

CraftSense



# Freshness sells Practical approaches to improve beer flavour stability



# Who is this guy?



About me:

Dr.-Ing. Tuur Mertens  
Belgian | Beer enthusiast | Consultant

- Did a PhD on improving beer flavour stability
- Developed a commercial product in the process (MashLife)
- Firm believer that shelf-lives should be long  
– and conference talks short

So... let's do just that!



# Why beer freshness matters

Revenue.  
Reputation.  
Flavour.



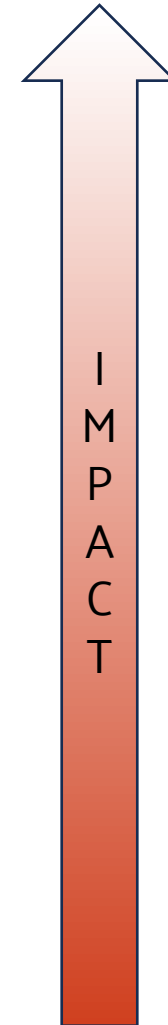
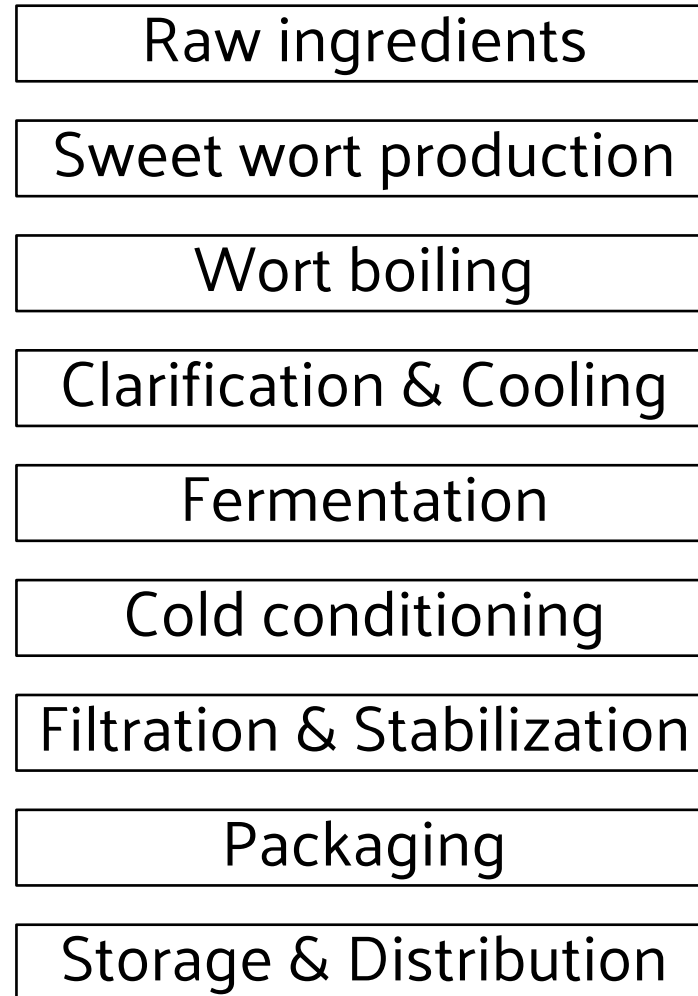
# Beer staling

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## Main culprits:

