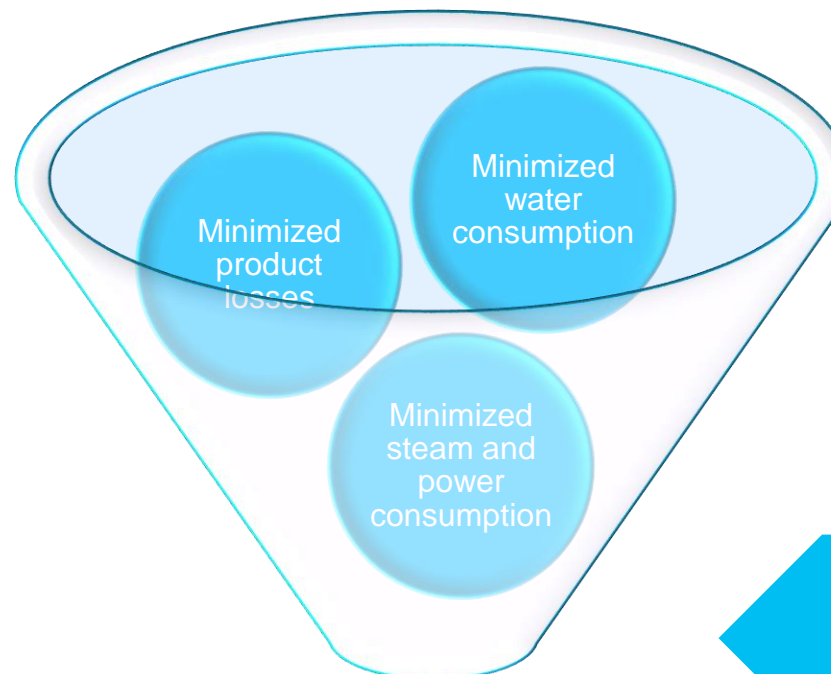
Tetra Pak® Pasteurizer

Tetra Pak® Homogenizer

Tetra Pak® High Shear Mixer

Tetra Pak® Inline Blender

Tetra Pak® PlantMaster



**SUSTAINABILITY PERFORMANCE
AND
OPERATIONAL COST REDUCTION**

Solutions, Services

White water recovery

CIP detergent recovery

Service: VeriPlant (PTS)

Upgrade: IntelliCIP

Best-practice line
for yoghurt milk with
OneStep technology





Best-practice line for yoghurt milk with OneStep technology vs conventional line

- ✓ 40% Lower investment cost
- ✓ 30% Lower running costs (utilities)
- ✓ 25% Reduced carbon emissions
- ✓ 50% Lower water consumption
- ✓ 50% Less floor space needed



... while making **zero**
compromises on product
quality or flexibility

Based on production scenario with line capacity 15 000 L/h, 8+8 h production/day, 300 days/year.
Scope of comparison: from feed of raw milk to output of yoghurt milk. Equipment for powder handling is not included.
Cost base: Electricity 0.18 EUR/kWh, Steam 0.042 EUR/kg, Raw milk 494 EUR/1000L
CO2 emissions are based on:
• electricity production generating 0,477 kg CO₂ equivalents per kWh (World average)
• heat production generating 0,202 kg CO₂ equivalents per kWh (Natural gas)



How it works

Conventional preparation of yoghurt milk

We now remove
the need for this
equipment ...



Pre-treatment



Mixing



Yoghurt Milk Treatment

...and integrate all key process steps in a continuous processing module



How it works

Best-practice line for yoghurt milk with OneStep technology

Separator, mixer and standardizer unit are integrated in yoghurt milk pasteurizer.

Unique design of Tetra Pak Pasteurizer D enable yoghurt milk with OneStep technology



Dry ingredients prepared in batch and continuously added to skim milk at Tetra Pak High Shear mixer



