

Accumulation and Translocation of Copper and Gold Nanoparticles in *Petroselinum Crispum* Segments under Root Irrigation Conditions

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The relevance of studying the effect of metal nanoparticles on different biological objects and possible influence on human health is associated with their active use in various fields. Increasing production and consumption of nanoparticles leads to their release into the environment both with emissions into atmosphere and with wastewater. Accumulation of metal nanoparticles in soils, their translocation to plant segments and further transfer to other trophic levels depend on many conditions, including nanoparticles concentration, size, structure, form and composition. Present study reports the results of copper (CuNPs) and gold (AuNPs) nanoparticles effect on Parsley (*Petroselinum crispum*) under root irrigation. To determine copper and gold content in plants segments and soils ICP-OES/MS were applied. Accumulation of copper and gold in soil and their translocation in roots and leaves was different at their application in the concentration range 1-200 mg/L. Gold was accumulated in soil and transferred to plant's segments. Copper was mainly accumulated in soil and had low uptake in leaves. Both types of nanoparticles caused stress in parsley. At application of all CuNPs concentrations content of carotenoids and total chlorophyll in plants decreased. AuNPs at low concentrations stimulated increase of the content of pigments, but at concentrations higher than 10 mg/L reduced them.