- Heat
- Oxygen
- Light
- Metal ions
- Time

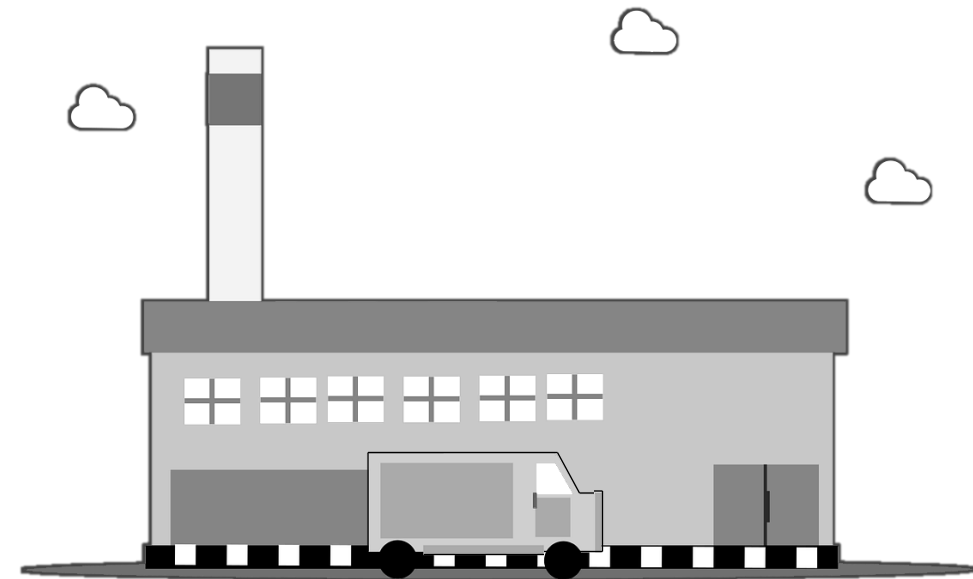
## Production process:



# Storage & Distribution (finished product)

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- Maintain a cold chain
- Protect from light
- Minimize vibration
- Implement FIFO (“First-In, First-Out“)



# Packaging

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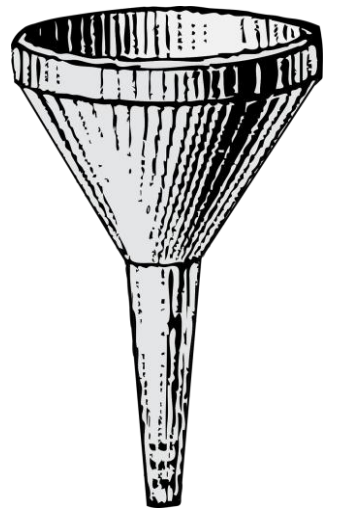
- Minimize 'total package oxygen' (TPO)
- Use innovative closures
- Purge with inert gas
- Cap on foam
- Optimize pasteurization



# Filtration & Stabilization

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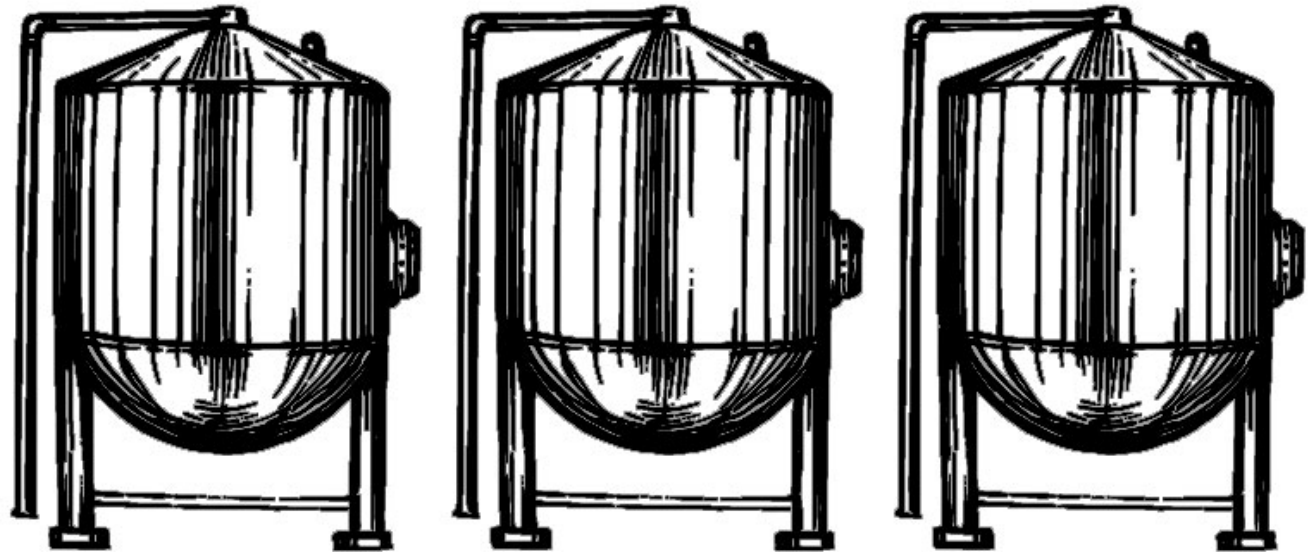
- Avoid metal pickup during filtration



