

Stability of chocolate milk containing different stabilizers

INTRODUCTION

Milk is a good source of several essential nutrients such as calcium, vitamin D and potassium. It is often recommended that milk should be consumed every day, especially for children. There are many popular milk products on the market that contain cocoa to create sweet chocolate milk drinks that are aimed at both children and adults.

Milk is an emulsion which is inherently unstable, however the addition of cocoa powder makes it even more unstable and therefore problems arise especially in storage. A stabilizer must be added to keep the cocoa particles in suspension.



KEY BENEFITS

VERSATILE

NO DILUTION

FAST AND ACCURATE

In this note, Turbiscan® was used to study the effects of different stabilizers on chocolate milk samples to determine which one performs best. 3 stabilizers A, B and C were analyzed for 6 days at room temperature.

EXPERIMENTAL RESULTS

Figure 1 shows the evolutions of the delta-backscattering (ΔBS) profiles versus sample height for chocolate milks with each stabilizer.

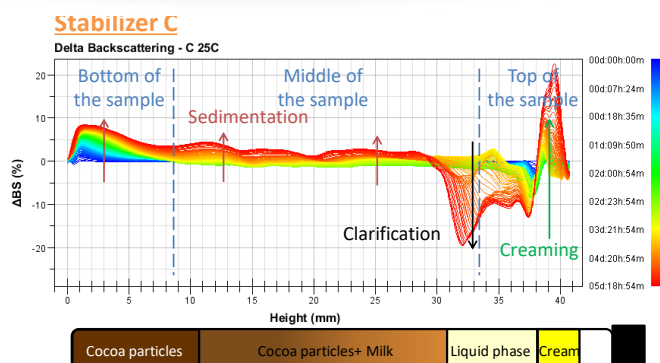
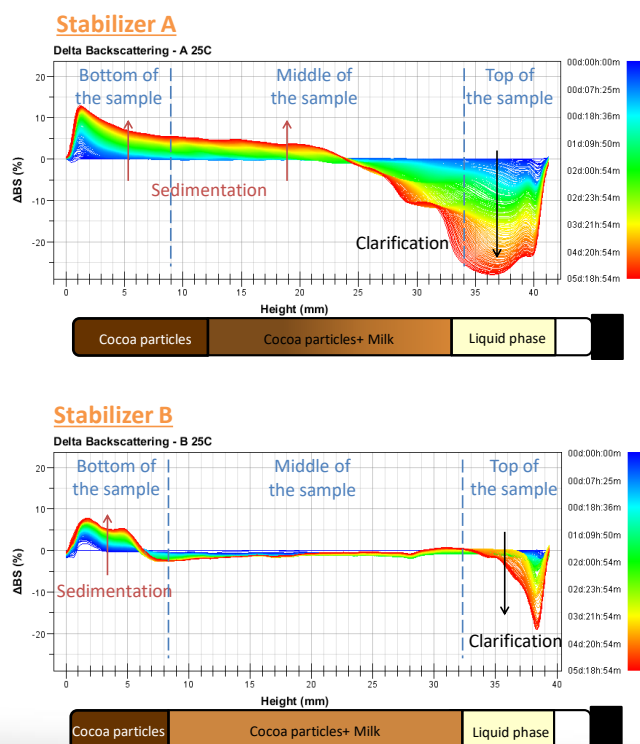


Figure 1: Variation of delta-backscattering (ΔBS) versus time and sample height for stabilizer A, B and C

With Turbiscan® it is possible to distinguish different phenomena of destabilization in 3 different zones of the samples (top, middle and bottom), this is summarized in Table 1.

Stabilizer	Bottom	Middle	Top
A	Sedimentation of cocoa particles	/	Clarification
B	Sedimentation of cocoa particles	/	Clarification
C	Sedimentation of cocoa particles	/	Clarification; Creaming of globule of fat

Table 1: Phenomena observed in three different zones of sample for chocolate milk with stabilizers A, B and C