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Special Issue

Innovative strategies enhancing nutraceutical properties of vegetables, and aromatic-medicinal plants and mushrooms

Guest Editor

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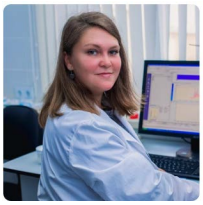

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Message from the Guest Editor

Dear Colleagues,

Vegetables, as well as aromatic-medicinal plants and mushrooms are very spread worldwide and subjected to the continuous search for innovative strategies aimed to make the management systems increasingly sustainable, mainly referring to the environmental protection, in order to get produce characterized by high nutraceutical and hygienic-sanitary properties. In the latter respect, the choice of effective innovative farming practices plays a pivotal role, thus drawing the scientific community attention and stimulating related research. Some examples of innovative strategies within the main crops systems, i.e. conventional, organic or soilless, are the following. Fertilization has a major impact on the quality and bioactive features of the food carried out, as all the essential macro- and micronutrients should be supplied in order to fulfill plant requirements for synthesizing and accumulating beneficial compounds and mineral nutrients. The use of beneficial microorganisms such as endophytic fungi (arbuscular mycorrhizal fungi, Trichoderma) or plant growth promoting bacteria, even interacting with those naturally present in the plants like the nitrogen-fixing symbiotic bacteria, may increase the plant and mushroom nutrient absorption, thus enhancing the produce quality and antioxidant properties. The biofortification with micronutrients, i.e. selenium, iodine, silicon and others, may encourage the plant and mushroom antioxidant synthesis.

Indeed, the several literature reports relevant to the present topics have not worked out all the issues

arisen and, therefore, in this interesting field of research plenty of challenges should be addressed. In the latter respect, a remarkable attention should be paid to the interactive dynamics between nutrient uptake, plant and mushroom development and synthesis of antioxidants. The latter are essential plant secondary metabolites acting in plant growth as well as in plant–microbe, plant–plant and plant-environment relationships, whose presence in significant concentrations also allows to produce vegetables labeled as functional food.

In this special issue, we warmly welcome articles (original research, reviews, modeling approaches, perspectives, opinions) that focus on innovative strategies affecting production, quality, antioxidant compounds and activity, and mineral composition of vegetables as well as aromatic-medicinal plants and mushrooms grown in open field or greenhouse, carried out upon investigations regarding the interactions between agronomical, biochemical, physiological, microbiological and genetic topics.

Prof. Dr. Gianluca Caruso, Dr. Nadezhda A. Golubkina, Assoc. Prof. Agnieszka Sekara and Assoc. Prof. Liubov Skrypnik

Guest Editor

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