# Cold conditioning

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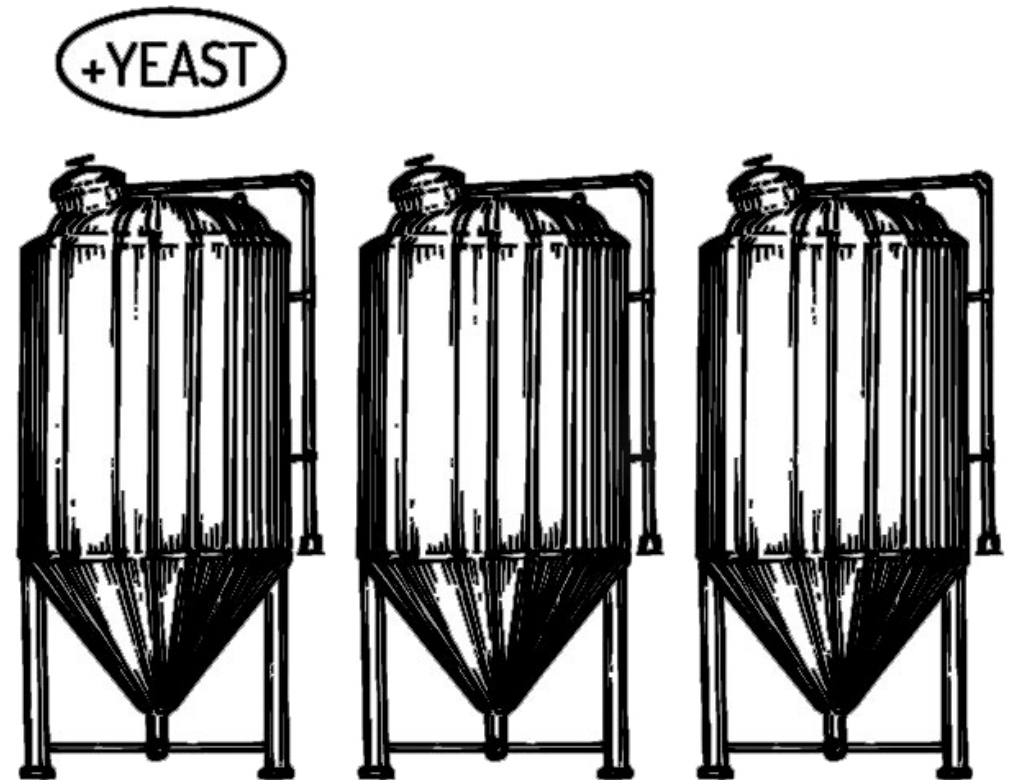
- Shorten contact time
- Minimize tank headspace



# Fermentation

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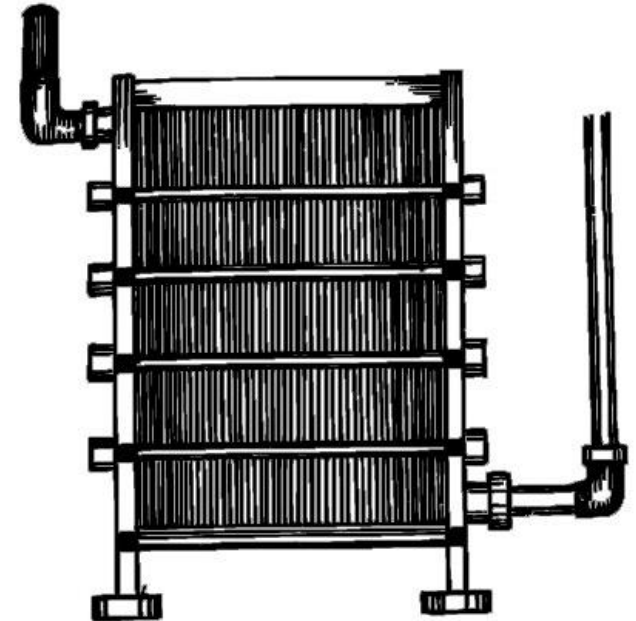
- Ensure vigorous fermentation
- Promote natural antioxidants
- Strict oxygen control
- Temperature control



