

Supplementary Material

Appendix A

Rheological data used for the modelling of flow behaviour

The sets of curves used for the modelling of the general flow behaviour are displayed and described below. In general a variance can be seen in the samples processed in an aluminum cup, concerning the general speed of the structure formation. This has been discussed in detail within this work.

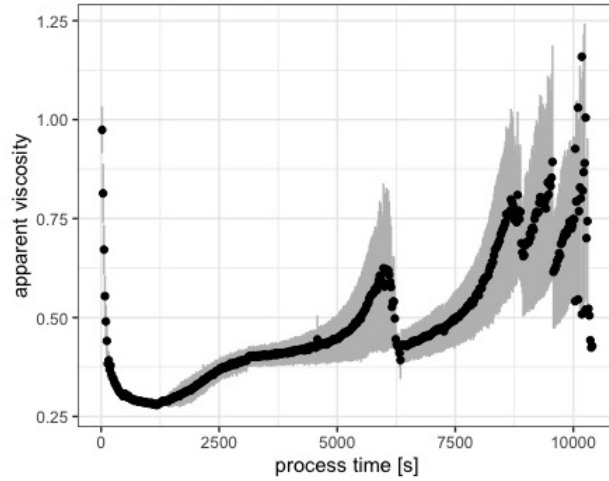


Figure 1: Plotted mean values ($N=5$) of the measured apparent viscosity of model processed cheese samples produced from native casein prepared in an aluminium cup: variance can be seen in the time that is needed to reach the second exponential phase of structure formation. This was attributed to the pre-mixing conditions of the samples and included a representation for matrix inhomogeneity in the model

The samples processed in a steel cup showed a more detailed description of a possibly macroscopic view of a microscopic process, as discussed also, especially in section 3 and 4 of this work. Hence to get a good mix of process dynamics and monitoring the aggregation phenomena, this data mix seemed to include most of the variance found in the samples.

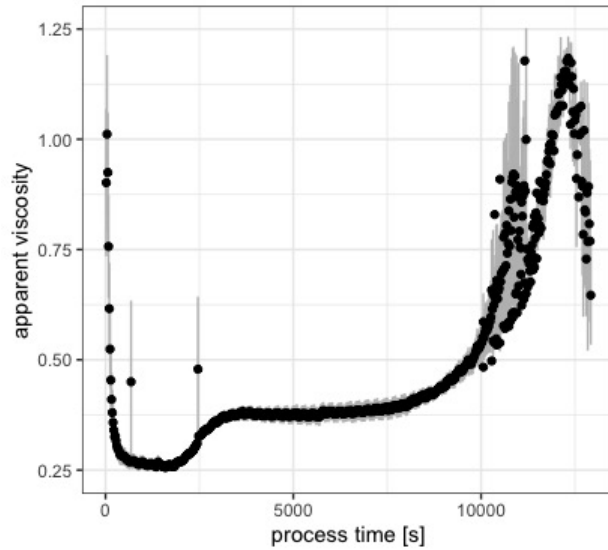


Figure 2: Plotted mean values ($N=3$) of the measured apparent viscosity of model processed cheese samples produced from rennet casein prepared in an aluminium cup: variance at the end of processing negligible. Date included a representation for reproducibility of the flow curve.

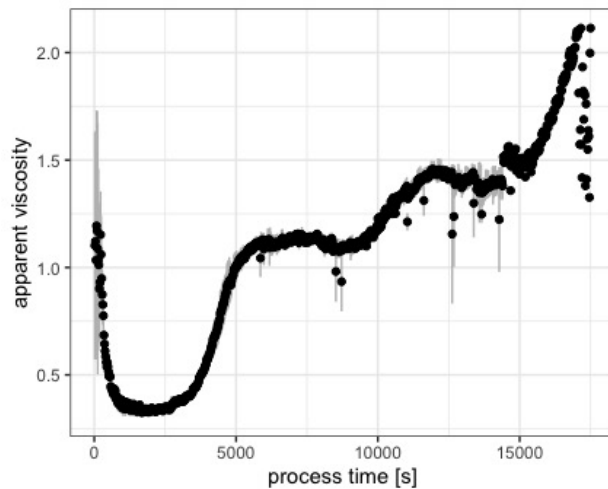


Figure 3: Plotted mean values of the measured apparent viscosity of model processed cheese samples produced from rennet casein prepared in a steel cup: variance can be seen in the occurrence of a third lag phase, which represents an intermediate stabilization at an apparent viscosity level during the second exponential phase of structure formation