292. Soil microbiota benefits from phytoremediation coupled to metal-resistant rhizobacteria

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Phytoremediation is used for requalifying soils contaminated with heavy metals (HM). Sunflower (*Helianthus annuus L.*) is one of the most studied species for the remediation of HM-contaminated soils. To increase the bioavailability of nutrients and of metals in soils, metal-resistant plant growth promoting rhizobacteria (PGPR) can be associated to phytoremediation strategies. Soil microbiota can benefit from this association due to the reduced exposure to HMs toxic effect. In this study, next-generation sequencing (NGS) was applied for investigating shifts in microbial communities of soil after HMs remediation by sunflowers inoculated with *Cupriavidus* sp. strain 1C2. Sunflower was also grown in a non-contaminated soil (control). *Actinobacteria* were dominant while *Proteobacteria* was the second most abundant phylum in both soils. *Acidobacteria* and *Nitrospirae* were present in higher relative abundance in the control soil. Results have shown that phytoremediation associated to PGPR induced changes in the contaminated soil microbial community: *Acidobacterium* (*Acidobacteria* phylum) and *Nitrospira* (*Nitrospirae* phylum) bacterial genera increased their abundance at the end of plant growth. These changes did not occur in the control soil, which presented a more stable bacterial community throughout the experiment. This research increases our knowledge on the relationship between soil microbiota and phytoremediation strategies achievements.

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