

## **Disease-induced changes in bacterial and fungal communities from plant below- and aboveground compartments**

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**Table 1.** The diversity indices (H, Shannon Index; S, Species richness; J, Pielous' evenness) of bacterial communities in different treatments (mean value  $\pm$  standard error).

| Treatment | H                | S                  | J                  |
|-----------|------------------|--------------------|--------------------|
| SCK       | 6.87 $\pm$ 0.189 | 1586.8 $\pm$ 148.4 | 0.933 $\pm$ 0.0175 |
| SH        | 6.83 $\pm$ 0.294 | 1567.2 $\pm$ 285.2 | 0.929 $\pm$ 0.0184 |
| SHL       | 3.42 $\pm$ 0.544 | 124.0 $\pm$ 32.8   | 0.710 $\pm$ 0.0874 |
| SHR       | 4.52 $\pm$ 0.356 | 368.2 $\pm$ 65.0   | 0.767 $\pm$ 0.0449 |
| SHS       | 3.83 $\pm$ 0.956 | 249.5 $\pm$ 79.4   | 0.696 $\pm$ 0.1440 |
| SI        | 6.78 $\pm$ 0.280 | 1500.5 $\pm$ 228.0 | 0.929 $\pm$ 0.0195 |
| SIL       | 3.71 $\pm$ 0.918 | 147.5 $\pm$ 30.9   | 0.740 $\pm$ 0.1655 |
| SIR       | 4.19 $\pm$ 0.572 | 399.5 $\pm$ 65.8   | 0.699 $\pm$ 0.0831 |
| SIS       | 4.61 $\pm$ 0.279 | 319.5 $\pm$ 38.4   | 0.801 $\pm$ 0.0590 |
| TCK       | 7.03 $\pm$ 0.289 | 1882.7 $\pm$ 268.6 | 0.933 $\pm$ 0.0213 |
| TH        | 6.86 $\pm$ 0.197 | 1748.8 $\pm$ 224.1 | 0.920 $\pm$ 0.0114 |
| THL       | 3.53 $\pm$ 0.966 | 145.5 $\pm$ 35.3   | 0.708 $\pm$ 0.1750 |
| THR       | 3.25 $\pm$ 1.120 | 258.8 $\pm$ 131.7  | 0.585 $\pm$ 0.1618 |
| THS       | 3.72 $\pm$ 0.745 | 299.5 $\pm$ 114.9  | 0.654 $\pm$ 0.0903 |
| TI        | 6.99 $\pm$ 0.106 | 1827.7 $\pm$ 157.2 | 0.931 $\pm$ 0.0078 |
| TIL       | 3.50 $\pm$ 0.589 | 146.0 $\pm$ 20.6   | 0.703 $\pm$ 0.1152 |
| TIR       | 3.90 $\pm$ 0.430 | 301.2 $\pm$ 70.3   | 0.685 $\pm$ 0.0584 |
| TIS       | 4.22 $\pm$ 0.561 | 338.8 $\pm$ 53.9   | 0.725 $\pm$ 0.0842 |

**Table 2.** The diversity indices (H, Shannon Index; S, Species richness; J, Pielous' evenness) of fungal communities in different treatments (mean value  $\pm$  standard error).

| <b>Treatment</b> | <b>H</b>         | <b>S</b>         | <b>J</b>           |
|------------------|------------------|------------------|--------------------|
| SCK              | 3.26 $\pm$ 0.650 | 284.2 $\pm$ 42.0 | 0.577 $\pm$ 0.1042 |
| SH               | 2.62 $\pm$ 0.878 | 202.5 $\pm$ 59.3 | 0.491 $\pm$ 0.1458 |
| SHL              | 1.97 $\pm$ 0.182 | 21.3 $\pm$ 4.2   | 0.648 $\pm$ 0.0358 |
| SHR              | 1.72 $\pm$ 0.189 | 16.0 $\pm$ 3.2   | 0.625 $\pm$ 0.0554 |
| SHS              | 1.92 $\pm$ 0.257 | 17.7 $\pm$ 4.8   | 0.675 $\pm$ 0.0349 |
| SI               | 2.95 $\pm$ 1.126 | 242.7 $\pm$ 72.2 | 0.533 $\pm$ 0.1983 |
| SIL              | 1.91 $\pm$ 0.287 | 17.7 $\pm$ 4.2   | 0.668 $\pm$ 0.0588 |
| SIR              | 1.72 $\pm$ 0.177 | 18.2 $\pm$ 1.6   | 0.594 $\pm$ 0.0552 |
| SIS              | 1.79 $\pm$ 0.213 | 20.8 $\pm$ 5.1   | 0.599 $\pm$ 0.0982 |
| TCK              | 3.05 $\pm$ 0.758 | 234.3 $\pm$ 58.2 | 0.557 $\pm$ 0.1153 |
| TH               | 2.98 $\pm$ 0.824 | 220.2 $\pm$ 52.8 | 0.551 $\pm$ 0.1428 |
| THL              | 2.15 $\pm$ 0.103 | 23.2 $\pm$ 2.7   | 0.686 $\pm$ 0.0284 |
| THR              | 2.06 $\pm$ 0.320 | 21.2 $\pm$ 8.6   | 0.703 $\pm$ 0.1652 |
| THS              | 2.05 $\pm$ 0.164 | 15.7 $\pm$ 2.7   | 0.749 $\pm$ 0.0506 |
| TI               | 2.67 $\pm$ 0.845 | 191.8 $\pm$ 14.6 | 0.507 $\pm$ 0.1581 |
| TIL              | 2.05 $\pm$ 0.158 | 21.3 $\pm$ 3.4   | 0.675 $\pm$ 0.0655 |
| TIR              | 1.98 $\pm$ 0.566 | 25.8 $\pm$ 3.5   | 0.609 $\pm$ 0.1669 |
| TIS              | 1.62 $\pm$ 0.759 | 19.5 $\pm$ 4.1   | 0.560 $\pm$ 0.2672 |

