REVIEW ON THE PUBLICATION
YOGURT QUALITY WITH FIBER ADDITION

1. Publication

Yogurt Quality with Fiber Addition
B. Olsen, Tate&Lyle, Cultured Diary Products Conference 2007,
International Diary Products Association, May 22, 2007,
www.idfa.org/meetings/presentations/cultureddairy07_olsen.pdf,
Available for download on 6th February 2008

2. Aim and experimental approach of the author

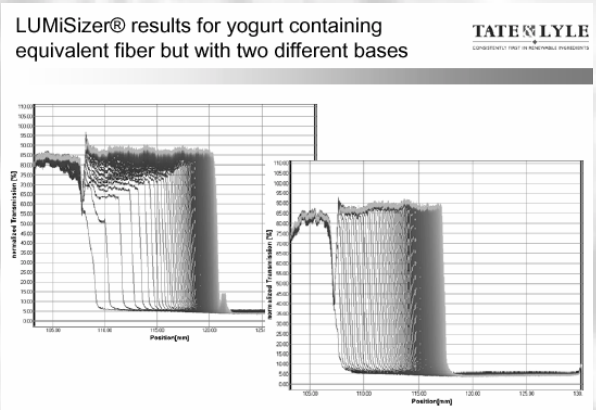
With the aim to offer yogurt products supporting the consumer to have a healthy digestive system and to improve his immune system, yogurt is functionalized, e.g. by adding fibers to the mix before heating or to the fruit preparation. Prebiotic fibers used include Inulin and Soluble Corn Fiber (SCF). Fibers may effect yogurt appearance and texture, by e.g. providing their own mouthfeel, interference with starch or protein structures.
Yogurt quality is measured by highly trained human sensory analysis and several analytical methods, e.g. microscopy, viscosity measurement and particle size analysis.

This review puts the focus only on the published part of sedimentation analysis of yogurt, containing different bases with equivalent fiber and the analysis of yogurt, containing different fibers.

3. Summary of the review

1. The autor shows that sedimentation analysis in a LUMiSizer® can distinguish between two yogurts containing equivalent fiber but two different bases.
2. The autor shows that quantitative sedimentation analysis based on front tracking can distinguish between yogurt samples with different fibers added.
3. The autor concludes that sedimentation in a LUMiSizer® shows patterns that may be useful for analytical measurements.

4. Discussion



Cited from the reviewed publication (see references)

The potential of fingerprinting (comparing) the transmission profiles for different recipes is shown. Already looking at the first profiles differences are found.
The evolution of the transmission profiles characterizes mainly zone sedimentation and consolidation of a particle network. All particles move with the same speed for sample at the right, whereas for the sample at the left an additional clarification due to separate sedimentation of finer particles is observed. The space between the consecutive profiles decreases, the resistance against further compaction of a space filling particle network is increasing.

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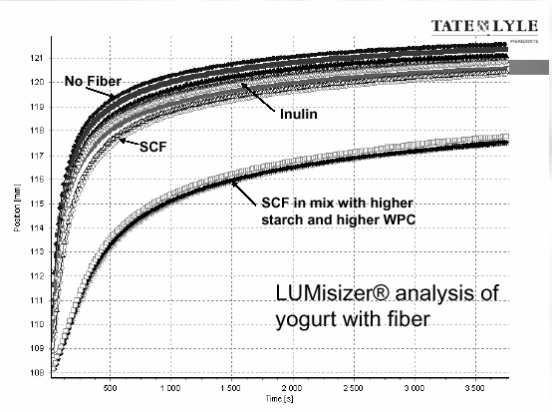
The separation extent and kinetics can be easily compared and quantified for the samples using the analysis mode 'front tracking' (sedimentation front traced at a certain constant transmission value), see right picture. The sedimentation speed can be calculated, it is represented by the slope of the initial linear range of the front tracking curve.
"No fiber" shows the fastest sedimenation. "*SCF in mix with higher starch and higher WPC"* shows the slowest sedimentation under the applied conditions, i.e. this is the most stable preparation.



Cited from the reviewed publication (see references)

Summary

TATE & LYLE

- Yogurt is an attractive vehicle for nutritional enhancement.
- A wide variety of fiber ingredients has emerged and continues to increase. Just a few were discussed here.
- Well established viscosity measurements continue their vital role.
- Additional techniques provide insights into various attributes such as heavy vs. sticky texture, mouth coating effects and grainy/chalky mouthfeel.
- Particle size analysis and sedimentation in a LUMiSizer® show patterns that may be useful in these measurements.
- Sensory evaluation will help define the patterns.

Cited from the reviewed publication (see references)

5. References

- Yogurt Quality with Fiber Addition, B. Olsen, Tate&Lyle, Cultured Diary Products Conference 2007, International Diary Products Association, May 22, 2007, www.idfa.org/meetings/presentations/cultureddairy07_olsen.pdf, available for download on 6th February 2008
- Yogurt Stability – Sedimentation Analysis, Application note L.U.M. GmbH
- Characterization of food quality and structural stability by analytical centrifugation, D. Lerche, L. Piesendel, B. Senge, Proceedings 3rd International Symposium of Food Rheology and Structure, 2003, 149-153