



Study of Yogurt textural properties

Introduction

Yogurts are a growing food segment worldwide, especially for children and health conscious consumers. It is therefore critical to ensure the quality of the textural properties for consumer acceptability.

Application

Food

Objective

Analyse the texture (mouth feeling) of various yogourts.

Device

Rheolaser® LAB
Rheolaser® LAB6

In order to characterize these properties, the “classical” mechanical rheology may face some experimental issues (slippage, fracture, etc...) due to the weak structure of these yogurts. The use of a non-intrusive and non-destructive technique is then a key solution to monitor these properties without making any change to the sample structure.

In this example, five different yogurts are characterised, belonging to various yogurts families:



- A) Yogurt 1 & 2: gel-like yogurts ;
- B) Yogurt 3: Greek-type yogurt ;
- C) Yogurt 4 & 5: creamy yogurts ;

Characterisation of the elasticity

Yogurts are sampled in the measuring cell using coring-cell (open-bottom), allowing to sample the product without shearing it too much, thus applying a very low shear-rate to the samples. Just after sampling, the user observes a variation of the elasticity index which is increasing, indicating a structure recovery. Figure 1 (below) reports the Elasticity Index (EI) after sampling.

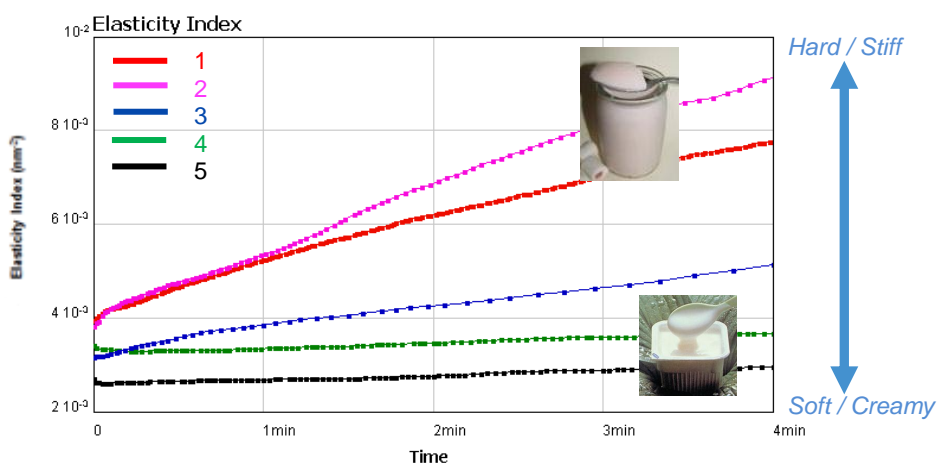
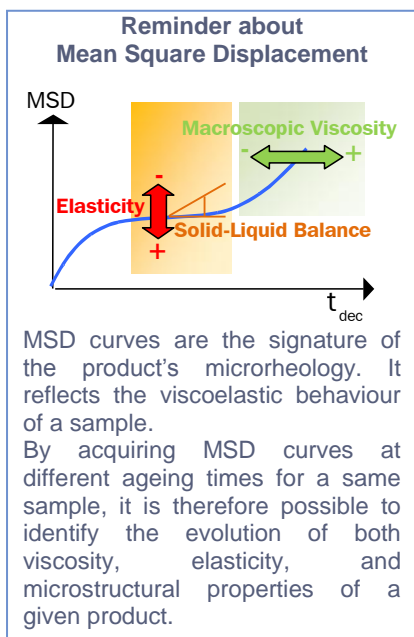


Figure 1. Elasticity variation just after sampling

It is noticeable that Yogurts 1 & 2 (gel-like) are a lot more elastic (hard / stiff) than the others. Yogurt 4 & 5 (creamy) are the least elastic (soft / creamy). Yogurt 3 has an intermediate behaviour.