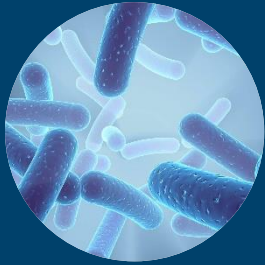




# SDT SPRING CONFERENCE 2024 – FERMENTED CREAMS

Kirsten Lauridsen (MSc) – Principal Designer I – Brabrand, Denmark

# AGENDA – FERMENTED CREAM



**Starter culture**  
**No gas vs gas  
formation**



**Texture creation**

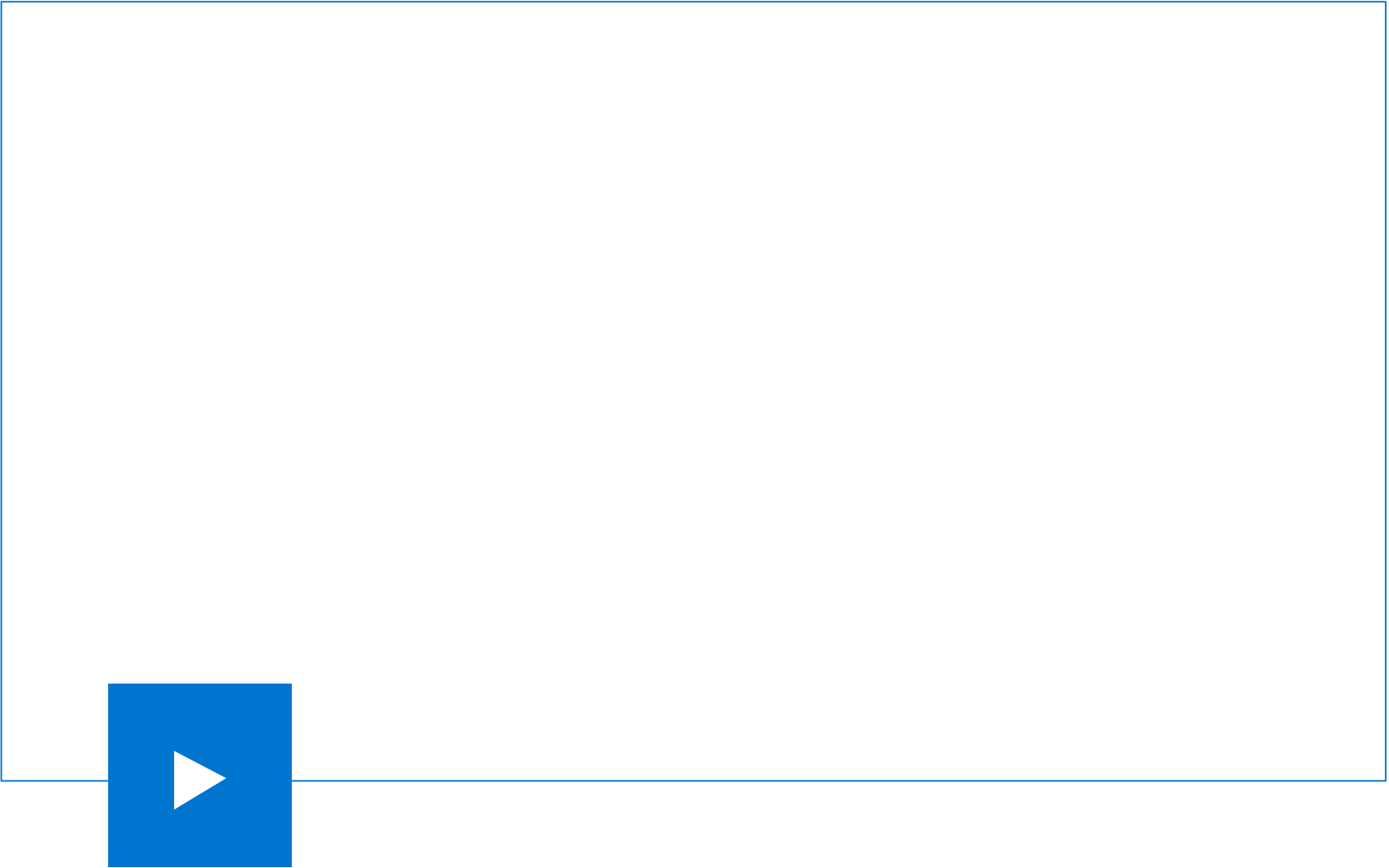


**Shelf-life  
extension**  
**Taste stability**



**Other mesophilic  
products**

Watch the video below to learn about the ways we can help you ignite dairy delight.



