

BIOLOGICALLY ACTIVE MACRO- AND MICROELEMENTS SELECTION OF FORMS OF WALNUT *JUGLANS REGIA* L.

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Abstract

In the context of import substitution, the actual task is to produce breeding and seed products based on agricultural biotechnologies, as well as long-term field tests of the latest biotechnological and breeding forms of crops with specified characteristics, which is particularly noted in the Comprehensive program of biotechnology development in the Russian Federation for the period up to 2020.

The analysis of the literature data revealed that the study of the elemental composition of walnut domestic breeding forms were not carried out. The composition of the elements present in the kernel of 7 walnut cultivars from the Nikitsky Botanical garden, cultivated in soil-climatic conditions of the Crimea Peninsula, was determined using Inductively coupled plasma mass spectrometry (ISP-MS) and Inductively coupled plasma atomic emission spectroscopy (ICP-AEC).

It is established that walnut kernel contains significant amounts of: iron, manganese, zinc, boron and copper. It is revealed that the macro and microelements composition of the *Juglans regia* L. fruits kernel - Crimean selection is almost similar to that of the kernels of varieties of the walnut cultivated in Romania, USA and France, with the exception of increased content of Ca in the cores of the Crimean varieties.

Studied varieties of walnut are source of essential macronutrients and micronutrients, including: Ca, Zn, Cu, Mn, Fe, P and Mg, and can be used as components in the development of therapeutic diets for the prevention of osteomalacia, osteoporosis, anemia (hypochromic, microcytic), hypogonadism, and growth disorders in children.

Key words: *Nut crops, Breeding forms of the Crimean Peninsula, Elemental composition, Special diets.*