Making zero compromises on product quality

Three challenges

1

Superior dispersion of powders with minimum incorporation of air

- ▶ Tetra Pak High Shear Mixer with vacuum

2

Securing correct composition of yoghurt milk

- ▶ Batch preparation of powders
- ▶ Direct in-line fat standardization

3

Optimal treatment of the formulated yoghurt milk

- ▶ Control of temperature and flow throughout the process



Inline addition of powder

Tetra Pak High Shear Mixer - batch type for continuous production

Superior dispersal of powders

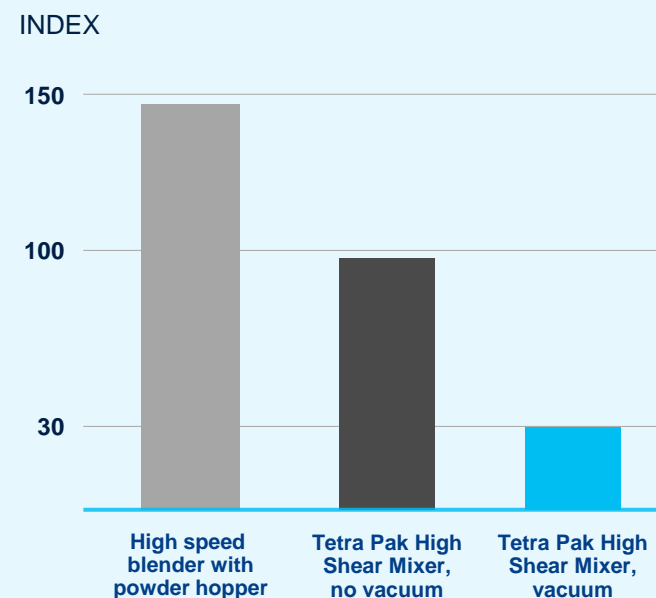
Vacuum to minimize air incorporation

Validated performance of powders



• Patented outlet

Air in the product





Securing correct composition of yoghurt milk in the fermentation tank

**DRY AREA /
PREWEIGHED**

Bag tipping unit



Continuous process but...

**Batch dosing
of powders**

Powder for a fermentation tank
is prepared in a batch hopper
and added at controlled rate to
**secure target product
composition in fermentation
tank**

WET AREA

Tetra Pak®
High Shear Mixer

Securing correct composition of yoghurt milk in the fermentation tank

Tetra Pak Standardization unit with SpotOn-functionality

Detecting and handling disturbances from:

