

O2.4.	Green tea, coffee and chocolate – the typical sources of antioxidants L. Pogačnik, N. Poklar Ulrih University of Ljubljana, Faculty of Food Science and Technology, Ljubljana, Slovenia	67
O2.5.	Agro-food waste valorisation C. Popovici (1), O. Migalatiev (2), R. Golubi (2), V. Caragia (2), A. Gh. Coev (2), N. Bogdan (2), I. Grumeza (2) 1 – Technical University of Moldova, Faculty of Food Technology, Moldova; 2 – Scientific and Practical Institute of Horticulture and Food Technologies, Moldova	68
O2.6.	Plant food supplements: from efficacy to adverse events P. Restani, F. Colombo, F. Orgiu, S. Biella, C. Di Lorenzo Dept. Pharmacological and Biomolecular Sciences, Università degli Studi di Milano, Milano, Italy	69
O2.7.	Development and application of fast methods to measure the phenolic profile and antioxidant activity in yellow and purple corn (ZEA MAYS L.) F. Colombo (1), K. Petroni (2), C. Di Lorenzo (1), S. Biella (1), R. Pilu (3), P. Restani (1) 1 -Dept. of Pharmacological and Biomolecular Sciences, Università degli Studi di Milano, Milan, Italy; 2-Dept. of Bioscience, Università degli Studi di Milano, Milan, Italy; 3- Dept. of Agricultural and Environmental Sciences - Production, Landscape, Agroenergy, Università degli Studi di Milano, Milan, Italy	70
O2.8.	Nutrition and health benefits of mushroom beta-glucans and other bio-active compounds M. Shamtsyan St. Petersburg State Institute of Technology (Technical University), Russia	71
O2.9.	Oregano (Origanum vulgare) extract as an inhibitor of fish spoilage bacteria M. Sterniša (1), A. Kunčič (1), C. Purgatorio (1,2), F. Bucar (3), S. Smole Možina (1) 1-Biotechnical Faculty, University of Ljubljana, Ljubljana, Slovenia; 2-Faculty of Bioscience and Agro-Food and Environmental Technology, University of Teramo, Teramo, Italy; 3-Institute of Pharmaceutical Sciences, University of Graz, Graz, Austria	72

O2.7. DEVELOPMENT AND APPLICATION OF FAST METHODS TO MEASURE THE PHENOLIC PROFILE AND ANTIOXIDANT ACTIVITY IN YELLOW AND PURPLE CORN (ZEA MAYS L.)

**F. Colombo (1), K. Petroni (2), C. Di Lorenzo (1), S. Biella (1),
R. Pilu (3), P. Restani (1)**

1 -Dept. of Pharmacological and Biomolecular Sciences, Università degli Studi di Milano, Milan, Italy;

2-Dept. of Bioscience, Università degli Studi di Milano, Milan, Italy;

3- Dept. of Agricultural and Environmental Sciences - Production, Landscape, Agroenergy, Università degli Studi di Milano, Milan, Italy

francesca.colombo1@unimi.it

Background: Oxidative stress is considered one of the mechanisms responsible for the gluten toxicity in sensitive patients. Among cereals, maize is used as an alternative to wheat in the gluten-free diet. Previous studies reported a significant antioxidant activity of white corn polyphenols, which are classified as soluble/free and bound/insoluble forms. Pigmented corns contain other active molecules such as anthocyanins, carotenoids and phenolic compounds with well-known bioactive properties.

Aim: The aim of this study was the development of rapid methods for the characterization of phenolic profile and the evaluation of antioxidant activity, which were applied to different maize phenotypes.

Methods: One purple corn, three yellow corns and three hybrids were analysed. Two extraction methods were applied for the evaluation of free and bound phenolic compounds. Then, different *in vitro* techniques were applied: 1) spectrophotometric assays for quantitative determination of phenolic content and antioxidant activity 2) High Performance Thin Layer Chromatography for the separation and semi-quantitative characterization of phenolic substances, assessing in parallel the associated antioxidant activity.

Results and discussion: All analytical methods presented in this study showed a similar and comparable trend. Hybrid varieties showed an interesting antioxidant profile in terms of free and bound phenolic compounds.

Conclusions: The methods developed in this study could offer important tools for the determination of antioxidant activity in corn. Among samples analysed, hybrid varieties presented an interested antioxidant activity and could improve the nutritional and sensory quality of gluten-free products.