**Bio-fertilizer amendment alleviates the** **replanting disease by reshaping** **leaf and root microbiome**

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**Table S1** Displaying the different treatments under which *R. pseudostellariae* was grown.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Treatments** | **Treatment time** | **Planted** | **Sampled** | **Site code** | **Sample description** |
| Never-planted soil | Nov. 20, 2019 | Dec. 28, 2019 | May. 14, 2020 | FYL | Leaves in the first cropping year of *R. pseudostellariae* |
| FYR | Roots in the first cropping year of *R. pseudostellariae* |
| One-year monoculture soil | SYL | Leaves in the second cropping year of *R. pseudostellariae* |
| SYR | Roots in the second cropping year of *R. pseudostellariae* |
| Two-year monoculture soil | TYL | Leaves in the third cropping year of *R. pseudostellariae* |
| TYR | Roots in the third cropping year of *R. pseudostellariae* |
| Two-year monoculture soil with Bio-fertilizer treatment | BIOL | Leaves in the third cropping year of *R. pseudostellariae* with bio-fertilizer treatment |
| BIOR | Roots in the third cropping year of *R. pseudostellariae* with bio-fertilizer treatment |

**Table S2** Topological properties and correlation of the microbiome co-occurring networks.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **FY** | **SY** | **TY** | **BIO** |
| Number of nodes | 83 | 62 | 75 | 59 |
| Number of edges | 1376 | 883 | 1756 | 823 |
| Positive edges (%) | 54.14 | 51,76 | 59.17 | 63.18 |
| Negative edges (%) | 45.86 | 48.24 | 40.83 | 36.82 |
| Average degree | 33.157 | 28.484 | 46.827 | 27.898 |
| Network diameter | 4 | 3 | 5 | 4 |
| Density | 0.404 | 0.467 | 0.633 | 0.481 |
| Modularity | 0.213 | 0.183 | 0.103 | 0.159 |
| Clustering coefficient | 0.644 | 0.633 | 0.795 | 0.649 |
| Average path length | 1.666 | 1.566 | 1.44 | 1.559 |

FY: First cropping year of *R. pseudostellariae*; SY: Second cropping year of *R. pseudostellariae*; TY: Third cropping year of *R. pseudostellariae*; BIO: Third cropping year of *R. pseudostellariae* with bio-fertilizer treatment.

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**Figure S1** Rarefaction curves of bacterial communities. FYL, SYL and TYL represent the leaves in first, second and third cropping year of *R. pseudostellariae*, respectively; BIOL represents the leaves in third cropping year of *R. pseudostellariae* with bio-fertilizer treatment. FYR, SYR and TYR represent the roots in first, second and third cropping year of *R. pseudostellariae*, respectively; BIOR represents the roots in third cropping year of *R. pseudostellariae* with bio-fertilizer treatment.

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**Figure S2** Alpha diversity of leaves and roots microbiota across all the treatments **(A)**. Principal component analysis of leaf and root bacteria across all the treatments **(B)**. P represents all the leaves samples; R represents all the roots samples.

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**Figure S3** Alterations in the relative abundances of different microbial genera under different treatments.

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**Figure S4** Changes in the abundances of *Fusarium oxysporum* by the qRT-PCR analysis under different treatments.

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**Figure S5** Linear discriminant analysis (LDA) showing the differences of bacterial taxa between treatments among the leaves samples.

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**Figure S6** Linear discriminant analysis (LDA) showing the differences of bacterial taxa between treatments among the roots samples.