# ROLE STARTER CULTURE

**Control acidification**

**Texture creation**

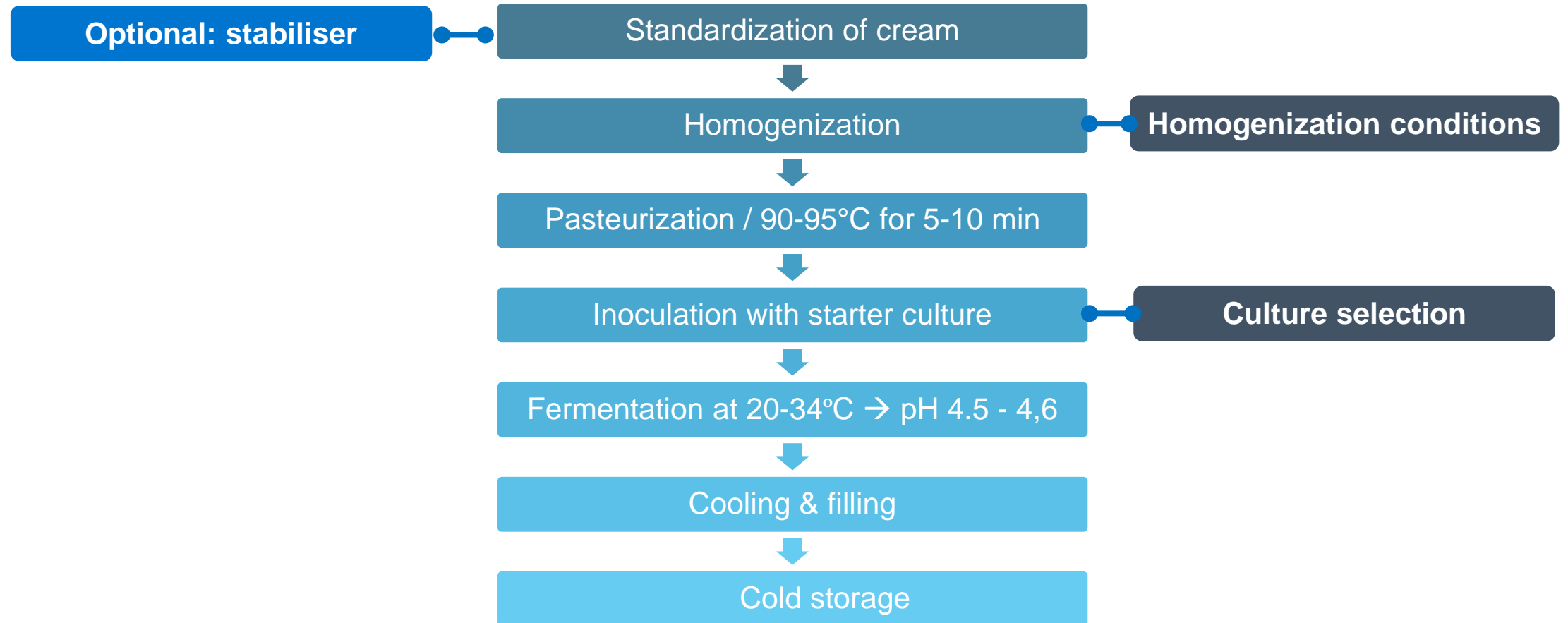
**Flavor production**

**Gas formation (optional)**

**Taste stability**



# FREMENTED CREAM PROCESS





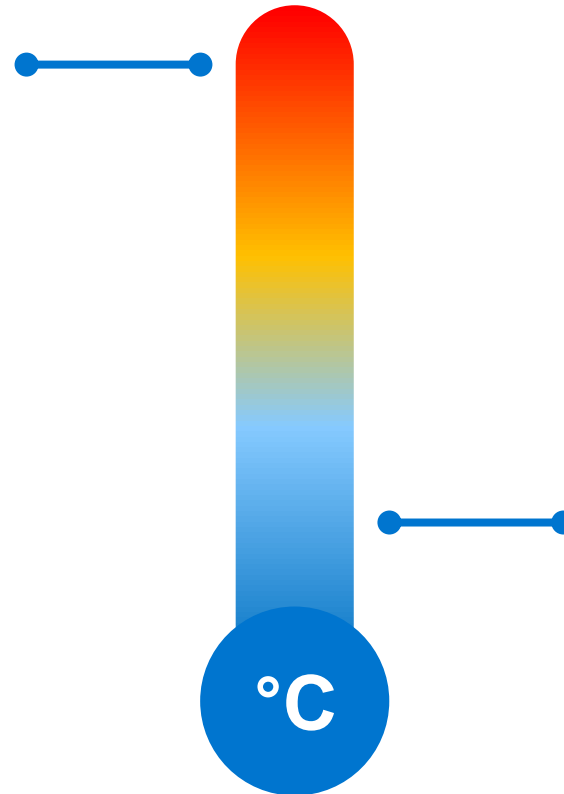
# STARTER CULTURE MESOPHILIC VERSUS THERMOPHILIC

Basics – bacteria with different preferences

**Thermophilic [34-43°C]**

**Products:**

- Stirred yogurt
- Set yogurt
- Drinking yogurt
- Concentrate yogurt

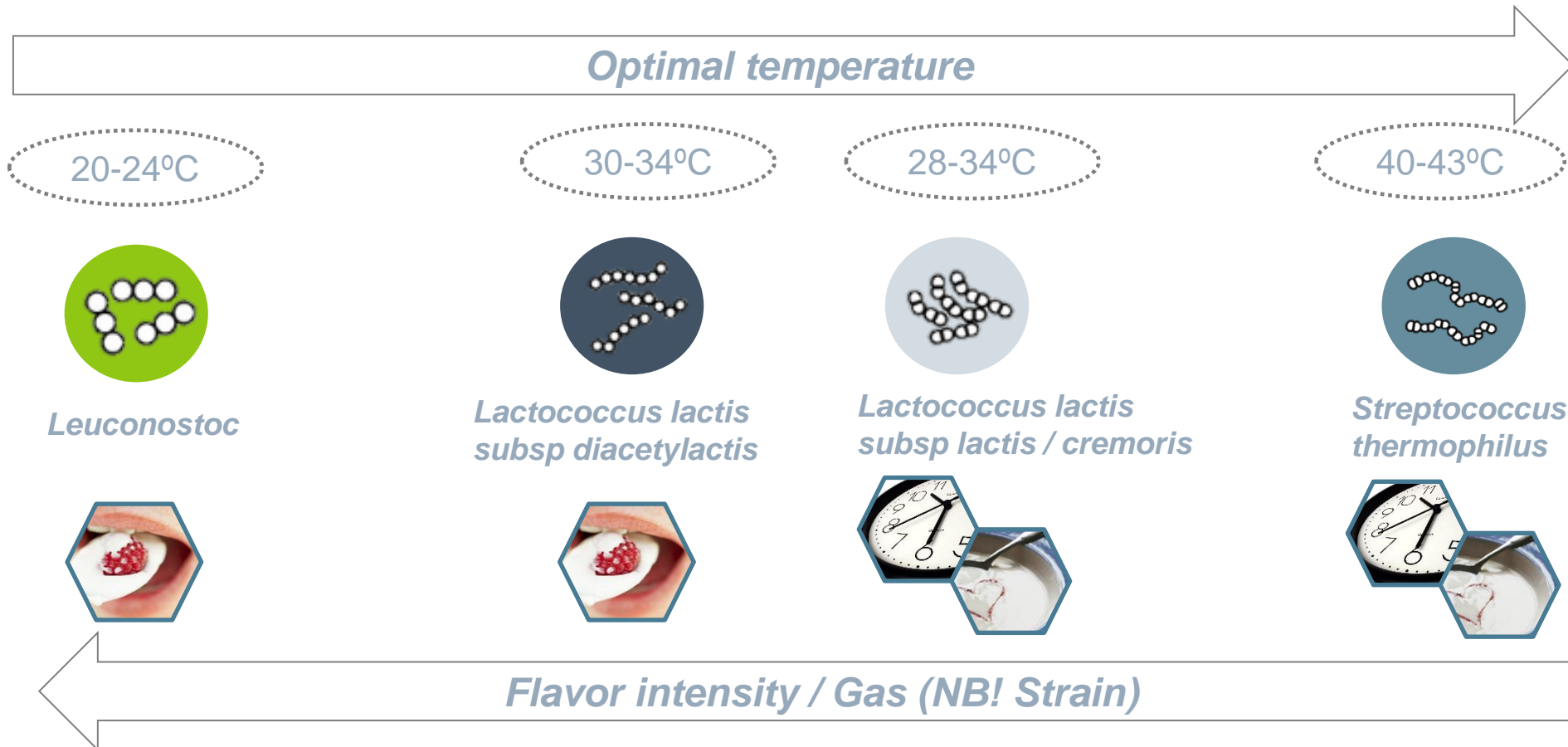


**Mesophilic [22-36°C]**

**Products:**

- Fermented cream
- Quark/fresh cheese
- Kefir
- Buttermilk

# TYPICAL STRAINS IN FERMENTED CREAM



LEGEND:  
NB! Strain dependent!



