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# **Czech J. Food Sci.**

**L. M. Guardedeño, E.  
Llorca, I. Pérez-**

# Munuera, A. Quiles, I. Hernando: Chemical and Structural Changes in White Sauces Thawed by Microwave or Conventional Oven

Czech J. Food Sci., 27 (2009): S290-S292

Proteins, lipids and structural changes in white sauces after being stored at  $-18^{\circ}\text{C}$  and thawed by microwave and conventional oven were studied in this work. The total crude and soluble protein fractions were quantified by N-Kjeldahl. The acidity grade and oxidation spectrophotometric parameters ( $k_{232}$  and  $k_{270}$ ) were used to analyse the lipid fraction. In addition, confocal scanning laser microscopy (CSLM) was used to study the structure of the sauce. The results showed that the total crude protein fraction increased in the thawed samples if compared to the freshly-prepared

samples, mainly when microwave oven was used. However, the soluble protein fraction did not vary significantly ( $P < 0.05$ ) among the different samples. Regarding the lipid changes, the acidity index did not show significant differences among the samples.  $K_{232}$  values of the microwave-thawed samples differed significantly from the freshly-prepared and the conventional-thawed samples. Furthermore,  $k_{270}$  values were significantly different between the samples thawed using the conventional oven and the freshly-prepared ones. CSLM images showed degradation of the starch granules and an increase of size in the fat globules due to thawing.

**Keywords:**

sauce; microwave; thawing; microstructure; CSLM; chemical changes

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