**Supplementary Table 1. Taxonomy of ASVs commonly found in samples in study and previous work. N= indicates the number of soil types the ASV was present in this study.**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| ASV | Phylum | Class | Order | Family | Genus | This study (n=) |
| 1 | Acidobacteriota | Acidobacteriae | Acidobacteriales | Acidobacteriaceae (Subgroup\_1) | Granulicella | 4 |
| 2 | Acidobacteriota | Acidobacteriae | Subgroup 2 | Subgroup 2 | Subgroup 2 | 4 |
| 3 | Acidobacteriota | Acidobacteriae | Subgroup 2 | Subgroup 2 | Subgroup 2 | 6 |
| 4 | Actinobacteriota | Thermoleophilia | Solirubrobacterales | Solirubrobacteraceae | Conexibacter | 4 |
| 5 | Actinobacteriota | Actinobacteria | Corynebacteriales | Mycobacteriaceae | Mycobacterium | 4 |
| 6 | Actinobacteriota | Actinobacteria | Frankiales | Acidothermaceae | Acidothermus | 4 |
| 7 | Proteobacteria | Alphaproteobacteria | Rhizobiales | Xanthobacteraceae | NA | 10 |
| 8 | Proteobacteria | Alphaproteobacteria | Rhizobiales | Xanthobacteraceae | Bradyrhizobium | 4 |
| 9 | Proteobacteria | Alphaproteobacteria | Rhizobiales | Xanthobacteraceae | NA | 5 |
| 10 | Proteobacteria | Alphaproteobacteria | Rhizobiales | Xanthobacteraceae | NA | 7 |
| **11** | **Verrucomicrobiota** | **Verrucomicrobiae** | **Chthoniobacterales** | **Chthoniobacteraceae** | **Candidatus Udaeobacter** | **5** |
| 12 | Proteobacteria | Gammaproteobacteria | WD260 | WD260 | WD260 | 4 |