Flavor /  
Gas

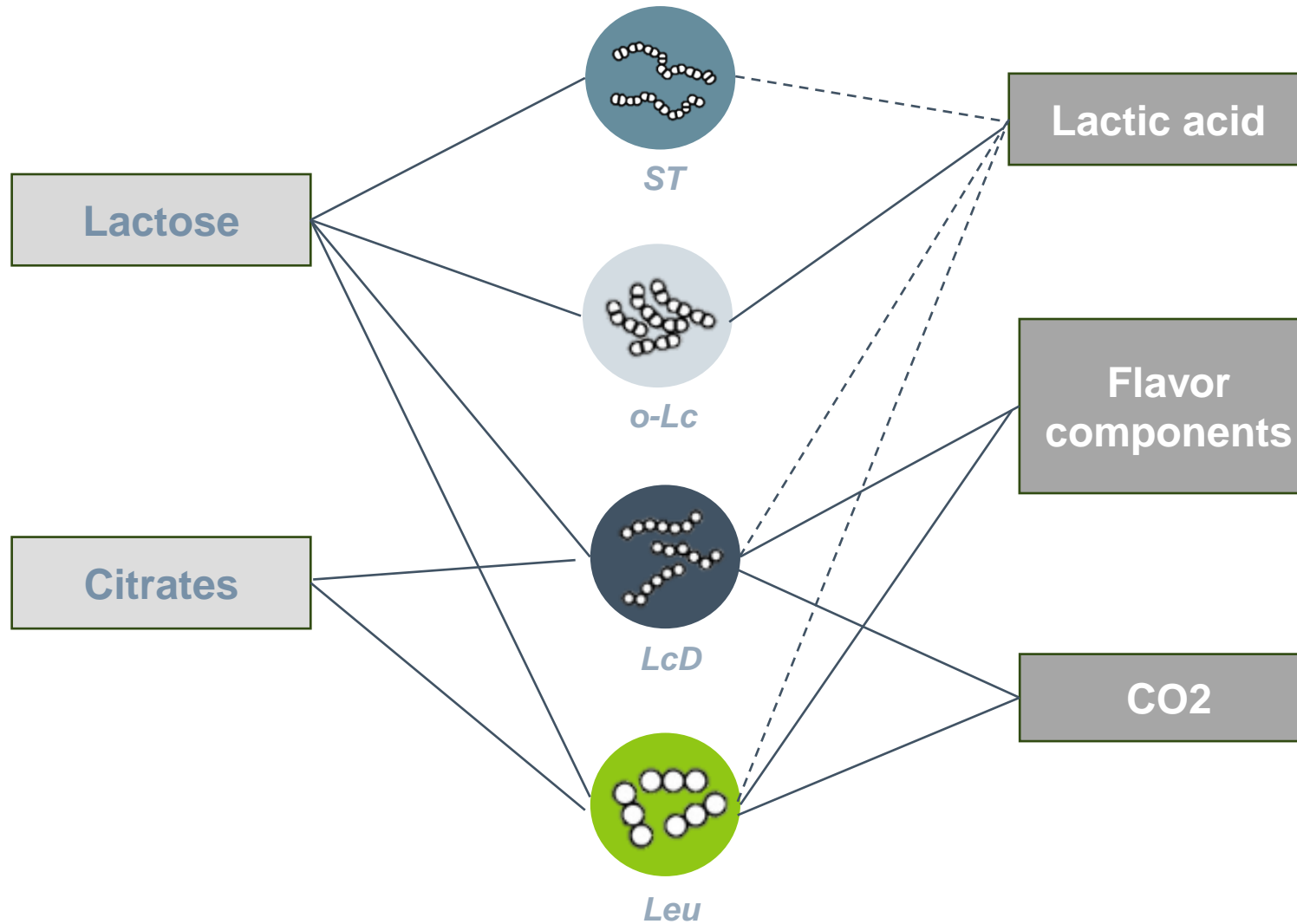


Texture/  
Smoothness



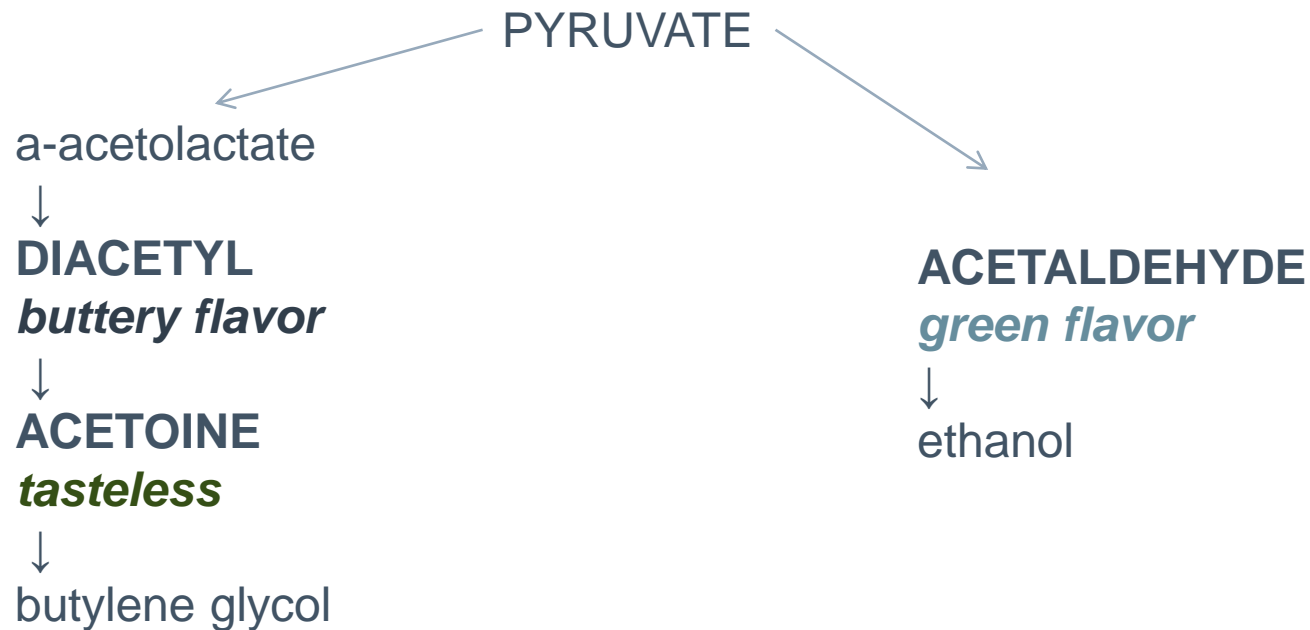
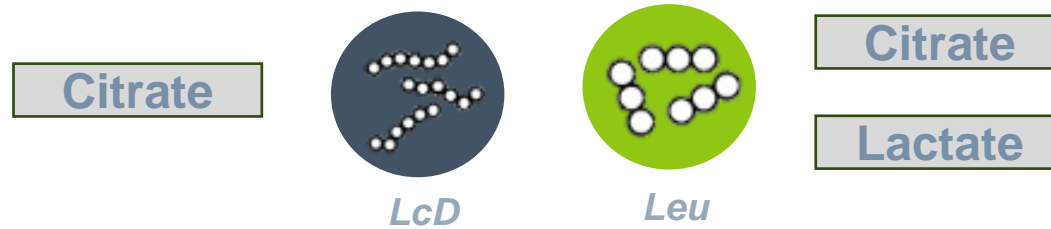
Speed

