**Table S1:** Relative abundance of soil microbial community at phylum level in microcosms amended with 1,2-DCB (A), 1,2-DCB and $CO_2$ (B), 1,2-DCB and $CH_4$ (C), 1,2-DCB, N and P (D), 1,2-DCB, $CO_2$, N and P (E), 1,2-DCB, $CH_4$, N and P (F) and no chemical amended (G).

| Original | A7 | A14 | A42 | A63 | B7 | B14 | B42 | B63 | C7 | C14 | C42 | C63 | D7 | D14 | D42 | D63 | E7 | E14 | E42 | E63 | F7 | F14 | F42 | F63 | G7 | G14 | G42 | G63 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Acidobacteria | 16.8% | 19.0% | 4.7% | 5.9% | 4.1% | 19.2% | 16.7% | 1.6% | 2.8% | 19.4% | 17.0% | 3.7% | 8.0% | 19.0% | 16.0% | 7.5% | 6.5% | 19.6% | 17.1% | 10.4% | 9.3% | 18.8% | 16.6% | 5.9% | 9.1% | 15.9% | 14.8% | 13.8% |
| Actinobacteria | 17.6% | 5.1% | 20.6% | 24.8% | 17.8% | 4.8% | 6.6% | 4.4% | 7.9% | 4.7% | 6.1% | 14.5% | 15.7% | 4.7% | 6.9% | 15.6% | 18.3% | 4.8% | 6.8% | 14.7% | 13.6% | 4.8% | 8.1% | 19.3% | 13.1% | 5.1% | 9.9% | 7.4% |
| Armatimonadetes | 0.5% | 1.7% | 0.3% | 0.3% | 0.3% | 1.7% | 1.4% | 0.2% | 0.2% | 1.7% | 1.4% | 0.2% | 0.2% | 1.6% | 1.4% | 0.2% | 0.4% | 1.6% | 1.5% | 0.2% | 0.2% | 1.7% | 1.3% | 0.3% | 0.2% | 0.8% | 0.5% | 0.3% |
| Bacteria_unclassified | 23.6% | 19.7% | 10.6% | 10.3% | 10.5% | 20.2% | 19.0% | 3.3% | 6.2% | 20.7% | 19.2% | 9.1% | 14.9% | 20.9% | 17.9% | 13.7% | 13.1% | 20.6% | 19.5% | 16.6% | 16.5% | 19.6% | 19.0% | 13.6% | 15.4% | 18.3% | 18.5% | 17.6% |
| Bacteroidetes | 2.4% | 4.8% | 0.5% | 0.3% | 0.3% | 5.0% | 4.4% | 0.2% | 0.4% | 5.2% | 4.2% | 0.4% | 0.4% | 4.9% | 3.8% | 0.5% | 0.5% | 5.1% | 4.1% | 0.7% | 0.5% | 4.8% | 4.0% | 0.4% | 0.6% | 3.5% | 2.1% | 1.4% |
| WPS-1 | 0.5% | 2.0% | 0.1% | 0.1% | 0.0% | 2.1% | 1.7% | 0.0% | 0.0% | 2.2% | 1.9% | 0.1% | 0.1% | 2.3% | 1.6% | 0.1% | 0.1% | 2.2% | 1.8% | 0.1% | 0.1% | 2.2% | 1.6% | 0.1% | 0.1% | 1.0% | 0.5% | 0.1% |
| Chloroflexi | 1.1% | 1.4% | 0.3% | 0.3% | 0.2% | 1.3% | 1.2% | 0.1% | 0.2% | 1.5% | 1.2% | 0.3% | 0.2% | 1.4% | 1.0% | 0.2% | 1.0% | 1.4% | 1.2% | 0.2% | 0.2% | 1.4% | 1.1% | 0.4% | 0.2% | 1.6% | 2.5% | 2.7% |
| Cyanobacteria | 0.1% | 1.2% | 0.3% | 0.1% | 0.2% | 1.1% | 1.0% | 0.0% | 0.1% | 1.4% | 1.0% | 0.1% | 0.1% | 1.3% | 0.9% | 0.1% | 0.1% | 1.2% | 1.1% | 0.1% | 0.1% | 1.1% | 1.0% | 0.2% | 0.1% | 0.5% | 0.2% | 0.1% |
| Euryarchaeota | 0.8% | 3.5% | 40.9% | 36.5% | 50.6% | 3.8% | 12.9% | 81.8% | 66.7% | 1.7% | 11.8% | 51.5% | 29.9% | 2.3% | 18.0% | 30.3% | 30.3% | 2.4% | 9.8% | 23.1% | 19.3% | 5.1% | 11.3% | 35.1% | 25.7% | 7.7% | 8.9% | 18.3% |
| Firmicutes | 1.0% | 2.8% | 6.7% | 6.0% | 6.0% | 2.5% | 2.7% | 2.1% | 3.6% | 2.6% | 2.7% | 5.4% | 5.4% | 2.7% | 2.5% | 3.9% | 10.5% | 2.7% | 2.9% | 4.2% | 5.1% | 2.6% | 3.3% | 7.7% | 4.9% | 4.5% | 3.6% | 3.2% |
| Gemmatimonadetes | 1.5% | 2.6% | 0.2% | 0.2% | 0.1% | 2.5% | 2.1% | 0.1% | 0.2% | 2.6% | 2.2% | 0.2% | 0.4% | 2.6% | 2.0% | 0.7% | 0.3% | 2.5% | 2.2% | 1.0% | 0.7% | 2.5% | 2.1% | 0.2% | 0.6% | 2.6% | 2.0% | 2.2% |
| Planctomycetes | 6.5% | 2.1% | 0.8% | 0.4% | 0.4% | 1.9% | 1.8% | 0.2% | 0.4% | 2.2% | 1.7% | 0.5% | 1.0% | 2.0% | 1.5% | 1.1% | 0.7% | 2.0% | 1.8% | 1.2% | 0.9% | 1.8% | 1.7% | 0.8% | 1.2% | 1.8% | 2.6% | 2.4% |
| Proteobacteria | 20.9% | 27.3% | 11.4% | 12.0% | 7.4% | 27.1% | 22.6% | 4.7% | 9.3% | 27.1% | 23.6% | 11.9% | 19.7% | 26.9% | 21.3% | 23.3% | 15.1% | 27.0% | 24.2% | 23.9% | 28.8% | 27.1% | 22.7% | 13.4% | 25.0% | 31.7% | 29.9% | 26.9% |
| Thaumarchaeota | 4.0% | 3.0% | 2.0% | 2.2% | 1.7% | 2.9% | 2.6% | 0.9% | 1.5% | 3.1% | 2.6% | 1.5% | 3.1% | 3.2% | 2.3% | 2.3% | 2.3% | 3.0% | 2.7% | 2.6% | 3.7% | 2.7% | 2.9% | 1.9% | 2.6% | 2.5% | 2.3% | 1.5% |
| Verrucomicrobia | 2.0% | 3.1% | 0.4% | 0.3% | 0.2% | 3.0% | 2.7% | 0.2% | 0.3% | 3.2% | 2.8% | 0.3% | 0.5% | 3.3% | 2.4% | 0.3% | 0.5% | 3.3% | 2.6% | 0.5% | 0.5% | 3.1% | 2.6% | 0.4% | 0.7% | 1.8% | 1.1% | 1.1% |
| Other* | 0.6% | 0.7% | 0.2% | 0.2% | 0.2% | 0.7% | 0.6% | 0.1% | 0.1% | 0.7% | 0.6% | 0.2% | 0.5% | 0.8% | 0.6% | 0.3% | 0.3% | 0.7% | 0.6% | 0.5% | 0.6% | 0.7% | 0.6% | 0.2% | 0.6% | 0.7% | 0.5% | 0.8% |

*Other: The sum of phyla with relative abundance less than 1%.

