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Soil, nickel and low nickel food

Ziad Al Chami (1), Ivana Cavoski (1), Donato Mondelli (2), Giancarlo Mimiola (1), and Teodoro Miano (2)

(1) Mediterranean Agronomic Institute of Bari - CIHEAM, Laboratory of Agricultural and Environmental Chemistry, Valenzano, Italy (alchami@iamb.it, +39 0804606305), (2) Dipartimento di Scienze del Suolo, della Pianta e degli Alimenti, Università degli Studi di Bari "Aldo Moro", Via Amendola 165/A, 70126 Bari, Italy.

Nickel is an ubiquitous trace element and occurs in soil, water, air and in the biosphere. Ni is an essential element for several plants, microorganisms and vertebrates.

Human requirement for Ni has not been conclusively demonstrated. Nickel is normally present in human tissues at low concentration and, under conditions of high exposure, these levels may increase significantly. Food is the major source of Ni exposure. Nickel is present in many food products, especially vegetables. The amount of Ni present in vegetables is increasing because of environmental contamination and cultural practices.

It has been demonstrated that the consumption of a Ni-rich diet can cause an increase of immunological disorders including Systemic Ni Allergy Syndrome (SNAS). The SNAS patients are currently treated with a diet that is closely Ni-free.

Therefore, there is a need to produce certified and guaranteed vegetables with a low Ni concentration in the market. The proposed research aims to develop new methods for vegetable production and innovative cultural practices through a suitable choice of agricultural soil, cultivar, amendments and fertilizers as well as good agricultural practices in order to reduce Ni plant uptake and its translocation to the edible plant parts and therefore to produce Ni-free food products for SNAS patients.