# Clarification & Cooling

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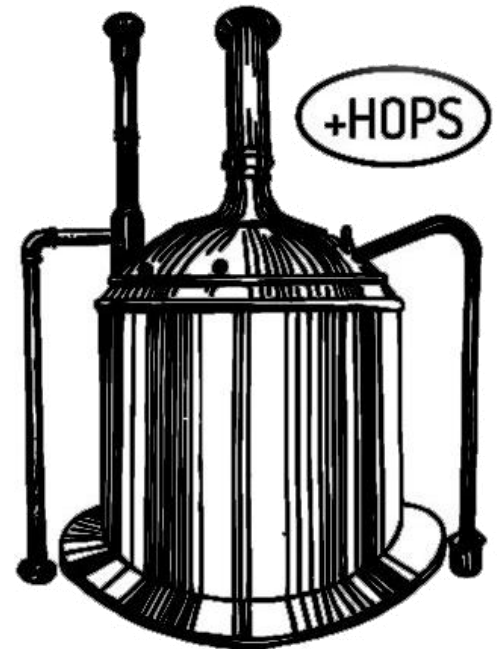
- Minimize thermal load
- Rapid cooling
- Efficient trub removal



# Wort boiling

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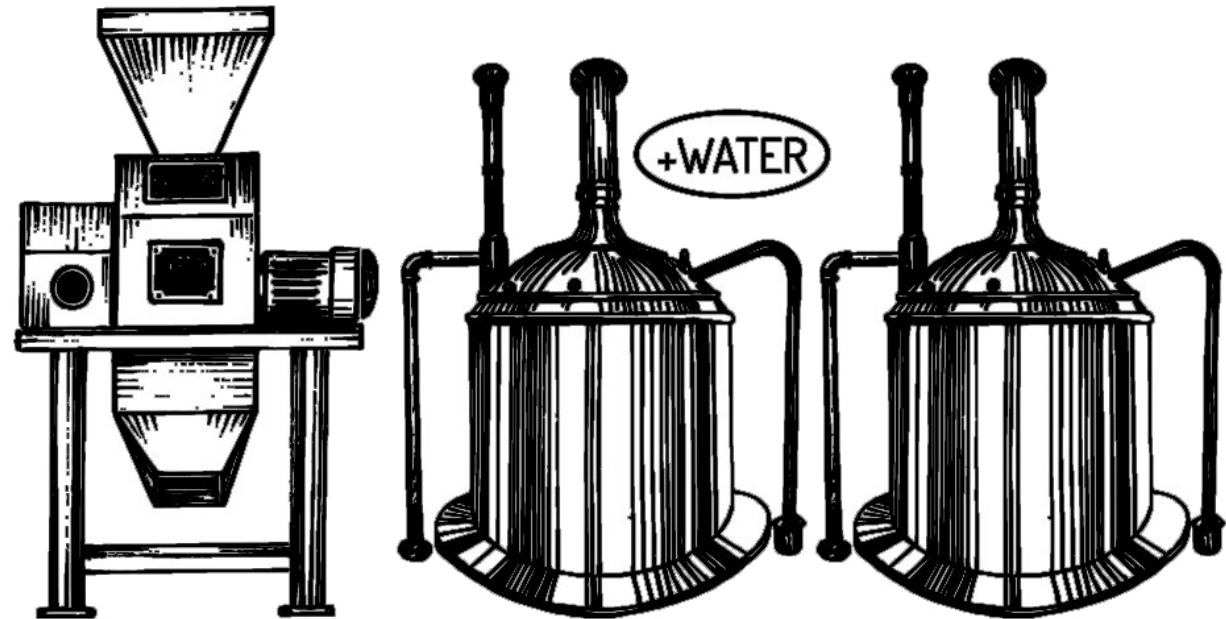
- Optimize evaporation
- Minimize thermal load
- Incremental hopping



# Sweet wort production (milling, mashing, lautering)

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- Low-oxygen milling
- Avoid husk damage
- Inhibit lipoxygenase (LOX)
- Control mash pH
- Limit 'hot side aeration' (HSA)
- Add natural chelators



# Raw ingredients (water, malt, hops)

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- Malt selection
- Hop quality
- Water treatment



# Key takeaway: Good beer is fresh beer

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- Protect freshness at every step of the brewing process by controlling:
  - Heat
  - Oxygen
  - Light
  - Metal ions
  - Time



# Q & A



**Expert consulting for breweries  
& food-tech companies**

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[craftsense.net](https://craftsense.net)