**Table S2:** Relative abundance of soil microbial community at class level in microcosms amended with 1,2-DCB (A), 1,2-DCB and $CO_2$ (B), 1,2-DCB and $CH_4$ (C), 1,2-DCB, N and P (D), 1,2-DCB, $CO_2$, N and P (E), 1,2-DCB, $CH_4$, N and P (F) and no chemical amended (G).

| Original | A7 | A14 | A42 | A63 | B7 | B14 | B42 | B63 | C7 | C14 | C42 | C63 | D7 | D14 | D42 | D63 | E7 | E14 | E42 | E63 | F7 | F14 | F42 | F63 | G7 | G14 | G42 | G63 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Acidimicrobiia | 1.0% | 0.2% | 0.4% | 0.6% | 0.4% | 0.2% | 0.2% | 0.1% | 0.2% | 0.2% | 0.2% | 0.4% | 0.8% | 0.2% | 0.2% | 0.9% | 1.0% | 0.2% | 0.2% | 1.0% | 0.9% | 0.2% | 0.2% | 0.6% | 1.0% | 0.2% | 0.4% | 0.3% |
| Acidobacteria_Gp1 | 1.4% | 1.4% | 0.1% | 0.2% | 0.1% | 1.4% | 1.1% | 0.1% | 0.1% | 1.5% | 1.2% | 0.1% | 0.4% | 1.4% | 1.0% | 0.4% | 0.3% | 1.5% | 1.2% | 0.5% | 0.5% | 1.4% | 1.1% | 0.2% | 0.5% | 1.7% | 1.3% | 1.4% |
| Acidobacteria_Gp16 | 2.4% | 1.0% | 1.7% | 3.0% | 2.3% | 1.0% | 1.2% | 0.5% | 1.1% | 1.0% | 1.3% | 1.6% | 3.1% | 1.0% | 1.5% | 3.1% | 2.7% | 1.1% | 1.5% | 3.6% | 3.3% | 0.9% | 1.6% | 2.8% | 3.1% | 1.7% | 3.5% | 3.4% |
| Acidobacteria_Gp3 | 0.7% | 0.7% | 0.1% | 0.1% | 0.0% | 0.7% | 0.7% | 0.0% | 0.1% | 0.7% | 0.6% | 0.0% | 0.1% | 0.6% | 0.5% | 0.1% | 0.1% | 0.7% | 0.6% | 0.1% | 0.1% | 0.6% | 0.5% | 0.1% | 0.1% | 0.6% | 0.8% | 1.0% |
| Acidobacteria_Gp4 | 1.3% | 2.3% | 0.1% | 0.1% | 0.0% | 2.3% | 1.8% | 0.0% | 0.0% | 2.4% | 2.0% | 0.1% | 0.3% | 2.3% | 1.8% | 0.2% | 0.1% | 2.3% | 2.0% | 0.2% | 0.2% | 2.4% | 1.8% | 0.0% | 0.3% | 1.5% | 0.8% | 0.5% |
| Acidobacteria_Gp6 | 7.2% | 5.2% | 1.8% | 1.8% | 1.0% | 5.2% | 4.4% | 0.5% | 0.9% | 5.2% | 4.4% | 1.1% | 2.6% | 5.2% | 4.3% | 2.4% | 2.1% | 5.3% | 4.7% | 3.9% | 3.3% | 5.1% | 4.3% | 1.7% | 3.3% | 5.2% | 5.1% | 4.7% |
| Acidobacteria_Gp7 | 0.4% | 1.2% | 0.1% | 0.1% | 0.1% | 1.3% | 1.1% | 0.0% | 0.1% | 1.3% | 1.1% | 0.1% | 0.3% | 1.2% | 0.9% | 0.2% | 0.1% | 1.3% | 1.0% | 0.4% | 0.4% | 1.3% | 1.0% | 0.1% | 0.3% | 0.8% | 0.5% | 0.4% |
| Acidobacteria_unclassified | 1.7% | 2.7% | 0.3% | 0.3% | 0.2% | 2.8% | 2.3% | 0.1% | 0.2% | 2.8% | 2.4% | 0.3% | 0.7% | 2.7% | 2.2% | 0.6% | 0.5% | 2.7% | 2.2% | 1.0% | 1.0% | 2.6% | 2.3% | 0.4% | 0.9% | 2.2% | 1.5% | 1.4% |
| Actinobacteria | 11.4% | 3.2% | 15.9% | 18.7% | 12.3% | 3.0% | 4.4% | 3.2% | 5.6% | 3.0% | 3.9% | 10.4% | 7.9% | 2.9% | 4.3% | 7.4% | 11.5% | 3.0% | 4.5% | 6.8% | 6.8% | 3.1% | 5.3% | 13.3% | 6.1% | 3.5% | 6.3% | 4.7% |
| Actinobacteria_unclassified | 1.7% | 0.4% | 1.0% | 1.2% | 1.2% | 0.4% | 0.5% | 0.3% | 0.5% | 0.4% | 0.5% | 0.9% | 2.3% | 0.4% | 0.6% | 2.1% | 1.7% | 0.4% | 0.5% | 2.2% | 2.0% | 0.4% | 0.6% | 1.2% | 2.0% | 0.4% | 0.9% | 0.7% |
| Alphaproteobacteria | 8.9% | 8.8% | 2.5% | 1.8% | 2.0% | 8.7% | 7.4% | 0.8% | 1.7% | 8.9% | 7.6% | 2.3% | 6.4% | 8.9% | 7.1% | 5.6% | 4.0% | 8.9% | 7.8% | 5.7% | 5.7% | 8.7% | 7.2% | 3.3% | 6.2% | 6.7% | 5.8% | 3.8% |
| Anaerolineae | 0.7% | 0.9% | 0.2% | 0.2% | 0.1% | 0.9% | 0.8% | 0.1% | 0.1% | 1.1% | 0.8% | 0.1% | 0.1% | 0.9% | 0.7% | 0.1% | 0.7% | 0.9% | 0.8% | 0.1% | 0.1% | 0.9% | 0.8% | 0.2% | 0.1% | 1.1% | 1.9% | 2.1% |
| Bacilli | 0.6% | 2.2% | 3.0% | 2.6% | 3.2% | 2.0% | 2.0% | 0.8% | 1.2% | 2.2% | 2.1% | 1.8% | 2.0% | 2.2% | 1.9% | 1.4% | 5.9% | 2.2% | 2.0% | 1.2% | 2.0% | 1.9% | 2.3% | 3.3% | 2.2% | 0.9% | 0.8% | 0.5% |
| Bacteria_unclassified | 23.6% | 19.7% | 10.6% | 10.3% | 10.5% | 20.2% | 19.0% | 3.3% | 6.2% | 20.7% | 19.2% | 9.1% | 14.9% | 20.9% | 17.9% | 13.7% | 13.1% | 20.6% | 19.5% | 16.6% | 16.5% | 19.6% | 19.0% | 13.6% | 15.4% | 18.3% | 18.5% | 17.6% |
| Betaproteobacteria | 5.1% | 6.6% | 2.0% | 1.7% | 1.2% | 6.6% | 5.5% | 0.6% | 1.4% | 6.5% | 5.7% | 1.5% | 3.0% | 6.5% | 4.9% | 2.8% | 2.4% | 6.5% | 5.6% | 3.9% | 4.3% | 6.5% | 5.4% | 2.1% | 4.1% | 7.4% | 5.0% | 4.2% |
| Blastocatellia | 0.4% | 3.7% | 0.1% | 0.1% | 0.0% | 3.6% | 3.4% | 0.0% | 0.1% | 3.7% | 3.3% | 0.1% | 0.1% | 3.7% | 3.1% | 0.1% | 0.1% | 4.0% | 3.3% | 0.1% | 0.0% | 3.7% | 3.3% | 0.1% | 0.1% | 1.5% | 0.6% | 0.2% |
| WPS-1_unclassified | 0.5% | 2.0% | 0.1% | 0.1% | 0.0% | 2.1% | 1.7% | 0.0% | 0.0% | 2.2% | 1.9% | 0.1% | 0.1% | 2.3% | 1.6% | 0.1% | 0.1% | 2.2% | 1.8% | 0.1% | 0.1% | 2.2% | 1.6% | 0.1% | 0.1% | 1.0% | 0.5% | 0.1% |
| Chitinophagia | 1.9% | 2.8% | 0.3% | 0.2% | 0.1% | 2.9% | 2.5% | 0.1% | 0.3% | 3.0% | 2.5% | 0.3% | 0.3% | 2.8% | 2.1% | 0.3% | 0.3% | 2.9% | 2.3% | 0.5% | 0.4% | 2.8% | 2.3% | 0.3% | 0.3% | 2.5% | 1.7% | 1.2% |
| Chthonomonadetes | 0.2% | 1.3% | 0.3% | 0.3% | 0.2% | 1.3% | 1.1% | 0.1% | 0.1% | 1.3% | 1.1% | 0.2% | 0.1% | 1.3% | 1.1% | 0.1% | 0.3% | 1.3% | 1.1% | 0.1% | 0.1% | 1.3% | 1.0% | 0.2% | 0.1% | 0.6% | 0.3% | 0.1% |
| Clostridia | 0.3% | 0.3% | 2.6% | 2.6% | 2.0% | 0.3% | 0.4% | 1.0% | 1.7% | 0.3% | 0.4% | 2.7% | 1.7% | 0.3% | 0.3% | 1.1% | 2.8% | 0.3% | 0.5% | 1.1% | 1.5% | 0.4% | 0.5% | 2.3% | 1.4% | 1.4% | 1.3% | 1.3% |
| Deltaproteobacteria | 1.3% | 2.0% | 5.2% | 7.0% | 3.3% | 1.9% | 1.6% | 2.6% | 5.0% | 1.8% | 1.9% | 6.8% | 5.3% | 1.7% | 1.7% | 5.3% | 6.4% | 1.7% | 2.4% | 7.6% | 5.4% | 1.8% | 2.1% | 6.2% | 5.1% | 10.7% | 15.0% | 16.3% |
| Gammaproteobacteria | 3.2% | 7.1% | 1.1% | 1.1% | 0.6% | 7.2% | 5.8% | 0.3% | 0.8% | 7.2% | 6.1% | 0.8% | 4.0% | 7.2% | 5.5% | 8.7% | 1.6% | 7.1% | 5.9% | 5.5% | 12.0% | 7.3% | 5.6% | 1.3% | 8.4% | 4.8% | 2.6% | 1.4% |
| Gemmatimonadetes | 1.5% | 2.5% | 0.2% | 0.2% | 0.1% | 2.4% | 2.0% | 0.1% | 0.2% | 2.5% | 2.1% | 0.2% | 0.4% | 2.5% | 1.9% | 0.7% | 0.3% | 2.4% | 2.1% | 0.9% | 0.7% | 2.4% | 2.0% | 0.2% | 0.5% | 2.5% | 2.0% | 2.1% |
| Methanobacteria | 0.1% | 3.5% | 40.4% | 36.3% | 50.1% | 3.8% | 12.8% | 81.7% | 66.4% | 1.6% | 11.7% | 51.1% | 29.6% | 2.3% | 17.9% | 29.8% | 29.7% | 2.4% | 9.7% | 22.6% | 19.0% | 5.1% | 11.2% | 34.5% | 25.0% | 7.1% | 8.5% | 17.3% |
| Negativicutes | 0.0% | 0.1% | 0.6% | 0.4% | 0.4% | 0.0% | 0.0% | 0.1% | 0.4% | 0.0% | 0.1% | 0.4% | 1.4% | 0.1% | 0.1% | 1.1% | 1.2% | 0.1% | 0.2% | 1.4% | 1.3% | 0.2% | 0.3% | 1.4% | 1.0% | 1.8% | 1.1% | 0.9% |
| Nitrososphaerales | 4.0% | 2.8% | 2.0% | 2.2% | 1.7% | 2.6% | 2.3% | 0.9% | 1.5% | 2.8% | 2.4% | 1.5% | 3.1% | 2.9% | 2.1% | 2.3% | 2.2% | 2.8% | 2.5% | 2.6% | 3.6% | 2.5% | 2.6% | 1.9% | 2.6% | 2.4% | 2.3% | 1.5% |

