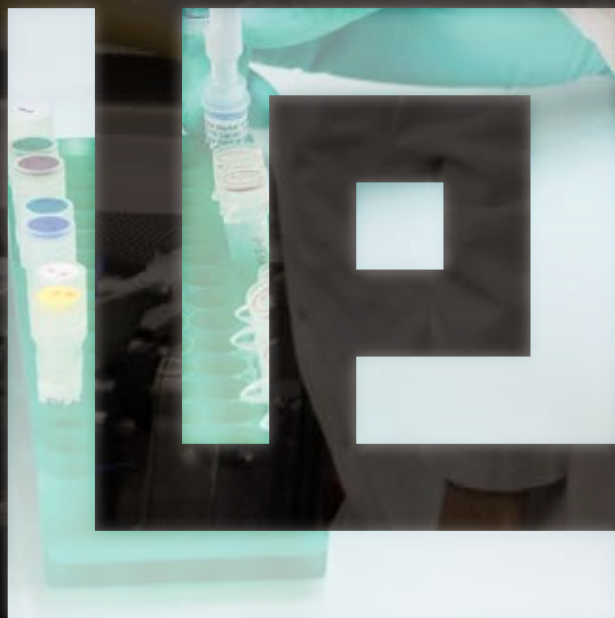
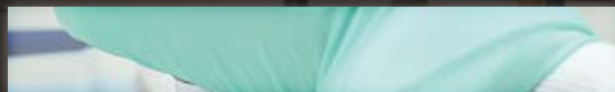


6th International Conference on Foodomics
From knowledge to industry
From industry to knowledge



University of Bologna

**6th International
Conference
on
FoodOmics**

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Cesena, Italy**

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Preface

FOODOMICS 2020

from Knowledge to Industry, from Industry to Knowledge

During the previous editions, the definition of FoodOmics was elaborated and articulated, integrating knowledge in different scientific areas. FoodOmics indicates a comprehensive approach involving food chemistry, analytical chemistry, biochemistry, microbiology, molecular biology, food technology, basic and clinical nutrition, which act as a whole to improve consumer's well-being and health.

The 6th edition of the International Conference on FoodOmics add more pieces to the puzzle to get a complete view, and other domains other than the food and the human ones are considered. To take a step forward the formulation of innovative and safe food, it is now time to integrate the "environment" and the "animal nutrition" domains in the FoodOmic vision and to further consider the contribution of industrial research to the advancement of knowledge.

FoodOmics is not only the integration of different scientific areas, but also of academia and industrial research, and FoodOmics 2020 aims to motivate collaboration among these two complementary research worlds to share new information and ideas to further expand the knowledge in the field. To allow active participation, besides keynote speakers directly invited by the organization, most of the speakers have been selected among submitted abstracts. The choice was challenging due to the high scientific quality of submitted abstracts, and the result is an amazing program, including a high-value poster session highlighting the scientific importance of FoodOmics scientists.

FoodOmics 2020 will be remembered not only for the high scientific quality of the program but also for the choice to organize it in presence, albeit in full compliance with the safety rules related to the COVID emergency. It was a big challenge, and unfortunately, the situation in Europe limited the participation of international colleagues. We are waiting for them at FoodOmics 2022 since we are convinced that nothing can replace face-to-face interaction and the joy of looking colleagues and friends in the eye.

We gratefully thank all the Speakers, Participants and Members of the Scientific and Organizing Committees. Special thanks to the sponsors who believed in the importance of this event and supported it.

We wish you a pleasant and stimulating stay in Cesena.

Alessandra and Francesco

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Comparative study of early- and mid-ripening peach (*Prunus persica* L.) varieties: biological activity, macro-, and micro- nutrient profile

Dasha Mihaylova¹, Aneta Popova¹, Nadezhda Petkova¹, Ivelina Desseva¹, Magdalena Stoyanova¹, Radka Vrancheva¹, Anton Slavov¹, Anna Lante²

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Fruits have always been a constituent in the dietary recommendations, and have undeniable health promoting properties. Revealing the nutrient profile and biological activity of different fruit varieties is essential for the utilization of their potential beneficial activity.

The current study focuses on the detailed comparative analysis of three early- and two mid-ripening peach varieties: “Filina” (peach), “July Lady” (peach), “Laskava” (peach), “Gergana” (nectarine), and “Ufo-4” (flat peach). They were characterized in terms of essential nutrients as carbohydrates (sugars, pectin, and dietary fibers), proteins (including amino acid content) and lipids as well as organic acids, fat-soluble vitamins, carotenoids and chlorophyll. Mineral content was also determined. In addition, polyphenolic compounds and the related antioxidant activity was studied (FRAP, CUPRAC, DPPH and ABTS methods).

The methanolic extract of the peel seems to be richer to the studied biologically active substances compared to the fleshy part of the fruit. Among all varieties in Gergana and July Lady’s extracts were found the most anthocyanins (6.6 and 7.1 mg Cyd-3-glu/100 g fw, resp.). The total phenol content of the samples varied between 3.41 ± 0.05 and 157.97 ± 0.67 $\mu\text{gGAE}/100\text{g fw}$. The results of antioxidant analysis showed that “July Lady” variety possessed the highest antioxidant activity. Although, fruits are not a common source of proteins the amino acid analysis of the studied varieties revealed the moderate quality of the protein; lysine, serine, and arginine were the most abundant amino acids.

Overall, the results of this research confirm that the studied peach varieties have satisfactory nutritional value and are potential sources of biologically active substances.

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