

# Accepted Manuscript

Impact of the baking protocol on the structure of French crêpes

Sébastien Guibert-Martin, Vanessa Jury, Brigitte Bouchet, Guillaume Roellens, Pascal Lioret, Alain Lebail



PII: S0260-8774(16)30252-7

DOI: [10.1016/j.jfoodeng.2016.07.002](https://doi.org/10.1016/j.jfoodeng.2016.07.002)

Reference: JFOE 8610

To appear in: *Journal of Food Engineering*

Received Date: 11 October 2015

Revised Date: 24 June 2016

Accepted Date: 14 July 2016

Please cite this article as: Guibert-Martin, S., Jury, V., Bouchet, B., Roellens, G., Lioret, P., Lebail, A., Impact of the baking protocol on the structure of French crêpes, *Journal of Food Engineering* (2016), doi: 10.1016/j.jfoodeng.2016.07.002.

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

## Title

Impact of the baking protocol on the structure of French crêpes

## Authors

Sébastien Guibert-Martin<sup>1,2,3,6</sup>, Vanessa Jury<sup>1,2,3</sup>, Brigitte Bouchet<sup>3,4</sup>, Guillaume Roellens<sup>2,3,5</sup>, Pascal Lioret<sup>6</sup>, Alain Lebail\*<sup>1,2,3</sup>,

<sup>1</sup>LUNAM University, Oniris, UMR 6144 GEPEA, BP 82225, 44322 Nantes Cedex 3

<sup>2</sup>CNRS, Nantes, F-44307, France

<sup>3</sup>SFR IBSM 4202

<sup>4</sup>INRA NANTES

<sup>5</sup>UNiv Nantes

<sup>6</sup>St Michel Services Company

\*Corresponding author: Alain.lebail@oniris-nantes.fr

## Abstract

The purpose of this study is to understand and describe the mechanisms occurring during the baking of a French crêpe product with a focus on the impact of the baking temperature on the formation of the “leopard” appearance. A French crêpe is a very thin bakery product (ca. 0.7 mm thick), which is baked in less than 20 seconds at 240 °C +/- 20 °C in industrial conditions. Different microscopic techniques were used to understand the impact of the process parameters on the crêpe structure and the formation of the “fleur”. Crêpe baking is a very rapid process during which boiling occurs at selected locations of the crêpe-surface contact zone. The onset of boiling leads to the detachment of the crêpe batter from the baking surface: it is related to the balance between the resistance of the batter undergoing the baking transition and the vapor pressure inside the blister formed between the baking surface and the crêpe.

## Highlights

- Crêpe baking temperature plays a major role on crêpe structure and surface structure
- Temperature baking of crêpe higher than 230°C yield in the formation of blisters in the Crêpe
- The fat phase gathers in the thicker part of the crêpe
- The proteins are more concentrated in the thinner part.

## Keywords

Crêpe baking, Pancake, Lipid droplets, batter emulsion, Blister, Crumb structure.

Download English Version:

<https://daneshyari.com/en/article/4909213>

Download Persian Version:

<https://daneshyari.com/article/4909213>

[Daneshyari.com](https://daneshyari.com)