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## Characterization of abandoned contaminated Valongo mining area at Portugal, by INAA

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At Sao Domingos mining (southern Portugal near Spanish border), we have collected soils and vascular plants growing there <sup>1-3</sup>. The values we found for arsenic in soils were between 400 and 3600 mg/kg. All the plants we could find growing there were: *Agrostis castellana* Boiss. & Reuter; *Corrigiola litoralis* L.; *Erica andevalensis* Cabezudo & Rivera; *Erica australis* L.; *Eucalyptus camaldulensis* Dehnh.; *Genista polyanthos* R. Roem. ex Willk.; *Juncus acutus* L.; *Nerium oleander* L.; *Nicotiana glauca* R.C. Graham; *Piptatherum miliaceum* (L.) Coss.; *Rumex scutatus* L. subsp. *Induratus*. The maximum values we have found for arsenic transfer from soil to these vascular plants was 0.3%, which is not sufficient to bioremediation purposes, i.e., seeding one of the plants in the arsenic contaminated area would not result in a large amount of arsenic removed from the soil. Therefore, we went to other mine (Valongo mine, northern Portugal, near Oporto) and we collected again soil and vascular plants which existed there. Soil results pointed out arsenic values up to 0.6%. The vascular plants which we found there are: *Agrostis curtisii* Kerguelen; *Agrostis fouilladei* P. Fourn.; *Amanita caesarea* Scop.; *Digitalis purpurea* L.; *Erica australis* L. subsp. *aragonensis* (Willk.) Cout.; *Erica cinerea* L.; *Juncus conglomeratus* L.; *Pteridium aquilinum* (L.) Kuhn; *Pterospartum tridentatum* (L.) Willk. subsp. *cantabricum* (Spach) Talavera & P.E.; *Ulex minor* Roth. We also collected some moss samples and water from the wells and small river of the area, to compare with previous water sampling at Sao Domingos mine, where we found arsenic values between 0.006 and 1.78 mg/L. The aim of this work is to determine arsenic (and other chemical elements) in the mosses and vascular plants collected at Valongo mine, by neutron activation analysis, in order to determine the transfer coefficients between soil and mosses or vascular plants and eventually find the suitable bioremediator for Sao Domingos mine.

### References:

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