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Planctomycetacia | 6.4% | 2.0% | 0.7% | 0.4% | 0.4% | 1.9% | 1.8% | 0.2% | 0.4% | 2.1% | 1.6% | 0.5% | 1.0% | 1.9% | 1.5% | 1.0% | 0.7% | 1.9% | 1.8% | 1.1% | 0.8% | 1.8% | 1.7% | 0.7% | 1.1% | 1.8% | 2.5% | 2.3% |
| Proteobacteria_unclassified | 2.3% | 2.7% | 0.6% | 0.4% | 0.3% | 2.7% | 2.1% | 0.2% | 0.4% | 2.8% | 2.2% | 0.4% | 0.9% | 2.6% | 1.9% | 0.8% | 0.7% | 2.6% | 2.4% | 1.1% | 1.3% | 2.6% | 2.2% | 0.5% | 1.2% | 1.9% | 1.5% | 1.2% |
| Spartobacteria | 0.5% | 1.1% | 0.1% | 0.1% | 0.1% | 1.0% | 1.0% | 0.1% | 0.1% | 1.1% | 1.0% | 0.1% | 0.3% | 1.2% | 0.9% | 0.2% | 0.2% | 1.2% | 1.0% | 0.3% | 0.3% | 1.1% | 1.0% | 0.1% | 0.5% | 0.5% | 0.3% | 0.2% |
| Subdivision3 | 0.7% | 0.9% | 0.1% | 0.1% | 0.0% | 1.0% | 0.9% | 0.1% | 0.1% | 1.1% | 0.9% | 0.1% | 0.1% | 1.1% | 0.7% | 0.0% | 0.1% | 1.1% | 0.8% | 0.1% | 0.0% | 1.0% | 0.8% | 0.1% | 0.1% | 0.7% | 0.5% | 0.7% |
| Thermoleophilia | 3.5% | 1.3% | 3.3% | 4.2% | 3.9% | 1.2% | 1.5% | 0.8% | 1.5% | 1.1% | 1.5% | 2.8% | 4.6% | 1.2% | 1.8% | 5.1% | 4.1% | 1.2% | 1.6% | 4.7% | 3.9% | 1.2% | 2.0% | 4.2% | 4.0% | 1.0% | 2.2% | 1.7% |
| Other* | 4.8% | 7.3% | 2.7% | 2.0% | 2.0% | 7.2% | 6.5% | 1.0% | 1.7% | 7.7% | 6.3% | 2.1% | 2.2% | 7.7% | 5.9% | 2.3% | 3.2% | 7.4% | 6.6% | 2.9% | 2.5% | 7.0% | 6.3% | 3.1% | 3.0% | 5.5% | 4.1% | 4.7% |

*Other: The sum of classes with relative abundance less than 1%.

