



## **Metal contents of green salad grown upon metalliferous soils of the Province of Styria/ Austria**

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At metalliferous locations, weathering of ore veins as well as mine tailings from historic mining activities lead to metal accumulations in adjacent local soils. In case threshold values for agricultural use are exceeded, excavated house or road construction material has to be classified and deposited as hazardous waste. Legal thresholds, however, have been set due to hazards and environmental mobilities from anthropogenic pollution sources. In order to proof presumably lower soil to plant transfers of geogenic metal loads, pot experiments were done by planting seedlings of green salad (*lactuca sativa*) therein, which is known to be an accumulating green plant. Various fertilization regimes (NPK, PK, N, K, compost, and none) were applied to investigate the effect of nutrient supply upon metal transfers into roots and shoots.

In the greenhouse, seedlings of about 5 cm size were planted into substrates from metalliferous locations of the Province of Styria (Austria), harvested after 40 days at a size ready for sale, parted into roots and shoots, dried, milled, digested with nitric acid in closed vessels, and analyzed by ICP-OES.

With respect to data for grass or commercial composite feeds obtained in former studies, only slight accumulations were noted in case of Cd, Pb, and As, but none in case of Cr, Cu, Ni and Zn. Just slight differences between roots and shoots merged. High enrichments of Ni and Pb in both roots and shoots were achieved after additions of metal salt-solutions, however. Effects of various fertilization strategies upon yield and soil to plant transfer upon green salad grown in these metalliferous soils will be discussed.