PO05 - 24992 - INCORPORATION OF OLIVE POMACE INGREDIENTS IN YOGHURT AS SOURCE OF FIBRE AND HYDROXYTYROSOL: BIOACTIVITY AND STABILITY OF THROUGHOUT GASTROINTESTINAL DIGESTION

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Abstract

Yoghurt is highly appreciated for its nutritional/health benefits linked to its high calcium content, bioactive peptides and functional bacteria[3,4]. Nevertheless, yoghurt does not contain fibre nor polyphenols. Various food ingredients have been added to yoghurts to increase its phenolic content[4] and fibre content[2], including cereals, fruit and recently vegetable purees. The powdered ingredients developed from olive pomace (OP) could be a new attracting source of dietary fibre[5] and antioxidants[6]. OP is the most relevant byproduct from olive oil industry[7], but also a high source of dietary fibre[8] and polyphenols, mainly hydroxytyrosol[6].

The main goal of this study was to assess the feasibility of incorporation of OP powders [liquid-enriched powder (LOPP) and pulp-enriched powder (POPP)] into yoghurt as a source of fibre and polyphenols. The evaluation of the bioaccessibility and antioxidant activity during simulated gastrointestinal digestion were also assessed.

The incorporation of OP powders into yoghurts showed that fortification with 2% POPP would be allowed the claim of "source of fibre" in the final product. The addition of LOPP (1%) represents the presence of 5 mg of hydroxytyrosol and derivatives. Therefore, the consumption of one yoghurt/day in an equilibrated diet, it may allow a health claim of "protection of LDL from oxidative damage"[9]. Fortified yogurts exhibited higher total phenolic content (62-75%) and higher radical scavenging activity (78-87%) compared to control yogurt ($p<0.05$). Concerning the bioaccessibility of polyphenols, the Y-LOPP revealed a recovery index of 46% of LOPP phenolics. The Y-POPP exhibited an increasing in ABTS scavenging activity of 15% when compared to POPP. These results showed that yoghurt matrix allowed the release of OP polyphenols into the gut.

OP powders can be considered an important source of fibre and bioaccessible hydroxytyrosol and dairy products may be good carriers of olive pomace bioactives, conveying significant nutritional and health benefits to the consumers.

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