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**Interaction between lombricompost and AMF communities: consequences on metals accumulation and bioaccessibility in urban agriculture crops**

**Context**
- Two-thirds of the population leaves currently in urban areas, and this trend is increasing
- A will of self-growing food sprout in response to the economic/ecological crisis
- Soil food quality for urban agriculture (UA) is a major concern due to pollution
- Persistent trace metals (TM), such as cadmium (Cd) and lead (Pb) are common pollutants
- Antimony (Sb) is an emerging anthropic contaminant
- Biostimulators and organic amendments are used by gardeners to increase yields
- Their properties and reactivity can affect soil microorganisms and TM mobility

**Objectives**
- Study the effect of lombricompost on:
  1. arbuscular mycorrhizal fungal (AMF) communities in plant roots
  2. TM phytostabilization and human bioaccessibility.

**Material and methods**
- **Scale**: Microcosm pot experiment under greenhouse condition
- **Plant**: Organic leek (Allium porrum L.), 5 months
- **Soil**: Comparison of anthropic and geogenic contamination
- **Treatments**: a Lombricompost, to increase soil % OM by 1%
- **Measurements**: Total TM in plant
  - Bioaccessible fraction (BARGE method)
  - AMF community (Ruminia MISeq)

**Analysis**: Mother & Suchan for AMF sequences analysis

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**Results**

- **Effects of Lombricompost on Fungal community**
  - Important changes in root fungal community (both soils)
  - *Rhiophagus irregularis* increased (BZC+25% & NTE+40%)
  - Funneliformis mosseae disappeared in NTE soil
  - Decrease of other *Rhizophagus* species and Glomeraceae species.

- **Effects of Lombricompost on TM accumulation**
  - BZC soil (Anthropic Pb/Sb contamination)
    - Sb: No effect
    - Cd: Decrease
    - Pb: Increase
  - NTE soil (Geogenic Pb/Sb contamination)
    - Sb/Pb/Cd: No effect
  - Pb accumulation was low compared to soil total content

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**Lombricompost affected TM phytoavailability, but the human bioaccessibility was not affected in plant.**

**Important shift of symbiotic fungal communities, impacted species can influence TM mobility and phytostabilization. Field trials is needed, to enhance hazard recommendations for gardeners**