

## **Oxidative stability of polyunsaturated fatty acids of n-3 designer eggs under different cooking methods**

### **ABSTRACT**

Variation in the extent of cooking time, temperature and heating source may greatly affect the polyunsaturated fatty acid (PUFA) double bond stability in eggs. A study was carried out to determine the oxidative stability of PUFA content of designer eggs subjected to different cooking methods. A total of 160 eggs of 4 commercial brands were obtained: A: conventional, B: DHA Gold<sup>®</sup>, C: LTK<sup>®</sup>, and D: Safegg<sup>®</sup>, and equally and randomly assigned to 4 cooking methods: (i) no cooking, (ii) boiling, (iii) frying, and (iv) microwaving. The results showed that brand and cooking method significantly influenced the PUFA content in the eggs. B had the highest n-3 and n-6 PUFA contents, and the lowest n-6/n-3 PUFA ratio compared to brands A, B, and D. The brand B had the lowest malondialdehyde (MDA) concentration compared to other brands. All methods of cooking increased MDA content ( $P < 0.05$ ). The n-6/n-3 PUFA ratio was not affected by cooking method only in brands C and D ( $P > 0.05$ ). In conclusion, boiling appeared to be the most and microwaving the least suitable method of cooking for eggs, as measured by PUFA and MDA content.

**Keyword:** Cooking; Designer egg; Yolk; PUFA; MDA