



Stability of whipped egg

INTRODUCTION

Eggs, and more specifically whipped egg, are basic ingredients of the food industry as they enter in the composition of various recipes such as pastries, soufflé, sponge cake, etc. Whipped egg is made by whipping the egg white allowing the incorporation of air, hence the formation of a dispersion of air bubbles in the aqueous phase of the egg white, stabilised by proteins. The stability of the foam is a critical parameter regarding the stability of the final product. The study of the stability of whipped egg is therefore an important parameter for the stability study of the prepared food. The kinetics of coalescence of the air bubbles and the potential syneresis need therefore to be controlled.

The Turbiscan Classic can be used to study the stability of foam in general and therefore, can be used to characterise the stability of whipped egg.

Application

Food

Objective

Study the various process of destabilisation of whipped egg

Device

TURBISCAN® Classic

METHOD

Three types of egg white are used to carry out this experiment.

- An egg white separated industrially and thermally treated (UHT). It contains some xanthane to compensate the loss of viscosity of the product.
- Some egg white separated in the lab, coming from two brands of egg.

The egg white have been whipped using the same protocol (time, temperature, speed of the whipping) and the sampling has been carried out in the Turbiscan Classic cells by coring. The stability has been followed on one hour.

RESULTS

1. Determination of the syneresis

The characterisation of the syneresis of whipped egg is done very easily using the Turbiscan Classic as a peak in transmission appears (Figure 1). It is therefore possible to calculate the kinetics of syneresis by following the thickness of the transmission peak (Figure 2).

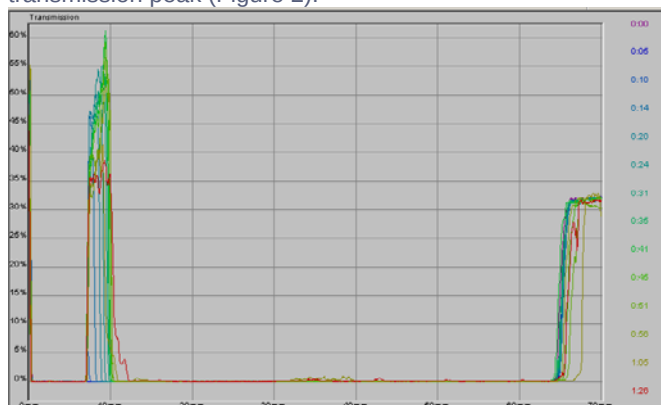


Figure 1. Signal in transmission