

2015 International Congress on Ultrasonics, 2015 ICU Metz

Non-destructive detection of air traces in the UHT milk packet by using ultrasonic waves

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Abstract

In this present work, our objective is to characterize UHT milk quality inside his package without any destruction. We propose to employ the ultrasonic transmission method which is suitable for characterization of opaque media like UHT milk. For this we follow the evolution of ultrasonic parameters in different temperatures depending on air intrusion inside package. We analyzed the experimental results between both cases: package with air intrusion and package without air intrusion. We proceed by this comparative study in order to investigate the suitability, feasibility and reliability of this emerging technique as a new alternative to the conventional destructive techniques.

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Peer-review under responsibility of the Scientific Committee of ICU 2015

Keywords: ultrasonic, non-destructive, quality, UHT milk;

1. Introduction

The quality control is an important aspect in food production. The major purpose of this control is to verify the acceptability of food in terms of nutritional value and safety. The development of new techniques for the quality control continues to increase according to the requirements imposed by the consumers and the authentication of food security. Several non-destructive methods are being developed for food quality control, we mention the following examples: the near-infrared spectroscopy, Raman spectroscopy, biosensors and ultrasound.

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