



## **Transfer of heavy metals to biota after remediation of contaminated soils with calcareous residues.**

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A study was carried out to evaluate the assimilation of heavy metals by three types of horticultural plants (broccoli, lettuce and leek), different parts of which are destined for human and farm animals consumption (leaves, roots, fruits). Five consecutive crops of each vegetable were obtained in greenhouse. In a second stage, experiments were carried out with rabbits fed with such vegetables.

The plants were cultivated in four types of soil. The first one was contaminated by heavy metals (S1), the second was a uncontaminated soil (blank soil) (S2), the third was the material obtained by mixing S1 with residues coming from demolition and construction activities (S3); while the fourth was the result of remediating S1 with lime residues coming from quarries (S4).

The total metal content (As, Pb, Cd and Zn) of the soil samples, rizosphere, leached water and vegetable samples, were measured, and both the translocation and bioconcentration factors (TF and BCF, respectively) were calculated.

In the second stage, the effect caused in rabbits fed with the vegetables was monitorized using both external observation and the analysis of blood, urine, and the levels of metals in muscles, liver and kidney.

The statistical analysis of the results obtained showed that there were no significant differences in the heavy metal levels for the vegetables cultivated in S2, S3 and S4. The results for soil sample S1 did not have a normal distribution since the growing of the vegetables were not homogeneous and also strongly dependent on the type of vegetal. As regards the effect caused in rabbits, significant differences were observed for the animals fed with plants cultivated in S1 compared with the others.