**Table S3:** Relative abundance of soil microbial community at order level in microcosms amended with 1,2-DCB (A), 1,2-DCB and $CO_2$ (B), 1,2-DCB and $CH_4$ (C), 1,2-DCB, N and P (D), 1,2-DCB, $CO_2$, N and P (E), 1,2-DCB, $CH_4$, N and P (F) and no chemical amended (G).

| Original | A7 | A14 | A42 | A63 | B7 | B14 | B42 | B63 | C7 | C14 | C42 | C63 | D7 | D14 | D42 | D63 | E7 | E14 | E42 | E63 | F7 | F14 | F42 | F63 | G7 | G14 | G42 | G63 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Acidobacteria_unclassified | 1.7% | 2.7% | 0.3% | 0.3% | 0.2% | 2.8% | 2.3% | 0.1% | 0.2% | 2.8% | 2.4% | 0.3% | 0.7% | 2.7% | 2.2% | 0.6% | 0.5% | 2.7% | 2.2% | 1.0% | 1.0% | 2.6% | 2.3% | 0.4% | 0.9% | 2.2% | 1.5% | 1.4% |
| Actinobacteria_unclassified | 1.7% | 0.4% | 1.0% | 1.2% | 1.2% | 0.4% | 0.5% | 0.3% | 0.5% | 0.4% | 0.5% | 0.9% | 2.3% | 0.4% | 0.6% | 2.1% | 1.7% | 0.4% | 0.5% | 2.2% | 2.0% | 0.4% | 0.6% | 1.2% | 2.0% | 0.4% | 0.9% | 0.7% |
| Bacillales | 0.6% | 2.2% | 2.9% | 2.6% | 3.2% | 2.0% | 2.0% | 0.8% | 1.2% | 2.2% | 2.1% | 1.8% | 2.0% | 2.1% | 1.9% | 1.4% | 5.9% | 2.1% | 1.9% | 1.2% | 2.0% | 1.9% | 2.3% | 3.3% | 2.1% | 0.8% | 0.8% | 0.5% |
| Bacteria_unclassified | 23.6% | 19.7% | 10.6% | 10.3% | 10.5% | 20.2% | 19.0% | 3.3% | 6.2% | 20.7% | 19.2% | 9.1% | 14.9% | 20.9% | 17.9% | 13.7% | 13.1% | 20.6% | 19.5% | 16.6% | 16.5% | 19.6% | 19.0% | 13.6% | 15.4% | 18.3% | 18.5% | 17.6% |
| Betaproteobacteria_unclassified | 3.0% | 3.0% | 0.9% | 0.8% | 0.6% | 3.0% | 2.5% | 0.2% | 0.7% | 3.1% | 2.6% | 0.5% | 1.2% | 3.0% | 2.3% | 1.2% | 0.9% | 3.0% | 2.6% | 1.6% | 1.7% | 3.0% | 2.4% | 0.9% | 1.5% | 2.9% | 1.8% | 1.5% |
| Blastocatellales | 0.4% | 3.7% | 0.1% | 0.1% | 0.0% | 3.6% | 3.4% | 0.0% | 0.1% | 3.7% | 3.3% | 0.1% | 0.1% | 3.7% | 3.1% | 0.1% | 0.1% | 4.0% | 3.3% | 0.1% | 0.0% | 3.7% | 3.3% | 0.1% | 0.1% | 1.5% | 0.6% | 0.2% |
| Burkholderiales | 1.9% | 3.2% | 1.0% | 0.8% | 0.5% | 3.1% | 2.6% | 0.4% | 0.7% | 3.0% | 2.7% | 0.9% | 1.7% | 3.0% | 2.4% | 1.5% | 1.3% | 3.1% | 2.8% | 2.2% | 2.5% | 3.1% | 2.7% | 1.1% | 2.5% | 4.1% | 2.9% | 2.6% |
| WPS-1_unclassified | 0.5% | 2.0% | 0.1% | 0.1% | 0.0% | 2.1% | 1.7% | 0.0% | 0.0% | 2.2% | 1.9% | 0.1% | 0.1% | 2.3% | 1.6% | 0.1% | 0.1% | 2.2% | 1.8% | 0.1% | 0.1% | 2.2% | 1.6% | 0.1% | 0.1% | 1.0% | 0.5% | 0.1% |
| Chitinophagales | 1.9% | 2.8% | 0.3% | 0.2% | 0.1% | 2.9% | 2.5% | 0.1% | 0.3% | 3.0% | 2.5% | 0.3% | 0.3% | 2.8% | 2.1% | 0.3% | 0.3% | 2.9% | 2.3% | 0.5% | 0.4% | 2.8% | 2.3% | 0.3% | 0.3% | 2.5% | 1.7% | 1.2% |
| Clostridiales | 0.3% | 0.3% | 2.4% | 2.4% | 2.0% | 0.3% | 0.4% | 1.0% | 1.5% | 0.2% | 0.4% | 2.6% | 1.7% | 0.3% | 0.3% | 1.1% | 2.6% | 0.2% | 0.4% | 1.0% | 1.4% | 0.4% | 0.5% | 2.2% | 1.3% | 1.1% | 1.1% | 1.2% |
| Desulfuromonadales | 0.1% | 0.2% | 0.2% | 0.2% | 0.1% | 0.1% | 0.1% | 0.1% | 0.1% | 0.1% | 0.1% | 0.1% | 0.0% | 0.1% | 0.1% | 0.1% | 0.1% | 0.1% | 0.1% | 0.1% | 0.1% | 0.1% | 0.1% | 0.1% | 0.1% | 1.5% | 0.8% | 2.2% |
| Gaiellales | 1.5% | 0.6% | 1.0% | 1.4% | 1.3% | 0.6% | 0.7% | 0.3% | 0.5% | 0.5% | 0.7% | 1.0% | 1.9% | 0.6% | 0.8% | 2.4% | 2.0% | 0.6% | 0.7% | 2.2% | 1.8% | 0.5% | 0.9% | 1.6% | 1.8% | 0.4% | 0.9% | 0.7% |
| Gemmatimonadales | 1.5% | 2.5% | 0.2% | 0.2% | 0.1% | 2.4% | 2.0% | 0.1% | 0.2% | 2.5% | 2.1% | 0.2% | 0.4% | 2.5% | 1.9% | 0.7% | 0.3% | 2.4% | 2.1% | 0.9% | 0.7% | 2.4% | 2.0% | 0.2% | 0.5% | 2.5% | 2.0% | 2.1% |
| Gp16 | 2.4% | 1.0% | 1.7% | 3.0% | 2.3% | 1.0% | 1.2% | 0.5% | 1.1% | 1.0% | 1.3% | 1.6% | 3.1% | 1.0% | 1.5% | 3.1% | 2.7% | 1.1% | 1.5% | 3.6% | 3.3% | 0.9% | 1.6% | 2.8% | 3.1% | 1.7% | 3.5% | 3.4% |
| Gp4 | 1.3% | 2.3% | 0.1% | 0.1% | 0.0% | 2.3% | 1.8% | 0.0% | 0.0% | 2.4% | 2.0% | 0.1% | 0.3% | 2.3% | 1.8% | 0.2% | 0.1% | 2.3% | 2.0% | 0.2% | 0.2% | 2.4% | 1.8% | 0.0% | 0.3% | 1.5% | 0.8% | 0.5% |
| Gp6 | 7.2% | 5.2% | 1.8% | 1.8% | 1.0% | 5.2% | 4.4% | 0.5% | 0.9% | 5.2% | 4.4% | 1.1% | 2.6% | 5.2% | 4.3% | 2.4% | 2.1% | 5.3% | 4.7% | 3.9% | 3.3% | 5.1% | 4.3% | 1.7% | 3.3% | 5.2% | 5.1% | 4.7% |
| Methanobacteriales | 0.1% | 3.5% | 40.4% | 36.3% | 50.1% | 3.8% | 12.8% | 81.7% | 66.4% | 1.6% | 11.7% | 51.1% | 29.6% | 2.3% | 17.9% | 29.8% | 29.7% | 2.4% | 9.7% | 22.6% | 19.0% | 5.1% | 11.2% | 34.5% | 25.0% | 7.1% | 8.5% | 17.3% |
| Micrococcales | 1.8% | 0.8% | 3.2% | 3.3% | 2.8% | 0.8% | 1.0% | 0.4% | 0.8% | 0.8% | 1.0% | 1.7% | 1.6% | 0.7% | 1.1% | 1.3% | 2.0% | 0.8% | 1.2% | 1.4% | 1.5% | 0.8% | 1.4% | 2.8% | 1.4% | 1.4% | 2.8% | 1.6% |
| Myxococcales | 0.9% | 1.3% | 4.6% | 6.7% | 3.1% | 1.3% | 1.2% | 2.5% | 4.8% | 1.2% | 1.3% | 6.6% | 4.7% | 1.2% | 1.3% | 5.0% | 6.0% | 1.2% | 1.8% | 7.3% | 5.0% | 1.2% | 1.7% | 5.9% | 4.7% | 8.8% | 13.4% | 13.6% |
| Nitrososphaeraceae | 4.0% | 2.8% | 2.0% | 2.2% | 1.7% | 2.6% | 2.3% | 0.9% | 1.5% | 2.8% | 2.4% | 1.5% | 3.1% | 2.9% | 2.1% | 2.3% | 2.2% | 2.8% | 2.5% | 2.6% | 3.6% | 2.5% | 2.6% | 1.9% | 2.6% | 2.4% | 2.3% | 1.5% |
| Planctomycetales | 4.3% | 1.3% | 0.3% | 0.1% | 0.1% | 1.3% | 1.2% | 0.1% | 0.2% | 1.4% | 1.0% | 0.2% | 0.4% | 1.2% | 0.9% | 0.5% | 0.2% | 1.3% | 1.1% | 0.6% | 0.3% | 1.2% | 1.0% | 0.2% | 0.5% | 1.1% | 1.8% | 1.7% |
| Propionibacteriales | 3.3% | 0.7% | 5.7% | 8.7% | 5.3% | 0.7% | 1.4% | 1.5% | 2.2% | 0.6% | 1.2% | 4.5% | 3.0% | 0.6% | 1.5% | 2.8% | 4.3% | 0.7% | 1.4% | 2.9% | 2.7% | 0.8% | 1.6% | 4.2% | 2.0% | 0.8% | 1.7% | 1.5% |
| Proteobacteria_unclassified | 2.3% | 2.7% | 0.6% | 0.4% | 0.3% | 2.7% | 2.1% | 0.2% | 0.4% | 2.8% | 2.2% | 0.4% | 0.9% | 2.6% | 1.9% | 0.8% | 0.7% | 2.6% | 2.4% | 1.1% | 1.3% | 2.6% | 2.2% | 0.5% | 1.2% | 1.9% | 1.5% | 1.2% |
| Pseudomonadales | 0.0% | 0.5% | 0.0% | 0.0% | 0.0% | 0.6% | 0.4% | 0.0% | 0.0% | 0.6% | 0.5% | 0.0% | 0.0% | 0.6% | 0.4% | 6.0% | 0.1% | 0.5% | 0.5% | 0.0% | 7.4% | 0.6% | 0.4% | 0.5% | 4.9% | 0.2% | 0.0% | 0.0% |
| Pseudonocardiales | 1.9% | 0.3% | 3.1% | 3.9% | 2.0% | 0.2% | 0.5% | 0.6% | 0.9% | 0.2% | 0.4% | 1.7% | 0.8% | 0.2% | 0.4% | 0.8% | 1.4% | 0.2% | 0.4% | 0.6% | 0.6% | 0.2% | 0.5% | 2.2% | 0.5% | 0.3% | 0.3% | 0.3% |
| Rhizobiales | 4.5% | 1.6% | 1.0% | 0.7% | 0.6% | 1.5% | 1.3% | 0.3% | 0.5% | 1.5% | 1.4% | 0.8% | 2.2% | 1.5% | 1.2% | 1.9% | 1.4% | 1.5% | 1.4% | 2.6% | 2.6% | 1.6% | 1.3% | 1.4% | 2.8% | 1.7% | 2.4% | 1.7% |

