UNICAM Università di Camerino 1336

CHIMALI 2018 CAMERINO

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XII Italian Food Chemistry Congress

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Auditorium Benedetto XIII - via Le Mosse - Colle Paradiso

ORAL COMMUNICATIONS

OC01 Evaluation of the Effectiveness of Fatty Acids and Inorganic Elements by Chemometrics for the Traceability of the Sicilian *Capparis spinosa* L..

OC02 An optimization of extractive procedures for phenolic compounds applied to millet from Burkina Faso.

OC03 Impact of conventional and non-conventional extraction methods on the untargeted phenolic profile of *Moringa oleifera* leaves.

OC04 Rapid and Automated On-line Solid Phase Extraction HPLC-MS/MS with Peak Focusing for Determination of Ochratoxin in wine samples.

OC05 Fully Automated Determination of 3-MCPD and Glycidol in Edible Oils by GC/MS Based on the Commonly Used Methods ISO 18363-1, AOCS Cd 29c-13, and DGF C-VI 18.

OC06 Detection of non-intentionally added substances (NIAS) from reusable food contact materials: assessment of emerging contaminants.

OC07 Reflectance colorimetry: a mirror for food quality.

OC08 Identification of X-ray irradiated hazelnuts by Electron Spin Resonance (ESR) Spectroscopy.

OC09 Determination of tropane alkaloids in herbal teas and infusions.

OC10 SALIVAGES – EU JPI Project. The "form" makes the difference: unrevealing the differential impact of liquid and solid fructose in mice metabolic signatures by comprehensive two-dimensional gas chromatography.

OC11 Two-dimensional gas chromatography as a powerful tool for discriminating VOCs in monovarietal and commercial extra virgin olive oil.

OC12 Ancient Apple varieties from Friuli Venezia Giulia region: phytochemical profile of phenolics and triterpene acids by LC-MS approach.

OC13 Colorimetric metal nanoparticles plasmonic assays: a new tool for food analysis.

OC14 *Ginkgo biloba* seeds in human diet: effect of domestic and industrial heating on ginkgotoxin content.

OC15 Electronic eye and electronic tongue data fusion for monitoring grapes ripening.

OC16 SALIVAGES – EU JPI Project. Lectin microarray-based investigation of diet-dependent, differential glycosylation of proteins in murine biological fluids and organ homogenates.

OC17 SALIVAGES – EU JPI Project. Yeast metabolites of glycated amino acids in beer – potential biomarkers in saliva and urine?

OC18 A multi-methodological approach to characterise traditional Italian products: the case of "Cornetto di Pontecorvo" red sweet pepper.

OC14- *Ginkgo biloba* seeds in human diet: effect of domestic and industrial heating on ginkgotoxin content

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Introduction:

Gingko biloba seeds are consumed in Asian countries for their nutritional value. However, several cases of *G. biloba* seed poisoning have been described in literature due to the presence of the neurotoxin 4'-O-methylpyridoxine (MPN) [1]. The risk due to food containing *G. biloba* seeds has increased gradually in Europe, where there is a progressive diffusion of oriental cuisine.

Methods:

A High-Performance Liquid Chromatography method coupled with fluorimetric detector (HPLC-FLD) was developed and validated in order to quantify MPN in *G. biloba* seeds. Samples included Japanese raw and Chinese commercial seeds present in the Italian market. The effect of different technological processes (home cooking or industrial treatment) on MPN concentration was evaluated.

Results:

The HPLC-FLD method was validated according to the FDA guidelines [2]: all criteria were respected. A good linearity as well as a high sensitivity were obtained, as shown by the linear coefficient (R_2>0.98) and Limit of Detection and Quantitation (2.80 ng/g and 9.4 ng/g dry weight, respectively). MPN content in *G. biloba* raw seeds was 294.70±92.0 µg/g, according to literature data, where a range of 170-400 µg/g is reported [3]. Some of the most frequent home cooking treatments were applied and compared with commercial ones. Our preliminary results showed that only the industrial treatment reduced significantly the level of MPN (-98.8%) so that their consume can be considered safe. Among the other thermic treatments, the microwave cooking was the less effective in seed detoxification.

Conclusions:

Although the temperature and time of heating affected differently the MPN content, only the industrial treatment reduced significantly the toxin concentration. Further thermic treatments will be applied to *G. biloba* seeds, to evaluate the role of different domestic processes in reducing the ginkgotoxin content in seeds and evaluate their safety for human consumption.

References:

1. Hori T., Fujisawa M., Shimada K., Oda A., Katsuyama S., Wada K., *Biol Pharm Bull*, 27, 486-491 (2004).
2. Food and Drug Administration, Guidance for Industry – Bioanalytical Method Validation, (2013).
3. Wada K., Ishigaki S., Ueda K., Sakata M., Haga M., *Chem Pharm Bull*, 33, 3555-3557 (1985).