

INORGANIC ARSENIC SPECIATION ANALYSIS IN DIFFERENT TOMATO CULTIVARS (*SOLANUM LYCOPERSICUM* L.) AND INFLUENCE OF SILICON (SI) EXPOSURE

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Arsenic, tomato, crop safety, silicon

Elevated arsenic in soils raises concern regarding plant uptake and entry into wildlife and human food chains. Arsenic in water and agricultural land has arisen from application of pesticides. Silicon is added to tomato plants to improve water stress resistance. In this work we have evaluated the effect of As (III) and As(V), with or without Si, on the germination of eight cultivars of *Solanum lycopersicum* L. We have determined the number of seeds germinated and root lengths to find the most resistant cultivar and the more toxic species of arsenic and how Si affected germination and growth. All the tomato cultivars were also grown in garden soil for three months, then supplemented with As species, with or without Si. After 2 weeks they were harvested and fresh biomass was measured and As content was determined. The cultivars showed a remarkably different behavior towards the treatments; in general As uptake is low, so is the translocation with few exceptions. In a further experiment, As was supplemented (with or without Si) to the plants at the fruit production stage. The ripened fruits were collected after three months and the content of As in tomato fruits was measured.