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sphingomonadales | 1.9% | 4.9% | 0.9% | 0.7% | 0.9% | 4.8% | 4.1% | 0.4% | 0.8% | 4.8% | 4.1% | 1.0% | 3.2% | 5.0% | 3.9% | 2.8% | 1.8% | 4.9% | 4.4% | 2.0% | 2.1% | 4.7% | 3.9% | 1.2% | 2.3% | 3.3% | 2.2% | 1.2% |
| Xanthomonadales | 1.8% | 4.1% | 0.6% | 0.4% | 0.3% | 4.2% | 3.3% | 0.2% | 0.5% | 4.2% | 3.5% | 0.4% | 3.5% | 4.3% | 3.3% | 2.2% | 1.1% | 4.2% | 3.4% | 5.0% | 4.0% | 4.5% | 3.3% | 0.3% | 2.9% | 3.4% | 1.8% | 1.0% |
| Other* | 23.6% | 23.9% | 13.0% | 11.3% | 9.4% | 23.5% | 21.1% | 3.5% | 6.8% | 24.4% | 21.2% | 9.5% | 13.7% | 23.9% | 19.3% | 12.8% | 15.2% | 23.8% | 21.2% | 13.9% | 12.9% | 23.1% | 21.0% | 14.7% | 13.7% | 19.9% | 17.9% | 16.8% |

*Other: The sum of orders with relative abundance less than 2%.

**Table S4:** Relative abundance of soil microbial community at family level in microcosms amended with 1,2-DCB (A), 1,2-DCB and $CO_2$ (B), 1,2-DCB and $CH_4$ (C), 1,2-DCB, N and P (D), 1,2-DCB, $CO_2$, N and P (E), 1,2-DCB, $CH_4$, N and P (F) and no chemical amended (G).