- ▶ Separator discharges
- ▶ Change of fermentation tank



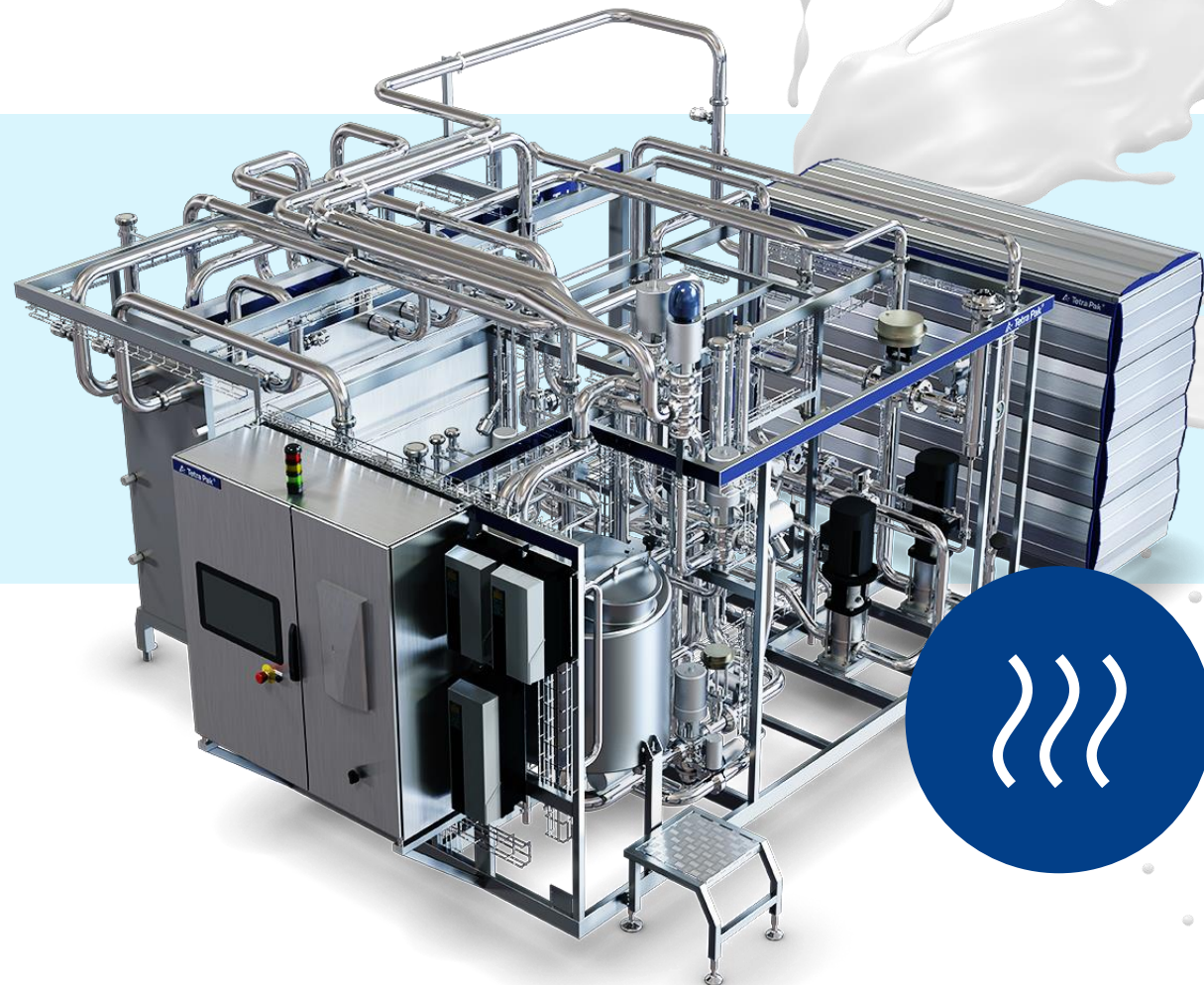


Optimal treatment of the formulated yoghurt milk

Precise control of temperatures and holding time
with Tetra Pak Pasteurizer D

**Full integration
and control of
all process steps**

With guaranteed
performance from raw
milk to yoghurt milk.





From raw milk to yoghurt milk with OneStep technology

innovation with proven performance

✓ Proven in commercial operation

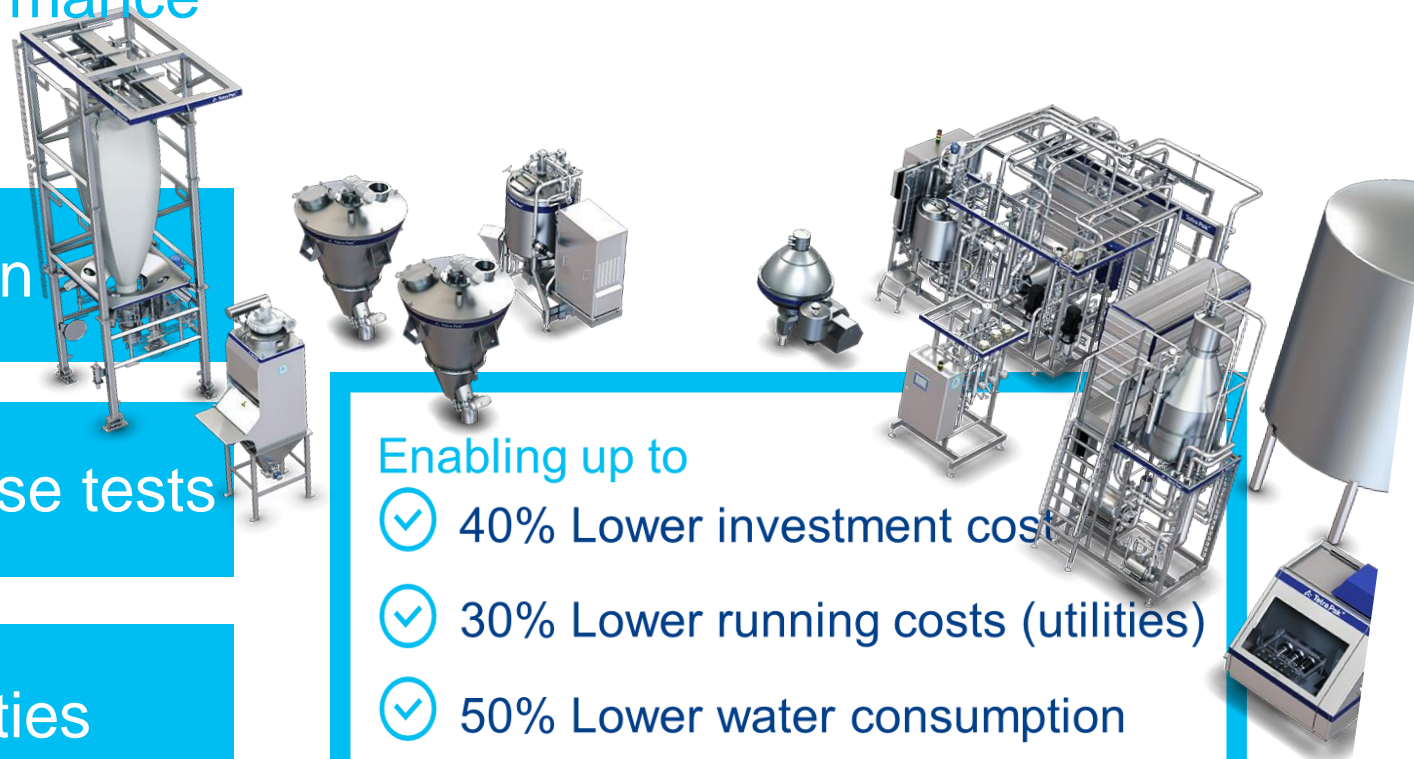
✓ Technology validated in in-house tests