# FLAVOR & GAS FORMATION

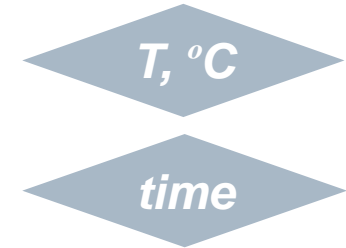




# FOCUS ON FLAVOR COMPOUNDS



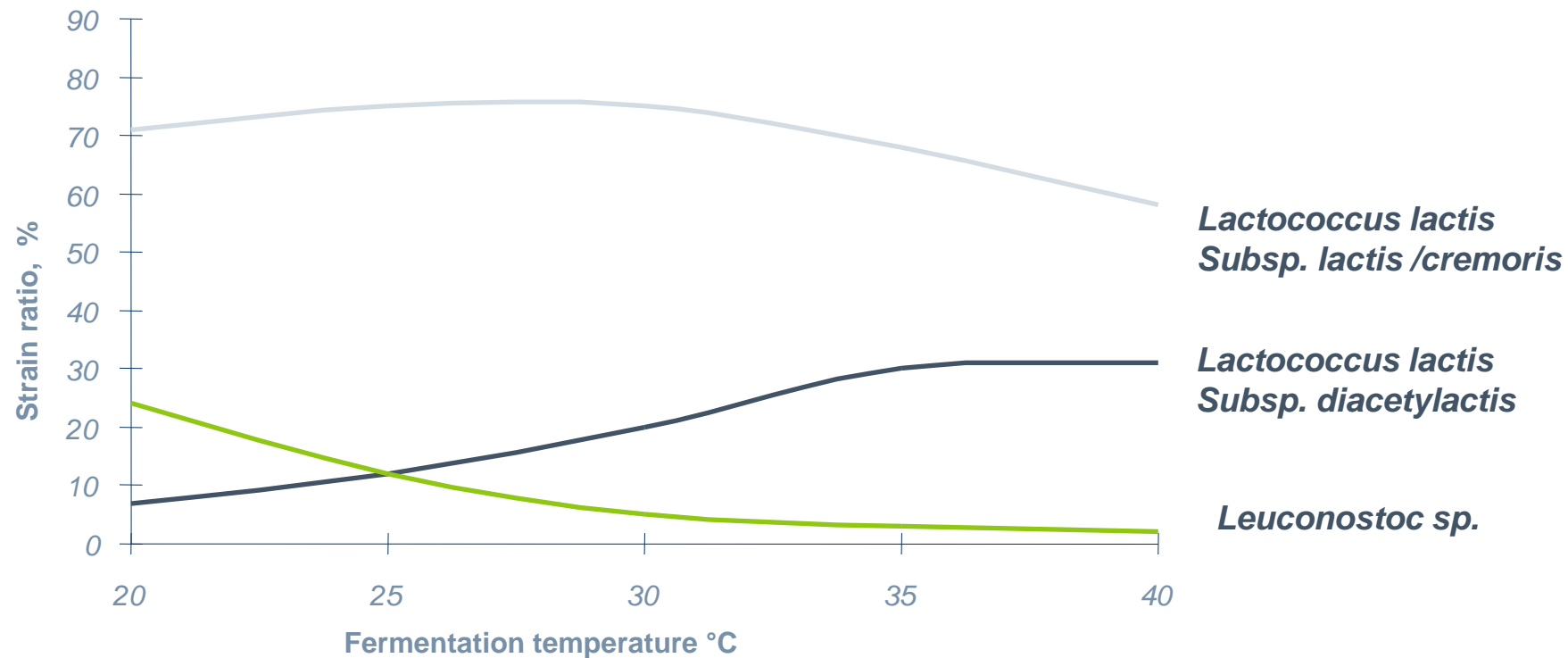
Process factors:



# ACIDIFICATION CONDITIONS ARE CRITICAL FOR FLAVOR!

Flavor and gas production in your product depend on:

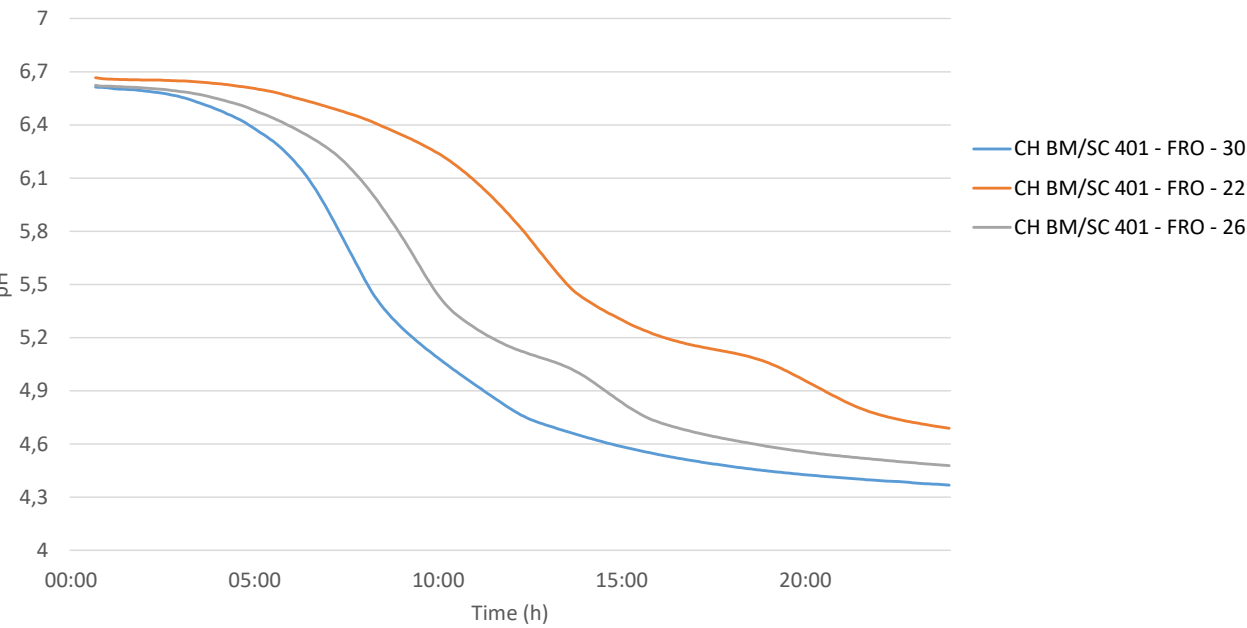
- Minor difference in **fermentation temperatures**
- ... that cause differences in strain ratio