| Original | A7 | A14 | A42 | A63 | B7 | B14 | B42 | B63 | C7 | C14 | C42 | C63 | D7 | D14 | D42 | D63 | E7 | E14 | E42 | E63 | F7 | F14 | F42 | F63 | G7 | G14 | G42 | G63 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Acidobacteria_unclassified | 1.7% | 2.7% | 0.3% | 0.3% | 0.2% | 2.8% | 2.3% | 0.1% | 0.2% | 2.8% | 2.4% | 0.3% | 0.7% | 2.7% | 2.2% | 0.6% | 0.5% | 2.7% | 2.2% | 1.0% | 1.0% | 2.6% | 2.3% | 0.4% | 0.9% | 2.2% | 1.5% | 1.4% |
| Actinobacteria_unclassified | 1.7% | 0.4% | 1.0% | 1.2% | 1.2% | 0.4% | 0.5% | 0.3% | 0.5% | 0.4% | 0.5% | 0.9% | 2.3% | 0.4% | 0.6% | 2.1% | 1.7% | 0.4% | 0.5% | 2.2% | 2.0% | 0.4% | 0.6% | 1.2% | 2.0% | 0.4% | 0.9% | 0.7% |
| Anaeromyxobacteraceae | 0.0% | 0.4% | 2.7% | 4.3% | 1.8% | 0.3% | 0.3% | 1.3% | 2.2% | 0.2% | 0.5% | 3.8% | 2.5% | 0.2% | 0.5% | 2.9% | 3.6% | 0.3% | 0.7% | 4.0% | 2.6% | 0.3% | 0.7% | 3.0% | 2.6% | 4.2% | 6.5% | 6.3% |
| Bacillaceae_1 | 0.2% | 0.2% | 0.8% | 0.9% | 1.3% | 0.2% | 0.3% | 0.3% | 0.4% | 0.2% | 0.2% | 0.6% | 0.6% | 0.2% | 0.3% | 0.5% | 2.1% | 0.2% | 0.2% | 0.4% | 0.7% | 0.2% | 0.3% | 1.0% | 0.8% | 0.1% | 0.3% | 0.2% |
| Bacillales_unclassified | 0.3% | 1.1% | 1.0% | 0.9% | 1.3% | 0.9% | 1.0% | 0.3% | 0.4% | 1.1% | 1.0% | 0.7% | 0.9% | 1.1% | 0.9% | 0.6% | 2.2% | 1.1% | 0.9% | 0.5% | 0.8% | 0.9% | 1.1% | 1.1% | 0.9% | 0.4% | 0.3% | 0.2% |
| Bacteria_unclassified | 23.6% | 19.7% | 10.6% | 10.3% | 10.5% | 20.2% | 19.0% | 3.3% | 6.2% | 20.7% | 19.2% | 9.1% | 14.9% | 20.9% | 17.9% | 13.7% | 13.1% | 20.6% | 19.5% | 16.6% | 16.5% | 19.6% | 19.0% | 13.6% | 15.4% | 18.3% | 18.5% | 17.6% |
| Betaproteobacteria_unclassified | 3.0% | 3.0% | 0.9% | 0.8% | 0.6% | 3.0% | 2.5% | 0.2% | 0.7% | 3.1% | 2.6% | 0.5% | 1.2% | 3.0% | 2.3% | 1.2% | 0.9% | 3.0% | 2.6% | 1.6% | 1.7% | 3.0% | 2.4% | 0.9% | 1.5% | 2.9% | 1.8% | 1.5% |
| Blastocatellaceae | 0.4% | 3.4% | 0.1% | 0.1% | 0.0% | 3.3% | 3.1% | 0.0% | 0.1% | 3.4% | 3.0% | 0.1% | 0.1% | 3.4% | 2.8% | 0.1% | 0.1% | 3.6% | 3.0% | 0.1% | 0.0% | 3.4% | 3.0% | 0.1% | 0.1% | 1.4% | 0.6% | 0.2% |
| WPS-1_unclassified | 0.5% | 2.0% | 0.1% | 0.1% | 0.0% | 2.1% | 1.7% | 0.0% | 0.0% | 2.2% | 1.9% | 0.1% | 0.1% | 2.3% | 1.6% | 0.1% | 0.1% | 2.2% | 1.8% | 0.1% | 0.1% | 2.2% | 1.6% | 0.1% | 0.1% | 1.0% | 0.5% | 0.1% |
| Chitinophagaceae | 1.9% | 2.8% | 0.3% | 0.2% | 0.1% | 2.9% | 2.5% | 0.1% | 0.3% | 3.0% | 2.5% | 0.3% | 0.3% | 2.8% | 2.1% | 0.3% | 0.3% | 2.9% | 2.3% | 0.5% | 0.4% | 2.8% | 2.3% | 0.3% | 0.3% | 2.5% | 1.7% | 1.2% |
| Comamonadaceae | 0.6% | 1.6% | 0.4% | 0.4% | 0.2% | 1.6% | 1.4% | 0.2% | 0.4% | 1.6% | 1.5% | 0.3% | 1.0% | 1.6% | 1.2% | 1.0% | 0.7% | 1.7% | 1.4% | 1.3% | 1.4% | 1.7% | 1.4% | 0.4% | 1.3% | 2.7% | 2.0% | 2.1% |
| Gaiellaceae | 1.5% | 0.6% | 1.0% | 1.4% | 1.3% | 0.6% | 0.7% | 0.3% | 0.5% | 0.5% | 0.7% | 1.0% | 1.9% | 0.6% | 0.8% | 2.4% | 2.0% | 0.6% | 0.7% | 2.2% | 1.8% | 0.5% | 0.9% | 1.6% | 1.8% | 0.4% | 0.9% | 0.7% |
| Gemmataceae | 2.0% | 0.4% | 0.0% | 0.0% | 0.0% | 0.4% | 0.4% | 0.0% | 0.0% | 0.4% | 0.4% | 0.0% | 0.2% | 0.4% | 0.3% | 0.2% | 0.1% | 0.5% | 0.4% | 0.2% | 0.1% | 0.5% | 0.3% | 0.0% | 0.2% | 0.4% | 0.7% | 0.7% |
| Gemmatimonadaceae | 1.5% | 2.5% | 0.2% | 0.2% | 0.1% | 2.4% | 2.0% | 0.1% | 0.2% | 2.5% | 2.1% | 0.2% | 0.4% | 2.5% | 1.9% | 0.7% | 0.3% | 2.4% | 2.1% | 0.9% | 0.7% | 2.4% | 2.0% | 0.2% | 0.5% | 2.5% | 2.0% | 2.1% |
| Geobacteraceae | 0.0% | 0.2% | 0.2% | 0.1% | 0.1% | 0.1% | 0.1% | 0.1% | 0.1% | 0.1% | 0.1% | 0.1% | 0.0% | 0.1% | 0.1% | 0.1% | 0.1% | 0.1% | 0.1% | 0.1% | 0.1% | 0.1% | 0.1% | 0.1% | 0.1% | 1.3% | 0.7% | 2.0% |
| Gp16_unclassified | 2.4% | 1.0% | 1.7% | 3.0% | 2.3% | 1.0% | 1.2% | 0.5% | 1.1% | 1.0% | 1.3% | 1.6% | 3.1% | 1.0% | 1.5% | 3.1% | 2.7% | 1.1% | 1.5% | 3.6% | 3.3% | 0.9% | 1.6% | 2.8% | 3.1% | 1.7% | 3.5% | 3.4% |
| Gp4_unclassified | 1.3% | 2.3% | 0.1% | 0.1% | 0.0% | 2.3% | 1.8% | 0.0% | 0.0% | 2.4% | 2.0% | 0.1% | 0.3% | 2.3% | 1.8% | 0.2% | 0.1% | 2.3% | 2.0% | 0.2% | 0.2% | 2.4% | 1.8% | 0.0% | 0.3% | 1.5% | 0.8% | 0.5% |
| Gp6_unclassified | 7.2% | 5.2% | 1.8% | 1.8% | 1.0% | 5.2% | 4.4% | 0.5% | 0.9% | 5.2% | 4.4% | 1.1% | 2.6% | 5.2% | 4.3% | 2.4% | 2.1% | 5.3% | 4.7% | 3.9% | 3.3% | 5.1% | 4.3% | 1.7% | 3.3% | 5.2% | 5.1% | 4.7% |
| Intrasporangiaceae | 1.0% | 0.6% | 1.8% | 2.2% | 1.8% | 0.6% | 0.6% | 0.3% | 0.5% | 0.6% | 0.7% | 1.0% | 1.2% | 0.5% | 0.7% | 1.0% | 1.3% | 0.5% | 0.9% | 1.0% | 1.1% | 0.6% | 1.0% | 1.8% | 1.0% | 0.8% | 1.8% | 1.3% |
| Methanobacteriaceae | 0.1% | 3.5% | 40.4% | 36.3% | 50.1% | 3.8% | 12.8% | 81.7% | 66.4% | 1.6% | 11.7% | 51.1% | 29.6% | 2.3% | 17.9% | 29.8% | 29.7% | 2.4% | 9.7% | 22.6% | 19.0% | 5.1% | 11.2% | 34.5% | 25.0% | 7.1% | 8.5% | 17.3% |
| Myxococcales_unclassified | 0.8% | 0.8% | 1.9% | 2.4% | 1.3% | 0.8% | 0.7% | 1.1% | 2.6% | 0.8% | 0.8% | 2.7% | 2.1% | 0.8% | 0.7% | 2.0% | 2.4% | 0.8% | 1.0% | 3.2% | 2.3% | 0.8% | 0.9% | 2.8% | 2.0% | 4.5% | 6.9% | 7.3% |
| Nitrososphaera | 4.0% | 2.8% | 2.0% | 2.2% | 1.7% | 2.6% | 2.3% | 0.9% | 1.5% | 2.8% | 2.4% | 1.5% | 3.1% | 2.9% | 2.1% | 2.3% | 2.2% | 2.8% | 2.5% | 2.6% | 3.6% | 2.5% | 2.6% | 1.9% | 2.6% | 2.4% | 2.3% | 1.5% |
| Nocardioidaceae | 2.4% | 0.6% | 5.7% | 8.7% | 5.3% | 0.7% | 1.3% | 1.5% | 2.2% | 0.5% | 1.2% | 4.4% | 2.9% | 0.5% | 1.5% | 2.7% | 4.2% | 0.6% | 1.4% | 2.8% | 2.6% | 0.7% | 1.6% | 4.2% | 2.0% | 0.7% | 1.5% | 1.3% |
| Proteobacteria_unclassified | 2.3% | 2.7% | 0.6% | 0.4% | 0.3% | 2.7% | 2.1% | 0.2% | 0.4% | 2.8% | 2.2% | 0.4% | 0.9% | 2.6% | 1.9% | 0.8% | 0.7% | 2.6% | 2.4% | 1.1% | 1.3% | 2.6% | 2.2% | 0.5% | 1.2% | 1.9% | 1.5% | 1.2% |
| Pseudomonadaceae | 0.0% | 0.4% | 0.0% | 0.0% | 0.0% | 0.4% | 0.3% | 0.0% | 0.0% | 0.4% | 0.4% | 0.0% | 0.0% | 0.4% | 0.3% | 6.0% | 0.1% | 0.4% | 0.3% | 0.0% | 7.4% | 0.4% | 0.3% | 0.5% | 4.9% | 0.1% | 0.0% | 0.0% |
| Pseudonocardiaceae | 1.9% | 0.3% | 3.1% | 3.9% | 2.0% | 0.2% | 0.5% | 0.6% | 0.9% | 0.2% | 0.4% | 1.7% | 0.8% | 0.2% | 0.4% | 0.8% | 1.4% | 0.2% | 0.4% | 0.6% | 0.6% | 0.2% | 0.5% | 2.2% | 0.5% | 0.3% | 0.3% | 0.3% |

