

JOURNAL



**INTERNATIONAL SOCIETY
OF ANTIOXIDANTS IN
NUTRITION & HEALTH**

POLYPHENOLS 2016

INSIDE

**10th World Congress on
Polyphenols Applications**

Porto, Portugal

Journal of ISANH – Open Access Journal

June 29 - July 1, 2016 | Vol 3 Issue 4 | DOI: 10.18143/JISANH_v3i4

ANTIOXIDANT ACTIVITY AND POLYPHENOLS STABILITY IN ICE CREAM ENRICHED WITH COCOA BEAN SHELL DURING SIMULATED IN VITRO GASTROINTESTINAL DIGESTION

BARBOSA-PEREIRA, Letricia (1); BOROTTO DALLA VECCHIA, Stefania (1)

BERTOLINO, Marta (1); ZEPPA, Giuseppe

University of Turin - DISAFA, Italy

leticia.barbosapereira@unito.it

Cocoa bean shells (CBS) is one of the main by-products of the cocoa roasting process, which represents 12% of total weight after the husking and grinding 1. CBS is a potential source of dietary fibre and polyphenols recognized as dietary factors responsible for potential beneficial effects on human health. The aim of this study was to evaluate the stability and bioaccessibility of phenolic compounds and the changes on the antioxidant activity of enriched ice cream during gastrointestinal digestion. CBS flour was added to ice cream at different concentration (2%, 4%, 6% and 8%) and the total phenolic content (TPC), total flavonoids, tannins and radical scavenging activity (DPPH) were evaluated during in vitro digestion at different steps of digestion (oral, gastric and duodenal). After in vitro digestion total flavonoids and tannins increase slightly and TPC increase up to 50% compared to control before digestion. The radical scavenging activity of ice cream containing cocoa bean shell increases up to 25% compared to ice cream before digestion. The results suggested that CBS may be a promising functional ingredient to producing highly nutritive value ice cream minimizing the volume of agro-industrial wastes.

1. *International Cocoa Organization (ICCO)*

Supported by European Union's Seventh Framework programme for research and innovation under the Marie Skłodowska-Curie grant agreement No 609402 - 2020 researchers: Train to Move (T2M)