✓ Applicable for all yoghurt varieties

✓ Patent pending

Enabling up to

- ✓ 40% Lower investment cost
- ✓ 30% Lower running costs (utilities)
- ✓ 50% Lower water consumption
- ✓ 25% Reduced carbon emissions
- ✓ 50% Less floor space needed
...compared to conventional line





Future proofing yoghurt production

... in small steps or giant leaps

Equipment

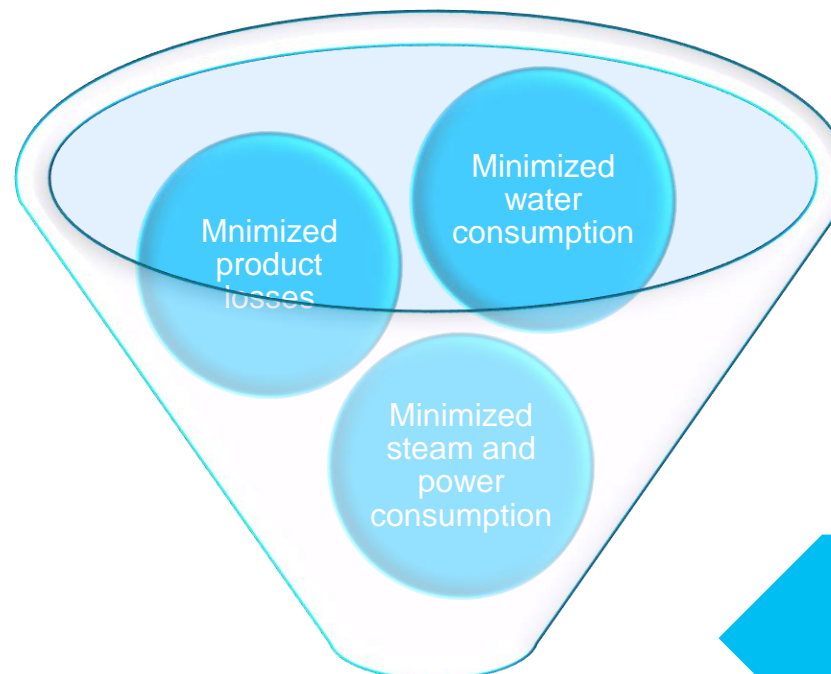
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Service: VeriPlant (PTS)

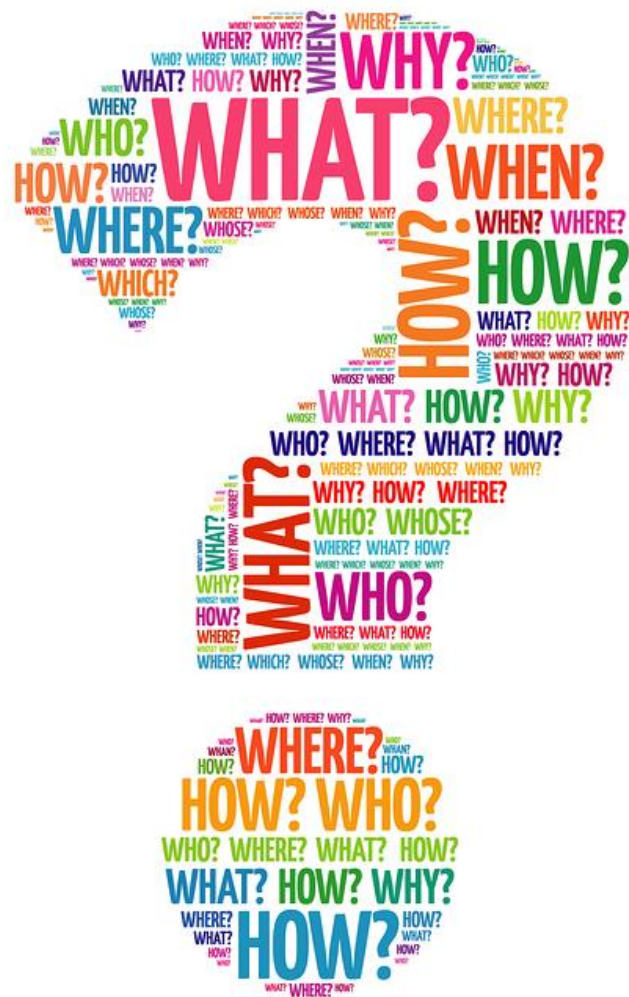
Upgrade: IntelliCIP

**Best-practice line
for yoghurt milk with
OneStep technology**





Questions?





Tetra Pak is a world leading food processing and packaging solutions company. Working closely with our customers and suppliers, we provide safe, innovative and environmentally sound products that each day meet the needs of hundreds of millions of people in more than 160 countries. With more than 25,000 employees around the world, we believe in responsible industry leadership and a sustainable approach to business.

www.tetrapak.com