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Rhizobiales_unclassified | 2.2% | 0.7% | 0.4% | 0.3% | 0.2% | 0.8% | 0.7% | 0.1% | 0.2% | 0.8% | 0.7% | 0.3% | 1.0% | 0.8% | 0.6% | 0.8% | 0.6% | 0.8% | 0.7% | 1.2% | 1.3% | 0.8% | 0.6% | 0.5% | 1.3% | 0.8% | 1.0% | 0.8% |
| Sphingomonadaceae | 1.6% | 3.8% | 0.8% | 0.5% | 0.7% | 3.7% | 3.1% | 0.3% | 0.6% | 3.7% | 3.1% | 0.8% | 2.9% | 3.9% | 3.0% | 2.4% | 1.5% | 3.9% | 3.4% | 1.7% | 1.7% | 3.7% | 3.0% | 0.9% | 2.0% | 2.8% | 1.8% | 1.1% |
| Xanthomonadaceae | 1.7% | 2.7% | 0.4% | 0.3% | 0.2% | 2.7% | 2.2% | 0.1% | 0.3% | 2.8% | 2.3% | 0.3% | 3.4% | 2.8% | 2.2% | 2.2% | 1.0% | 2.7% | 2.2% | 5.0% | 3.9% | 2.9% | 2.2% | 0.3% | 2.8% | 2.8% | 1.6% | 0.9% |
| Other* | 32.2% | 31.7% | 19.7% | 17.0% | 14.1% | 31.3% | 28.0% | 5.4% | 10.1% | 32.2% | 28.1% | 15.0% | 19.0% | 31.8% | 25.7% | 17.1% | 22.3% | 31.4% | 28.4% | 18.8% | 18.5% | 30.8% | 28.0% | 21.3% | 19.6% | 26.7% | 24.6% | 21.4% |

*Other: The sum of families with relative abundance less than 2%.

**Table S5:** Relative abundance of soil microbial community at genus level in microcosms amended with 1,2-DCB (A), 1,2-DCB and $CO_2$ (B), 1,2-DCB and $CH_4$ (C), 1,2-DCB, N and P (D), 1,2-DCB, $CO_2$, N and P (E), 1,2-DCB, $CH_4$, N and P (F) and no chemical amended (G).