**Table 3.** The classification information and topological roles of keystone species in bacterial networks HB and IB.

| Network | Genus                    | Id                   | Topological role |
|---------|--------------------------|----------------------|------------------|
| HB      | <i>Acidovorax</i>        | ASV_16658            | Connectors       |
|         | <i>Acinetobacter</i>     | ASV_29952            | Connectors       |
|         | <i>Arthrobacter</i>      | ASV_20525, ASV_41389 | Connectors       |
|         | <i>Chryseobacterium</i>  | ASV_20819            | Connectors       |
|         | <i>Enterobacter</i>      | ASV_19849, ASV_21154 | Connectors       |
|         | <i>Methylobacillus</i>   | ASV_16651            | Connectors       |
|         | <i>Methylobacterium</i>  | ASV_16861            | Connectors       |
|         | <i>Methylobacterium</i>  | ASV_18716            | Connectors       |
|         | <i>Niastella</i>         | ASV_22720            | Connectors       |
|         | <i>Pectobacterium</i>    | ASV_9981, ASV_39214  | Connectors       |
|         | <i>Pseudarthrobacter</i> | ASV_17931, ASV_1560  | Connectors       |
|         | <i>Pseudomonas</i>       | ASV_32020, ASV_31742 | Connectors       |
|         | <i>Raoultella</i>        | ASV_32193            | Connectors       |
|         | <i>Roseateles</i>        | ASV_2943             | Connectors       |
|         | <i>Sphingomonas</i>      | ASV_3817             | Module hubs      |
|         | <i>Streptomyces</i>      | ASV_7274             | Connectors       |
|         | <i>Unclassified</i>      | ASV_39103            | Connectors       |
|         |                          | ASV_12525            | Module hubs      |
|         | <i>Zea</i>               | ASV_3769             | Connectors       |
| IB      | <i>Acidovorax</i>        | ASV_21303            | Connectors       |
|         | <i>Baekduia</i>          | ASV_811              | Connectors       |
|         | <i>Bradyrhizobium</i>    | ASV_12018            | Module hubs      |
|         | <i>Cellulomonas</i>      | ASV_11547, ASV_36375 | Connectors       |
|         | <i>Chryseobacterium</i>  | ASV_29681            | Connectors       |
|         | <i>Citrobacter</i>       | ASV_37422            | Module hubs      |
|         | <i>Ensifer</i>           | ASV_21731            | Connectors       |

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|                             |                       |             |
|-----------------------------|-----------------------|-------------|
| <i>Enterobacter</i>         | ASV_34603             | Module hubs |
| <i>Enterococcus</i>         | ASV_18716             | Connectors  |
| <i>Escherichia/Shigella</i> | ASV_25636             | Connectors  |
| <i>Flavobacterium</i>       | ASV_16165, ASV_9328   | Connectors  |
| <i>Herminiimonas</i>        | ASV_18184             | Connectors  |
| <i>Lentzea</i>              | ASV_39940             | Connectors  |
| <i>Lysinimonas</i>          | ASV_1448              | Connectors  |
| <i>Lysobacter</i>           | ASV_17749             | Connectors  |
| <i>Methylophilus</i>        | ASV_17057             | Connectors  |
| <i>Nocardioides</i>         | ASV_14322             | Connectors  |
| <i>Pseudoduganella</i>      | ASV_4858              | Connectors  |
| <i>Pseudomonas</i>          | ASV_29952             | Connectors  |
| <i>Rhizorhapis</i>          | ASV_18327             | Connectors  |
| <i>Sphingobacterium</i>     | ASV_13899             | Connectors  |
| <i>Sphingopyxis</i>         | ASV_26528             | Connectors  |
| <i>Stenotrophomonas</i>     | ASV_35872             | Module hubs |
|                             | ASV_3581, ASV_7810,   |             |
| <i>Streptomyces</i>         | ASV_15309, ASV_30535, | Connectors  |
|                             | ASV_34831, ASV_37582  |             |
| <i>Unclassified</i>         | ASV_8804, ASV_33838   | Connectors  |
| <i>Variovorax</i>           | ASV_21754             | Connectors  |
| <i>Vespertiliibacter</i>    | ASV_2003              | Connectors  |

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**Table 4.** The classification information and topological roles of keystone species in fungal networks HF and IF.

| Network | Order                 | Id                                                  | Topological role |
|---------|-----------------------|-----------------------------------------------------|------------------|
| HF      | <i>Cantharellales</i> | ASV_3903                                            | Connectors       |
|         | <i>Unclassified</i>   | ASV_1979, ASV_2070, ASV_3831,<br>ASV_2838, ASV_4024 | Connectors       |
|         | <i>Sordariales</i>    | ASV_2114                                            | Connectors       |
| IF      | <i>Hypocreales</i>    | ASV_3898                                            | Connectors       |
|         | <i>Unclassified</i>   | ASV_1245, ASV_2970                                  | Connectors       |