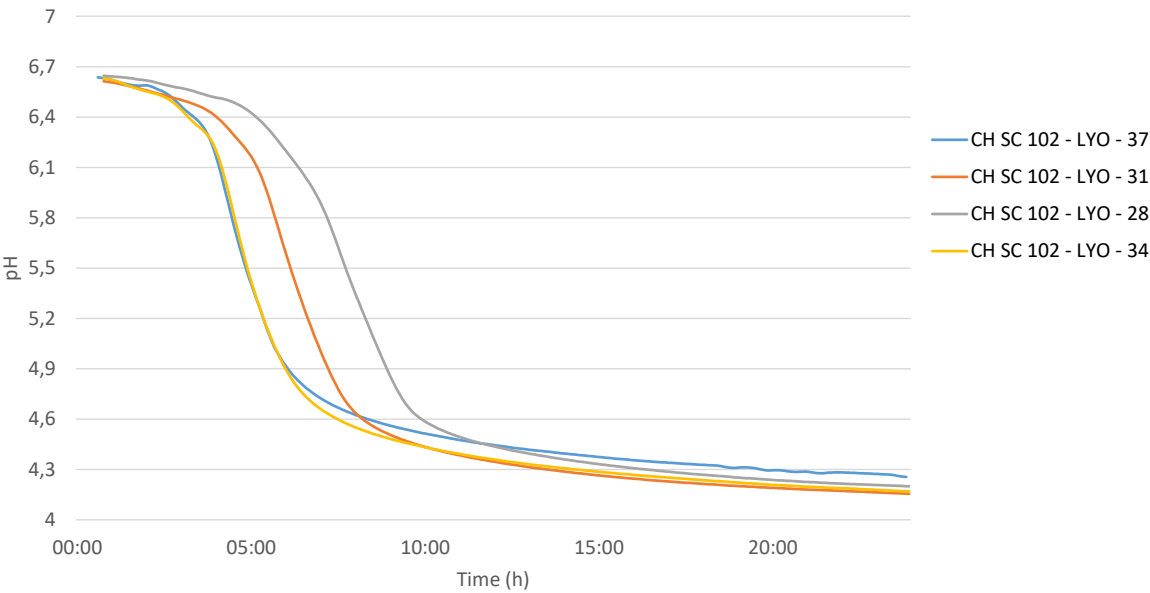
# FERMENTATION TIME IN FERMENTED CREAM

Different starter culture will have different fermentation behaviour

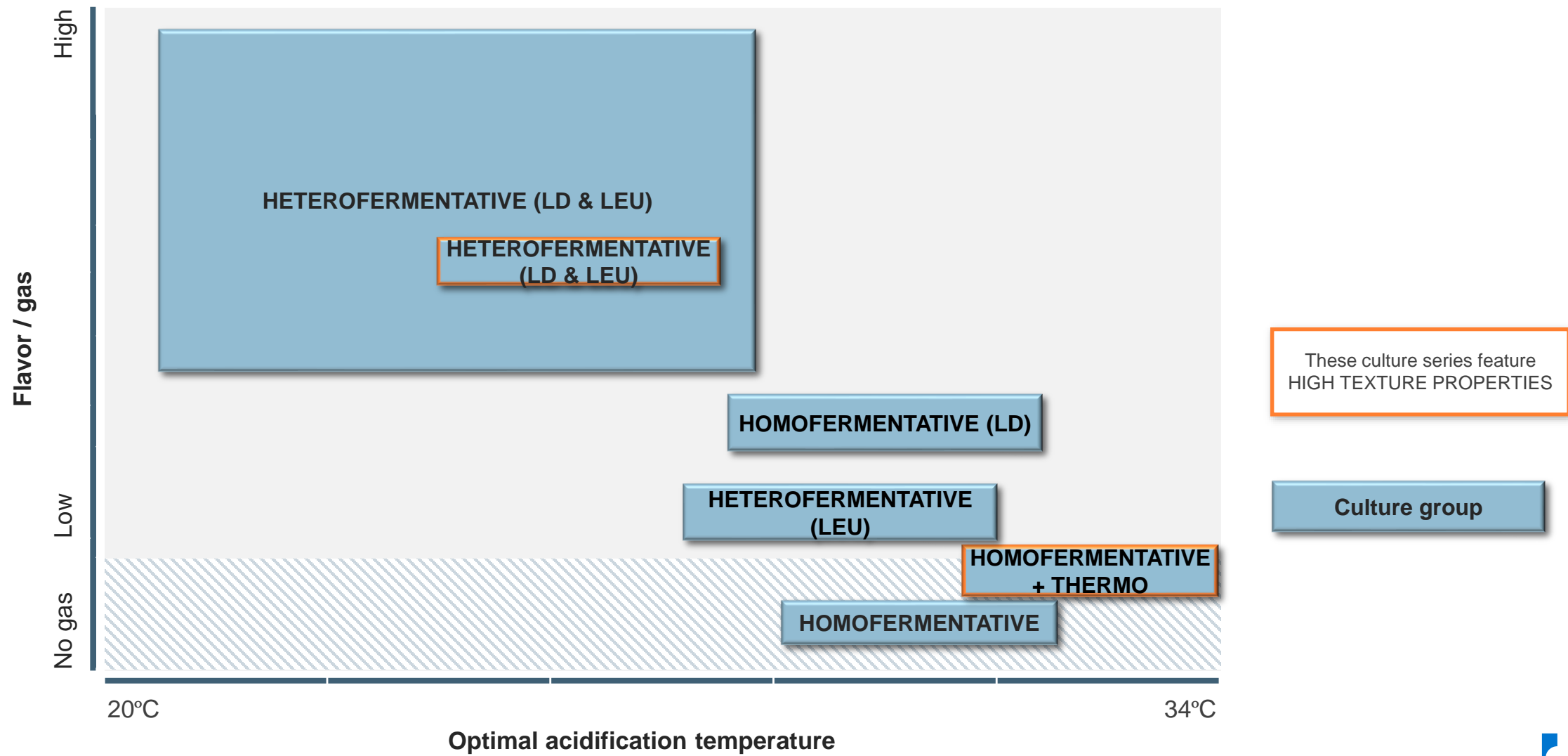
CINAC acidification curves



CINAC acidification curves



# CULTURE GROUPING MESOPHILIC TYPES



# TEXTURE CREATION

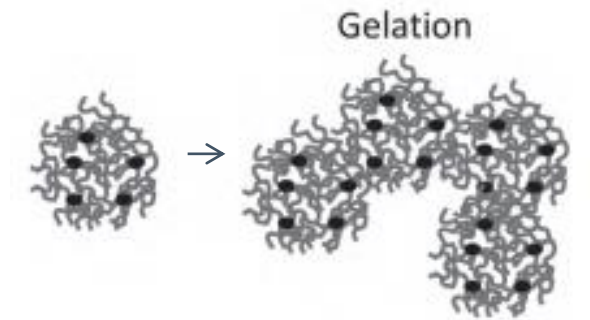
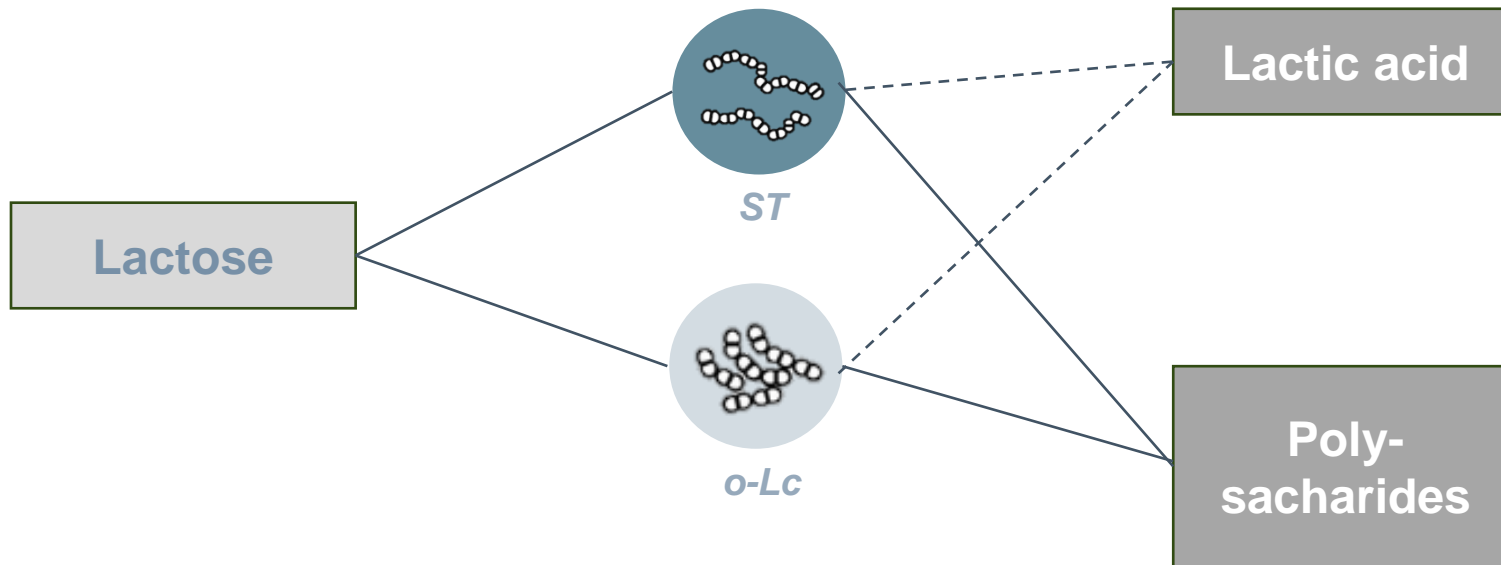
**Fermentation temperature**

