

OMEGA-3 FORTIFIED YOGURT AND ITS INFLUENCE ON PLASMA LIPID PROFILE IN AN ANIMAL MODEL

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Background and objectives: Regular intake of omega-3 fatty acids (O-3FAs) improves human health helping to reduce chronic non-communicable diseases among others. Enriched O-3FAs yogurts are a value-added strategy to ingest them. The objective was to analyze the effect of O-3FAs yogurt intake on plasma fatty acids profile of mice.

Methods: Four-week-old mice were divided into 3 groups (6 for each group). The control group (I) were fed the basal diet only throughout the entire feeding period. The second group (II) were fed the basal diet added with plain yogurt, meanwhile the (III) were fed the basal diet added with fortified ω -3 PUFA yogurts (250 mg/200 g yogurt). Experimental feeding was continued for 4 weeks and provided with permitted ad libitum access to the diet and water. All the experiments were carried out as approved by Ethical Committee. After 28 days, blood was collected; plasma was obtained and stored at -80 °C. The plasma fatty acid profile was determined by gas chromatography (GC) after extraction of the lipids to obtain the fatty acid-derived methyl esters. Statistical analysis used ANOVA. Result (% Area) were expressed as Mean \pm SE.

Results: When analyzing the values of the plasma fatty acid profile, it was seen that Oleic acid (18:1): 17.94 \pm 0.64b, 16.60 \pm 0.46b, 14.69 \pm 0.97a; Eicosapentaenoic acid (EPA, 20:5 n-3): 0.46 \pm 0.06a, 0.62 \pm 0.06ab, 0.74 \pm 0.02b were obtained for (I), (II) and (III) respectively. Means with no letters (a,b) in common for each fatty acid, are significantly different (p < 0,05). There were not statistically significant differences for the rest of the fatty acids evaluated.

Conclusions: In the context of a balanced diet, the fortified yogurt is a good vehicle to improve plasma lipids profile by increasing EPA -which has beneficial effects such as anti-atherosclerotic and anti-inflammatory properties.