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Title EN	<i>Accumulation and translocation of copper and gold nanoparticles in <i>Petroselinum crispum</i> segments under root irrigation conditions</i>
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Description	<p>The application of metal nanoparticles in the industry and medicine results in their release into the environment which can have a negative impact on human health. The effects of gold (AuNPs) and copper (CuNPs) nanoparticles at the concentration range of 1-200 mg/L on parsley (<i>Petroselinum crispum</i>) under conditions of root exposure and the translocation in roots and leaves were investigated in a ten-day experiment. The content of copper and gold in soil and plant segments was determined using ICP-OES and ICP-MS techniques, while the morphology of nanoparticles was analyzed using transmission electron microscopy. Differences in the nanoparticle uptake and translocation were observed: CuNPs mainly accumulated in soil (4.4-465 mg/kg), while accumulation in the leaves was at the control level. AuNPs mainly accumulated in soil (0.04 -108 mg/kg) followed by roots (0.05-45 mg/kg) and leaves (0.16-53 mg/kg). The influence of AuNPs and CuNPs on the biochemical parameters of parsley was on the content of carotenoids, the levels of chlorophyll, and antioxidant activity. Application of CuNPs even at the lowest concentration led to a significant reduction of carotenoids and total chlorophyll content. AuNPs at low concentrations promoted an increase in the content of carotenoids, however, they also significantly reduced it at concentrations higher than 10 mg/L. To our knowledge is the first study of the effect of metal nanoparticles on parsley.</p>