**Starter culture w. EPS**

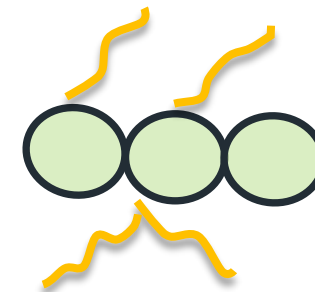
**Season variation**



# TEXTURE FORMATION



**Capsular  
EPS**



**Non-  
capsular  
EPS**



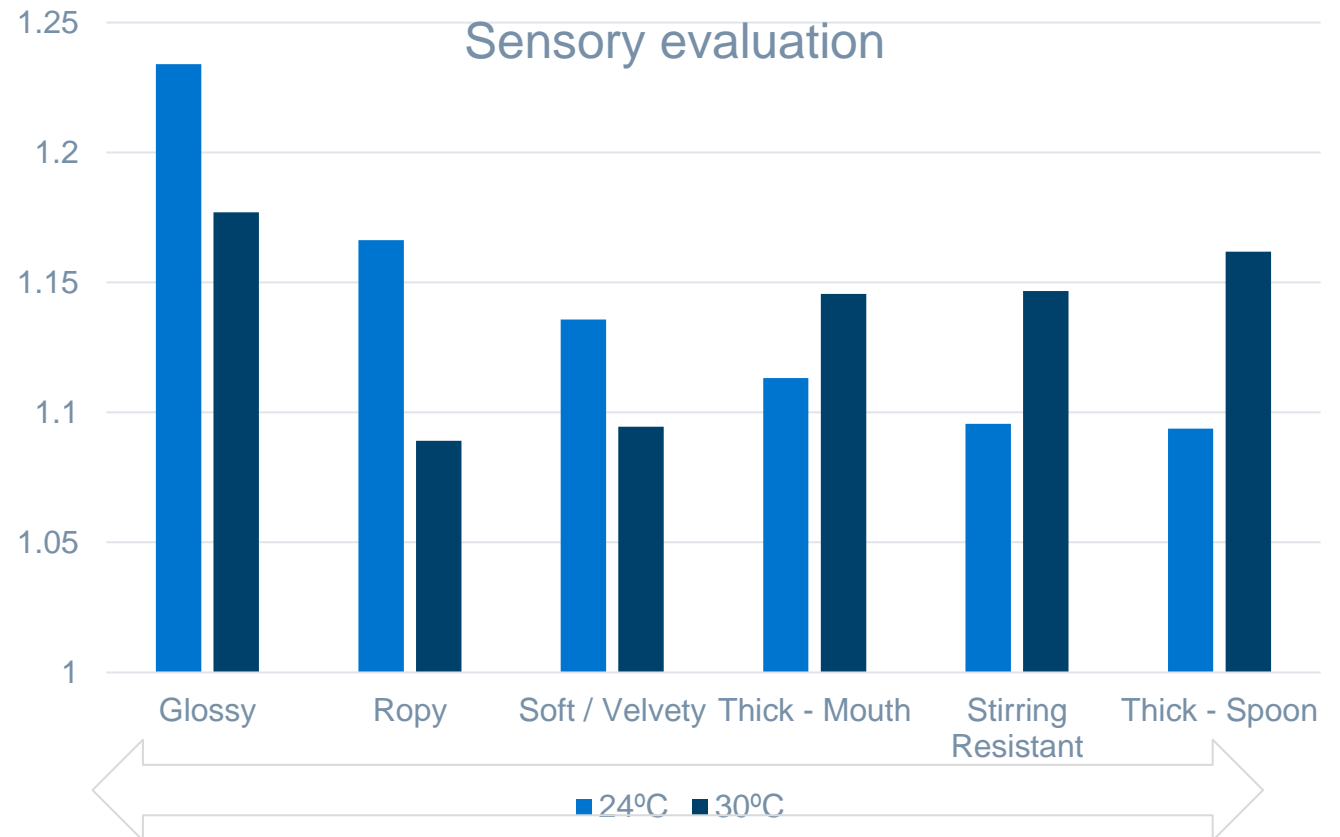
# MESOPHILIC TEXTURIZING STRAINS: WHAT IS YOUR OPTIMAL TEMPERATURE?

**Firm / Thick texture**

- > Increase fermentation temperature

**Glossy appearance / Velvety texture**

- > Decrease fermentation temperature



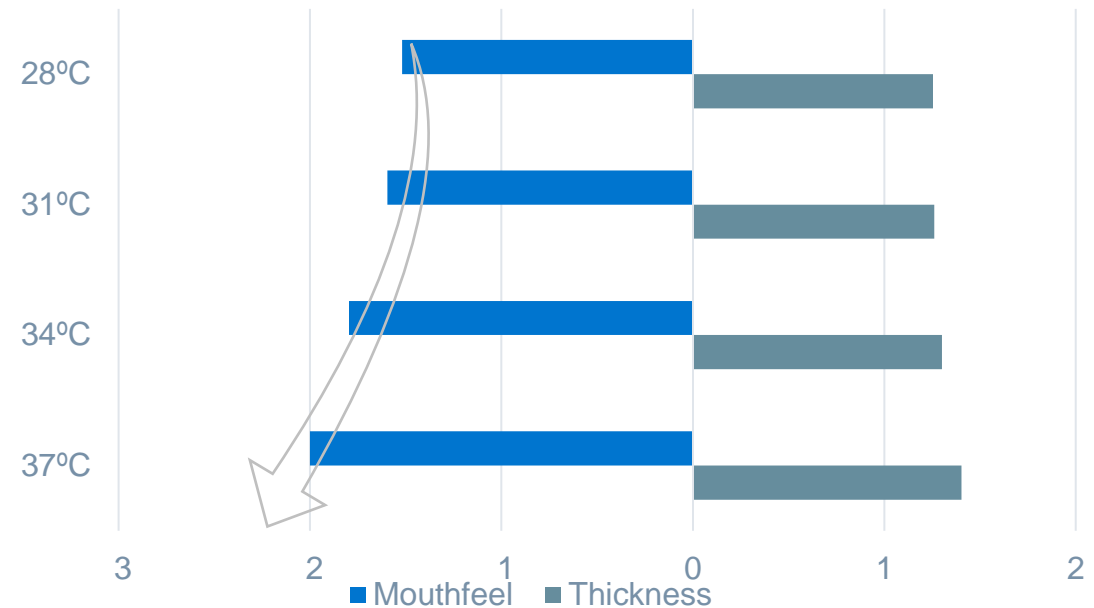
# TERMOPHILIC TEXTURIZING STRAINS: WHAT IS YOUR OPTIMAL TEMPERATURE?

## Increase texture

- > Increase fermentation temperature

Increase of acidification temperature above 32°C rapidly improves **viscosity**, **smoothness** and **glossy appearance**

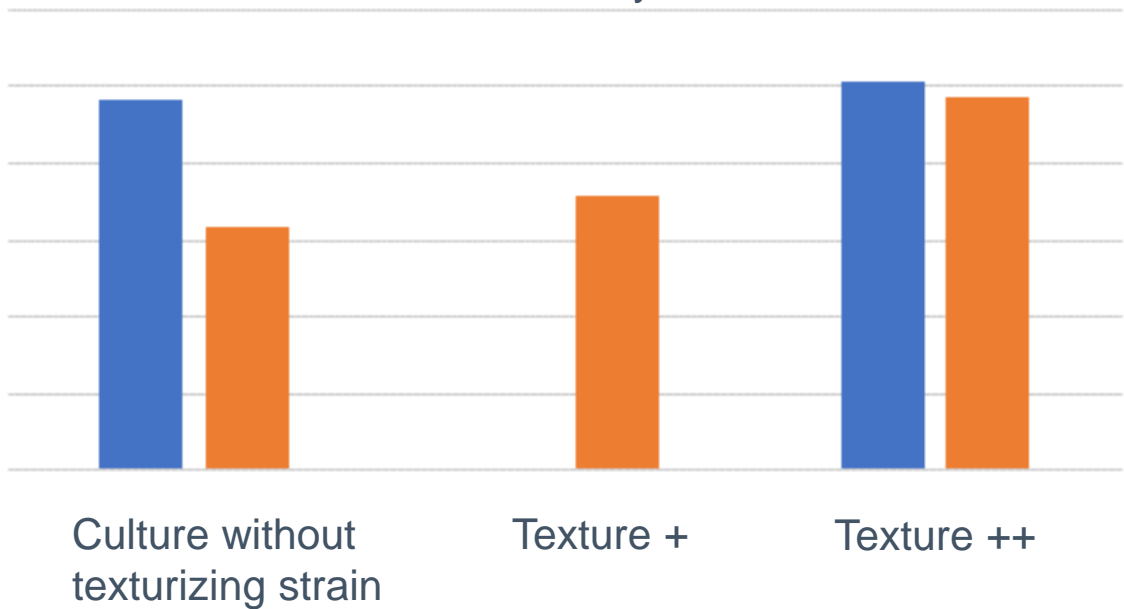
Texture feature points (rheology)