| Original | A7 | A14 | A42 | A63 | B7 | B14 | B42 | B63 | C7 | C14 | C42 | C63 | D7 | D14 | D42 | D63 | E7 | E14 | E42 | E63 | F7 | F14 | F42 | F63 | G7 | G14 | G42 | G63 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Acidobacteria_unclassified | 1.7% | 2.7% | 0.3% | 0.3% | 0.2% | 2.8% | 2.3% | 0.1% | 0.2% | 2.8% | 2.4% | 0.3% | 0.7% | 2.7% | 2.2% | 0.6% | 0.5% | 2.7% | 2.2% | 1.0% | 1.0% | 2.6% | 2.3% | 0.4% | 0.9% | 2.2% | 1.5% | 1.4% |
| Actinobacteria_unclassified | 1.7% | 0.4% | 1.0% | 1.2% | 1.2% | 0.4% | 0.5% | 0.3% | 0.5% | 0.4% | 0.5% | 0.9% | 2.3% | 0.4% | 0.6% | 2.1% | 1.7% | 0.4% | 0.5% | 2.2% | 2.0% | 0.4% | 0.6% | 1.2% | 2.0% | 0.4% | 0.9% | 0.7% |
| *Anaeromyxobacter* | 0.0% | 0.4% | 2.7% | 4.3% | 1.8% | 0.3% | 0.3% | 1.3% | 2.2% | 0.2% | 0.5% | 3.8% | 2.5% | 0.2% | 0.5% | 2.9% | 3.6% | 0.3% | 0.7% | 4.0% | 2.6% | 0.3% | 0.7% | 3.0% | 2.6% | 4.2% | 6.5% | 6.3% |
| Bacillales_unclassified | 0.3% | 1.1% | 1.0% | 0.9% | 1.3% | 0.9% | 1.0% | 0.3% | 0.4% | 1.1% | 1.0% | 0.7% | 0.9% | 1.1% | 0.9% | 0.6% | 2.2% | 1.1% | 0.9% | 0.5% | 0.8% | 0.9% | 1.1% | 1.1% | 0.9% | 0.4% | 0.3% | 0.2% |
| Bacteria_unclassified | 23.6% | 19.7% | 10.6% | 10.3% | 10.5% | 20.2% | 19.0% | 3.3% | 6.2% | 20.7% | 19.2% | 9.1% | 14.9% | 20.9% | 17.9% | 13.7% | 13.1% | 20.6% | 19.5% | 16.6% | 16.5% | 19.6% | 19.0% | 13.6% | 15.4% | 18.3% | 18.5% | 17.6% |
| Betaproteobacteria_unclassified | 3.0% | 3.0% | 0.9% | 0.8% | 0.6% | 3.0% | 2.5% | 0.2% | 0.7% | 3.1% | 2.6% | 0.5% | 1.2% | 3.0% | 2.3% | 1.2% | 0.9% | 3.0% | 2.6% | 1.6% | 1.7% | 3.0% | 2.4% | 0.9% | 1.5% | 2.9% | 1.8% | 1.5% |
| Blastocatellaceae_unclassified | 0.1% | 2.0% | 0.0% | 0.0% | 0.0% | 2.0% | 1.8% | 0.0% | 0.1% | 2.0% | 1.8% | 0.0% | 0.1% | 2.1% | 1.8% | 0.0% | 0.1% | 2.1% | 1.8% | 0.0% | 0.0% | 2.0% | 1.8% | 0.0% | 0.1% | 0.8% | 0.4% | 0.1% |
| WPS-1_unclassified | 0.5% | 2.0% | 0.1% | 0.1% | 0.0% | 2.1% | 1.7% | 0.0% | 0.0% | 2.2% | 1.9% | 0.1% | 0.1% | 2.3% | 1.6% | 0.1% | 0.1% | 2.2% | 1.8% | 0.1% | 0.1% | 2.2% | 1.6% | 0.1% | 0.1% | 1.0% | 0.5% | 0.1% |
| *Gaiella* | 1.5% | 0.6% | 1.0% | 1.4% | 1.3% | 0.6% | 0.7% | 0.3% | 0.5% | 0.5% | 0.7% | 1.0% | 1.9% | 0.6% | 0.8% | 2.4% | 2.0% | 0.6% | 0.7% | 2.2% | 1.8% | 0.5% | 0.9% | 1.6% | 1.8% | 0.4% | 0.9% | 0.7% |
| Gemmatimonadaceae_unclassified | 1.5% | 2.4% | 0.2% | 0.2% | 0.1% | 2.3% | 2.0% | 0.1% | 0.2% | 2.4% | 2.1% | 0.2% | 0.4% | 2.4% | 1.8% | 0.7% | 0.3% | 2.3% | 2.1% | 0.9% | 0.7% | 2.3% | 2.0% | 0.2% | 0.5% | 2.5% | 1.9% | 2.1% |
| Gp16_unclassified | 2.4% | 1.0% | 1.7% | 3.0% | 2.3% | 1.0% | 1.2% | 0.5% | 1.1% | 1.0% | 1.3% | 1.6% | 3.1% | 1.0% | 1.5% | 3.1% | 2.7% | 1.1% | 1.5% | 3.6% | 3.3% | 0.9% | 1.6% | 2.8% | 3.1% | 1.7% | 3.5% | 3.4% |
| Gp4_unclassified | 1.3% | 2.3% | 0.1% | 0.1% | 0.0% | 2.3% | 1.8% | 0.0% | 0.0% | 2.4% | 2.0% | 0.1% | 0.3% | 2.3% | 1.8% | 0.2% | 0.1% | 2.3% | 2.0% | 0.2% | 0.2% | 2.4% | 1.8% | 0.0% | 0.3% | 1.5% | 0.8% | 0.5% |
| Gp6_unclassified | 7.2% | 5.2% | 1.8% | 1.8% | 1.0% | 5.2% | 4.4% | 0.5% | 0.9% | 5.2% | 4.4% | 1.1% | 2.6% | 5.2% | 4.3% | 2.4% | 2.1% | 5.3% | 4.7% | 3.9% | 3.3% | 5.1% | 4.3% | 1.7% | 3.3% | 5.2% | 5.1% | 4.7% |
| *Methanobacterium* | 0.1% | 3.5% | 40.4% | 36.3% | 50.1% | 3.8% | 12.8% | 81.7% | 66.4% | 1.6% | 11.7% | 51.1% | 29.6% | 2.3% | 17.9% | 29.8% | 29.7% | 2.4% | 9.7% | 22.6% | 19.0% | 5.1% | 11.2% | 34.5% | 25.0% | 7.1% | 8.5% | 17.3% |
| Myxococcales_unclassified | 0.8% | 0.8% | 1.9% | 2.4% | 1.3% | 0.8% | 0.7% | 1.1% | 2.6% | 0.8% | 0.8% | 2.7% | 2.1% | 0.8% | 0.7% | 2.0% | 2.4% | 0.8% | 1.0% | 3.2% | 2.3% | 0.8% | 0.9% | 2.8% | 2.0% | 4.5% | 6.9% | 7.3% |
| Nitrososphaera_unclassified | 4.0% | 2.8% | 2.0% | 2.2% | 1.7% | 2.6% | 2.3% | 0.9% | 1.5% | 2.8% | 2.4% | 1.5% | 3.1% | 2.9% | 2.1% | 2.3% | 2.2% | 2.8% | 2.5% | 2.6% | 3.6% | 2.5% | 2.6% | 1.9% | 2.6% | 2.4% | 2.3% | 1.5% |
| Nocardioidaceae_unclassified | 0.6% | 0.2% | 1.9% | 2.8% | 1.8% | 0.2% | 0.4% | 0.4% | 0.6% | 0.2% | 0.4% | 1.5% | 0.9% | 0.2% | 0.5% | 0.9% | 1.2% | 0.2% | 0.4% | 0.8% | 0.8% | 0.2% | 0.5% | 1.6% | 0.6% | 0.3% | 0.5% | 0.5% |
| *Nocardioides* | 1.3% | 0.3% | 3.3% | 5.1% | 2.9% | 0.3% | 0.6% | 1.0% | 1.4% | 0.2% | 0.5% | 2.5% | 1.5% | 0.2% | 0.7% | 1.3% | 1.9% | 0.3% | 0.6% | 1.4% | 1.2% | 0.3% | 0.8% | 2.1% | 0.9% | 0.2% | 0.5% | 0.4% |
| Proteobacteria_unclassified | 2.3% | 2.7% | 0.6% | 0.4% | 0.3% | 2.7% | 2.1% | 0.2% | 0.4% | 2.8% | 2.2% | 0.4% | 0.9% | 2.6% | 1.9% | 0.8% | 0.7% | 2.6% | 2.4% | 1.1% | 1.3% | 2.6% | 2.2% | 0.5% | 1.2% | 1.9% | 1.5% | 1.2% |
| *Pseudomonas* | 0.0% | 0.3% | 0.0% | 0.0% | 0.0% | 0.3% | 0.2% | 0.0% | 0.0% | 0.3% | 0.3% | 0.0% | 0.0% | 0.3% | 0.2% | 4.5% | 0.1% | 0.3% | 0.2% | 0.0% | 5.9% | 0.3% | 0.2% | 0.4% | 3.7% | 0.1% | 0.0% | 0.0% |
| Pseudonocardiaceae_unclassified | 1.0% | 0.2% | 2.1% | 3.0% | 1.3% | 0.1% | 0.3% | 0.3% | 0.6% | 0.1% | 0.2% | 1.1% | 0.5% | 0.1% | 0.3% | 0.4% | 0.9% | 0.1% | 0.3% | 0.4% | 0.4% | 0.1% | 0.4% | 1.5% | 0.3% | 0.1% | 0.2% | 0.2% |
| Rhizobiales_unclassified | 2.2% | 0.7% | 0.4% | 0.3% | 0.2% | 0.8% | 0.7% | 0.1% | 0.2% | 0.8% | 0.7% | 0.3% | 1.0% | 0.8% | 0.6% | 0.8% | 0.6% | 0.8% | 0.7% | 1.2% | 1.3% | 0.8% | 0.6% | 0.5% | 1.3% | 0.8% | 1.0% | 0.8% |
| *Sphingomonas* | 0.9% | 2.4% | 0.5% | 0.3% | 0.4% | 2.3% | 1.9% | 0.2% | 0.3% | 2.3% | 1.9% | 0.4% | 1.7% | 2.4% | 1.8% | 1.3% | 0.9% | 2.4% | 2.1% | 1.0% | 1.1% | 2.4% | 1.7% | 0.6% | 1.2% | 1.8% | 1.2% | 0.6% |
| Xanthomonadaceae_unclassified | 1.3% | 1.6% | 0.2% | 0.2% | 0.2% | 1.6% | 1.3% | 0.1% | 0.2% | 1.7% | 1.4% | 0.2% | 3.0% | 1.7% | 1.3% | 1.8% | 0.7% | 1.6% | 1.3% | 4.3% | 3.4% | 1.7% | 1.4% | 0.2% | 2.4% | 2.1% | 1.2% | 0.7% |
| Other* | 40.6% | 41.9% | 25.3% | 22.8% | 19.2% | 41.4% | 37.3% | 6.9% | 12.9% | 42.3% | 37.3% | 18.8% | 24.8% | 41.7% | 34.1% | 24.2% | 29.4% | 41.7% | 37.7% | 24.4% | 25.7% | 40.8% | 37.2% | 26.8% | 26.4% | 37.3% | 33.7% | 30.1% |

*Other: The sum of genera with relative abundance less than 2%.