

## New Peanut Product: “Mayonnaise”. Some Chemical Aspects

M.G. Johnston, V.M. Navarro, V. Nepote, N.R. Grosso, N.I. Brutti and C.A. Guzmán

Instituto de Ciencia y Tecnología de los Alimentos (ICTA).

Instituto Multidisciplinario de Biología Vegetal (IMBIV) F.C.E.F. y N. – U.N.C.

Escuela de Nutrición. Facultad de Medicina. Universidad Nacional de Córdoba.

Av. Vélez Sarsfield 1600. Ciudad Universitaria. (5016) Córdoba, Argentina

E-mail: vnepote@com.uncor.edu

---

**Abstract:** The percentage composition, fatty acids and oxidation stability was obtained from “*peanut mayonnaise*” in comparison with commercial mayonnaise and sunflower oil. “*Peanut mayonnaise*” showed better chemical quality than commercial mayonnaise.

---

### Introduction

The consume of saturated fatty acids (SFA), trans-fatty acids, cholesterol and oxisterols increase degenerative arterial process. On the contrary, unsaturated fatty acids (UFA) are an equilibrium factor to the fatty metabolism [1,2].

The AMERICAN HEART ASSOCIATION [3] had published recommendations to fat and cholesterol consume: Fat 25-30% of the total calories; SFA less than 10% of the total calories; Polyunsaturated Fatty Acids (PFA) until 10% of the total calories; Monounsaturated Fatty Acids (MFA) between 10-15% of the total calories, cholesterol less than 300mg per day.

### Experimental

**Material:** The “Peanut Mayonnaise” was developed with blanched peanut, sunflower oil, and additives to color and flavor.

**Percentage Composition:** Percentages were obtained as follow: proteins by Kjeldhal; ashes by muffle 550-600°C for 6hr; fats by soxhlet apparatus for 12hr; moisture by drying into oven 60°C for 72hr; and carbohydrates by difference between 100% and the other components percentage [4].

**Fatty Acids Composition:** The fatty acid were determined by gas chromatography as fatty acid methyl – esters, prepared whit oil extracted from “peanut mayonnaise”, commercial mayonnaise and sunflower oil [4].

**Oxidation Test:** The “peanut mayonnaise”, commercial mayonnaise and sunflower oil were accelerate oxidized in oven at 60°C for 7 days. The Peroxide Value (PV) of each sample was obtained by

the AOAC method [5].

**Statistic Analysis:** Data were analyzed by ANOVA and LSD test ( $n = 3$ ; confidence level 95%).

## Results and Discussion

**Percentage Composition:** The results showed that “peanut mayonnaise” had higher protein, carbohydrate (fiber included) and moisture percentage, and lower fat proportion than commercial mayonnaise.

Moreover, in recent works, vitamin and mineral percentages had been obtained from peanut and commercial mayonnaise, showing, “peanut mayonnaise” better quality than commercial mayonnaise.

**Fatty Acid Composition:** “Peanut mayonnaise” showed a better oleic/linoleic ratio (O/L) and higher proportion of UFA than commercial mayonnaise and sunflower oil.

**Oxidation Test:** The oxidation test was developed to study the “peanut mayonnaise” stability (aptitude time) in comparison with commercial mayonnaise and sunflower oil. The results showed that the autooxidation process followed similar curvature, without significant differences.

To conclude, the “peanut mayonnaise” is a food product with better chemical quality, in comparison with commercial mayonnaise, because of its lower fat content, lower SFA, higher MFA, fiber content and cholesterol absence.

*Acknowledgements:* CONICET, SECYT-FCEPyN-UNC, CONICOR for economical support.

## References and Notes

1. Valenzuela, A. Efectos Biológicos y Nutricionales de los Ácidos Grasos Trans, Cuanto es Mito y Cuanto es Realidad. *Aceites y Grasas*. Junio 1997: 263-269.
2. Valenzuela, A.; Zanhuesa, J.; Nieto, S. Oxidos del Colesterol en Alimentos. Factores que Condicionan su Formación y Efectos Biológicos. *Aceites y Grasas*. Junio 1998: 271-278.
3. Grundy; Winston. *Low Fat, Low Cholesterol Cook Book*; American Heart Association: 1992.
4. Grosso, N.R.; Guzmán C.A. Chemical Composition of aboriginal peanut (*A. hypogaea*) seeds from Perú. *Journal Agric. and Food Chem.* **1995**, *43*, 102-105.
5. AOAC, Official Methods of Analysis. Method nº 28022-28023, 1980.