# IMPACT FROM THE CREAM

## Sour cream 15% fat

Viscosity



February

June

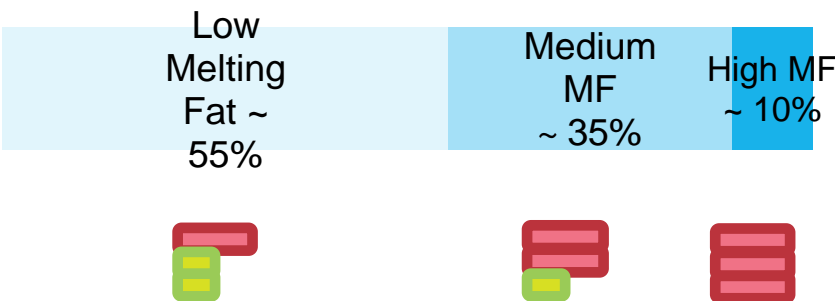
*Fat Fraction (by content %)*

*Fatty Acid Composition*

 saturated FA  
 short chain / cis unsaturated FA



Grass-fed Summer Indoor Winter



# **SHELF-LIFE EXTENSION**

**Taste stability**

**Maintaining quality**

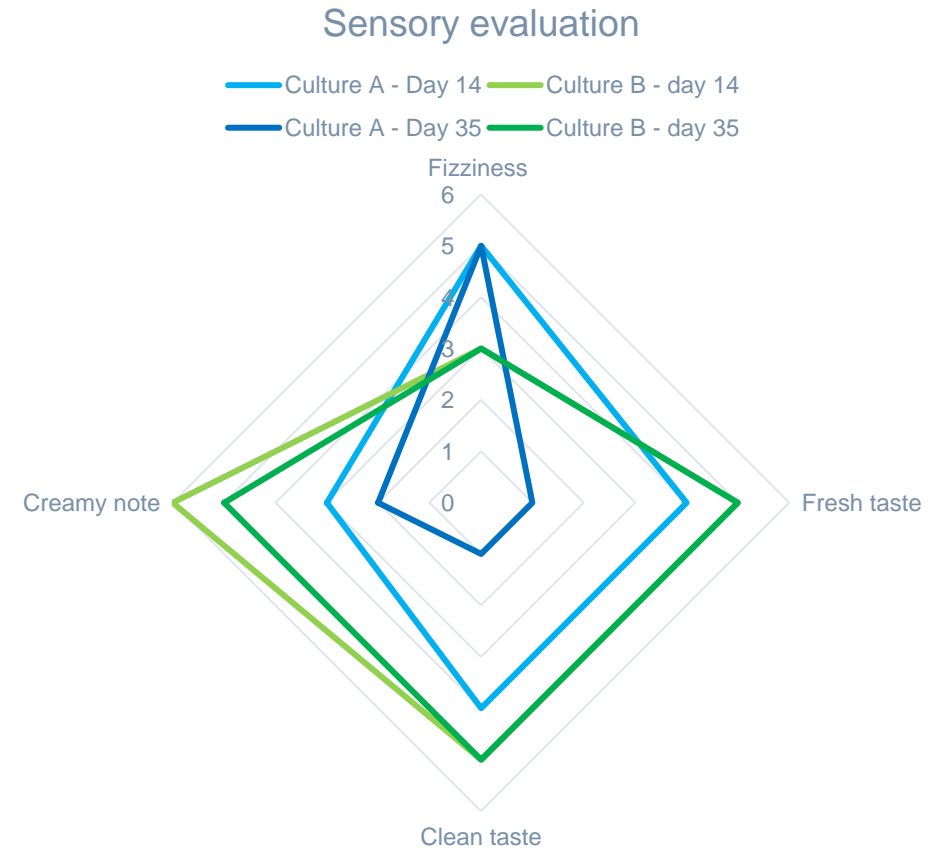


# TASTE STABILITY IN FERMENTED CREAM

Maintain taste over shelf-life period

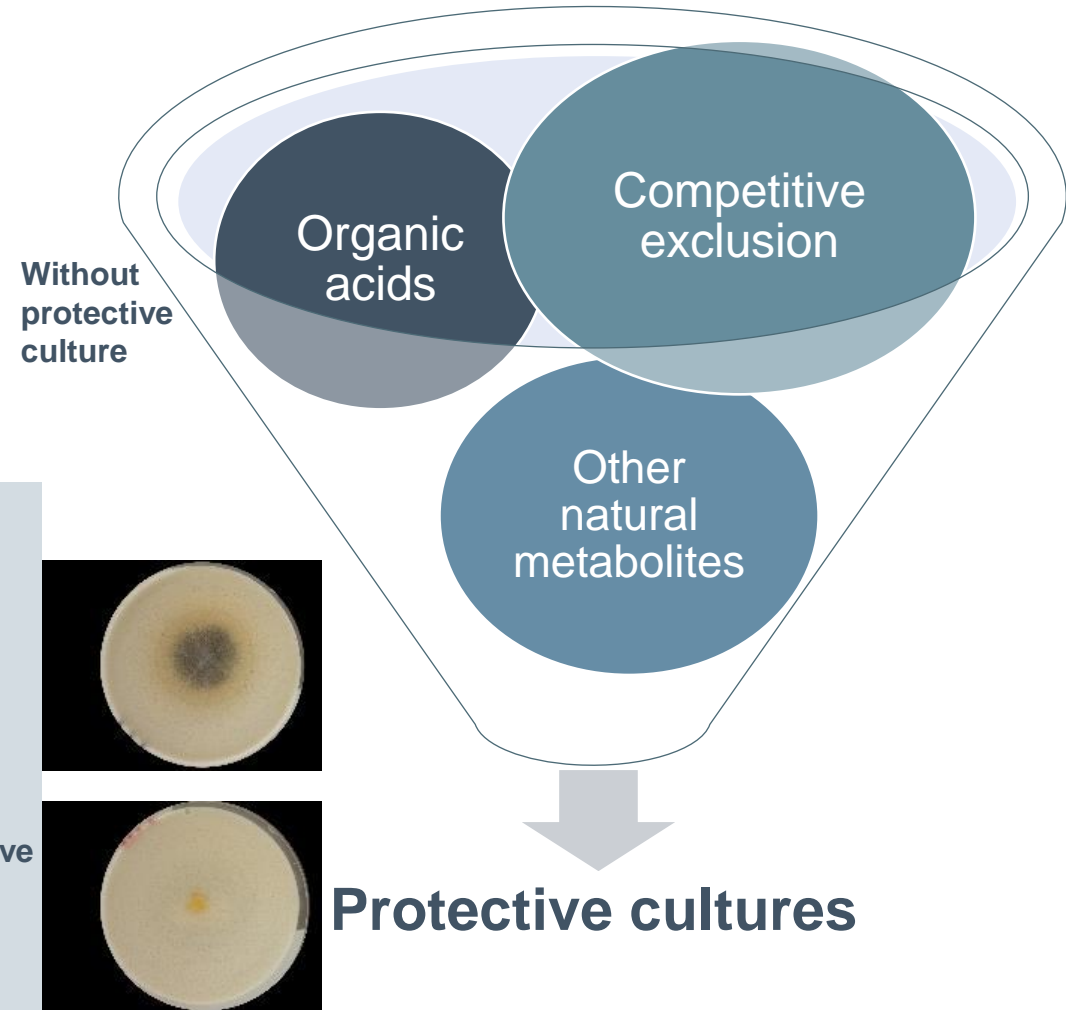
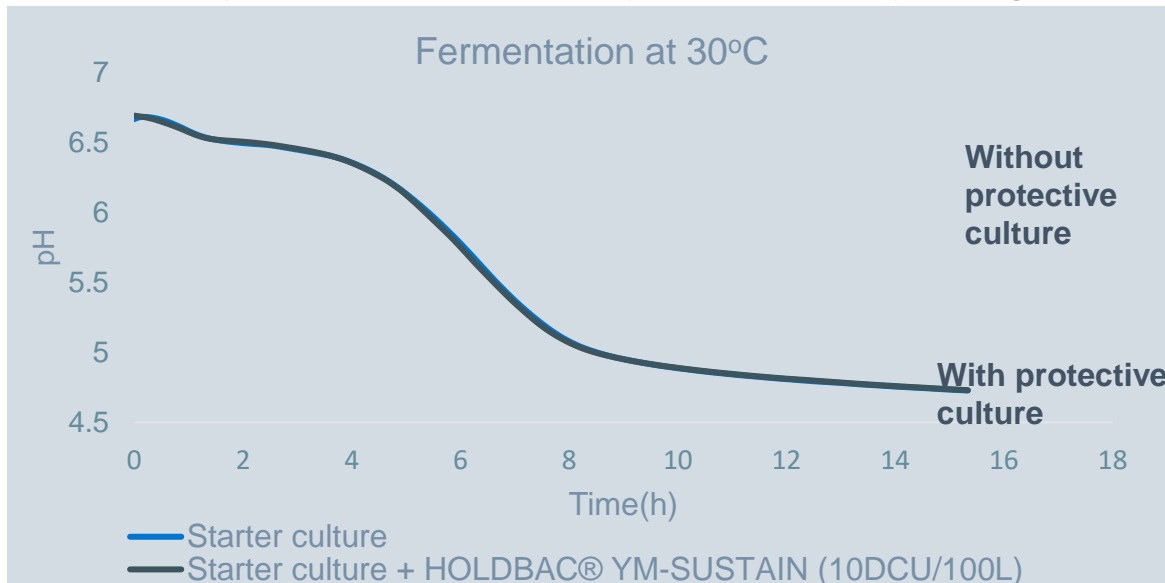
Traditionally shelf-life of fermented cream is short compared to the shelf-life of yogurt.

Main reason is, that the taste change over the shelf-life period from being fresh and clean towards cheesy and un-clean flavor profile.



# INTRODUCING PROTECTIVE CULTURES

- Live cultures - isolated from food
- Unique properties - control unwanted microorganisms
- No negative sensory impact
- Fermentation process is required
- Both dairy-based and non-dairy (without dairy allergens)





# OTHER MESOPHILIC PRODUCTS

**Kefir**

**Fresh cheese/quark**

**Buttermilk**

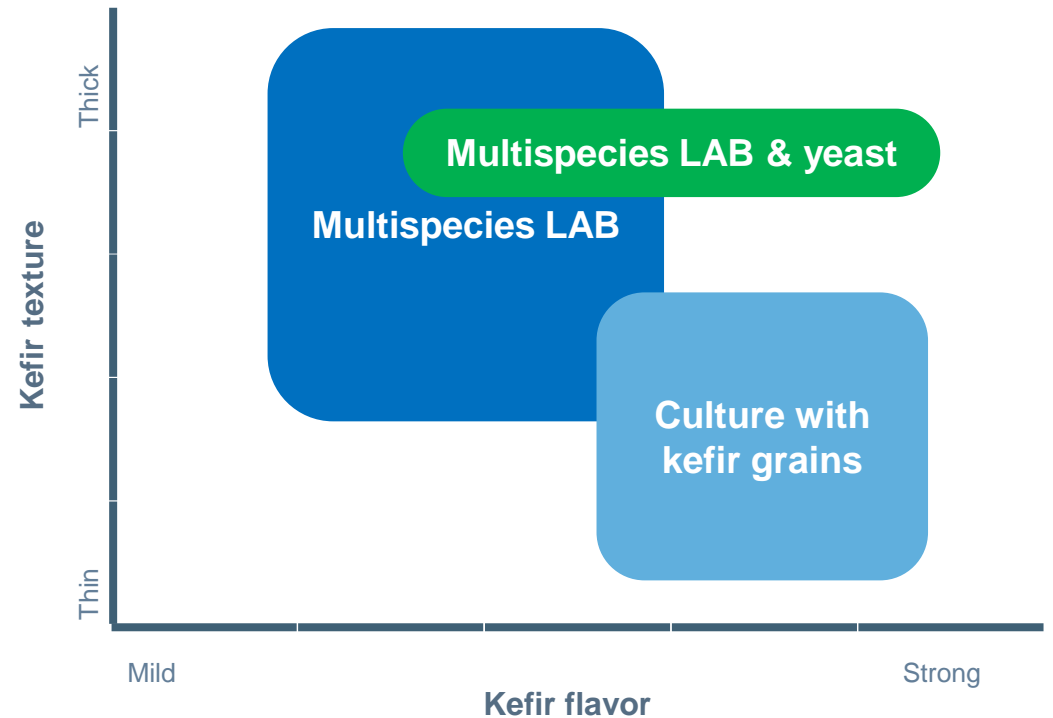
**Plant-based products**



# KEFIR

## What is kefir

- Part of the “sour milk drinks” family, like buttermilk
