Allulose in baked goods

Investigation and characterization of the techno-functional and sensory properties of allulose in baked goods

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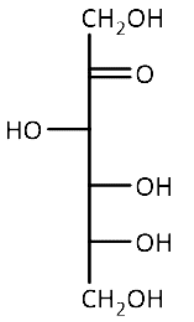
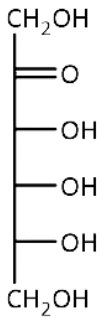
What is allulose?

- Naturally occurring sugar e.g. in figs
- Low calorific value (Allulose: 0.8 kJ/g; Sucrose: 16 kJ/g)
- Sweetness: 70% of the intensity of sucrose
- Produced from beet sugar with the help of enzymes

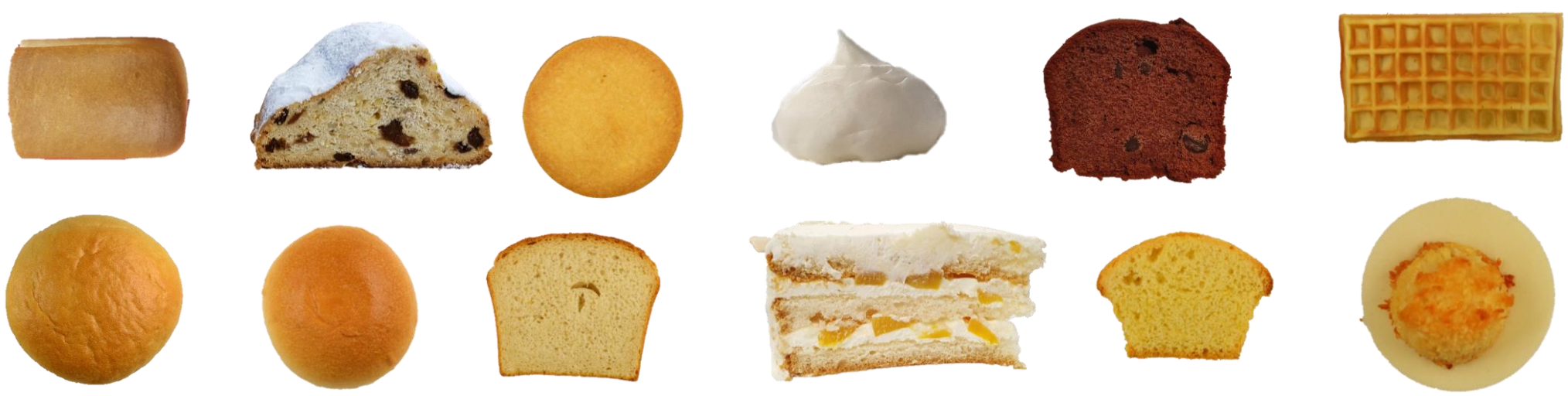


Fructose



Allulose

Use of allulose in baked goods

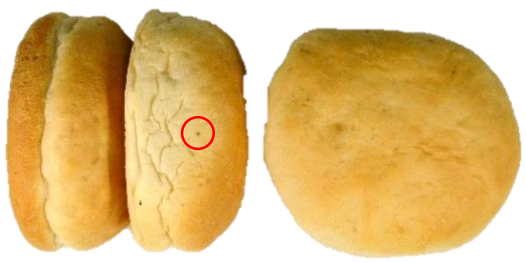


- **Fermentation:** Allulose is not metabolized by baker's yeast but does not inhibit fermentation.
- **Browning:** Allulose ensures increased browning, even in small quantities.
- **Rheology:** Improvement in doughs possible and mass foams more stable.
- **Shelf life and freshness:** Freshness is improved and shelf life is increased.
- **Sensory analysis:** Overall good consumer acceptance, 25% substitution possible without issues.

Shelf life

Buns at 4 °C after seven days of storage

Sucrose



Allulose

Circled in red is mold formation after seven days of storage.

Descriptive sensory analysis

good consistency
mellow
soft/fluffy
enjoyable sweetness
nice tan
rounded taste

not well rounded in taste
too much soft
not enough sweetness
not enough flavor
aftertaste

Conclusion: Reduction in calorific value + improvement of techno-functional properties

ILT.NRW Institute for Life Science Technologies
FUTURE FOOD FACTORY OWL
Technische Universität Berlin
MRI Max Rubner-Institut Bundesforschungsinstitut für Ernährung und Lebensmittel
Gefördert durch: Bundesministerium für Ernährung und Landwirtschaft aufgrund eines Beschlusses des Deutschen Bundestages

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