- Fermented milk product obtained by incubating milk with microflora of kefir grains
- Production of kefir is unique – involves a mixed lactic acid and alcoholic fermentation of lactose
- Contains different species of lactic acid bacteria including various species of *Lactobacillus*, *Lactococcus*, *Leuconostoc*, *Streptococcus* and yeast - both lactose fermenting and non-lactose fermenting



# FERMENTED COCONUT CREAM

Rich creamy fermented coconut cream with a simple/clean ingredients list.

Ingredients list:  
Coconut cream, water/coconut water, pectin, flavor (optional), starter culture.





# WHAT IS IMPORTANT IN YOUR FERMENTED CREAM ?



**Fresh**

*Taste  
Texture*

CHOOZIT® Cultures  
HOLDBAC® Protective  
Cultures



**Fresh  
Stabilized**

*Texture Differentiation &  
Consistency*

CHOOZIT® Cultures  
HOLDBAC® Protective  
Cultures

GRINDSTED® PECTIN SY  
GRINDSTED® YO-TEX 1000  
GRINDSTED® SB



**Fresh  
Cooking Stable**

*Consumer experience*

CHOOZIT® Cultures  
HOLDBAC® Protective  
Cultures

GRINDSTED® SB



**Ambient Stable**

*Shelf stability*

CHOOZIT® Cultures

GRINDSTED® SB

# UNCOMMON ANSWERS START WITH BOLD QUESTION



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