**Table S7** Relative abundance (%) and taxa information of dominant OTUs belonged to plant pathogen (a) and their correlations with soil environmental variables (b)

(a)

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| OTU ID | ACC1ya | ACC2y | ACC6y | ACC9y | ACC12y | ACC13y | ACC35y | Taxonomy |
| OTU1786 | 2.07±0.31ab | 2.06±0.19a | 0.64±0.10b | 1.79±0.30a | 1.10±0.29b | 0.90±0.07b | 2.17±0.41a | Ascomycota-Sordariomycetes-*Fusarium equiseti* |
| OTU1176 | 0.64±0.07b | 0.52±0.02b | 0.52±0.09b | 0.63±0.12b | 0.34±0.07b | 0.95±0.18a | 1.05±0.33a | Ascomycota-Sordariomycetes-*Fusarium incarnatum* |
| OTU211 | 0.48±0.10c | 0.07±0.01cd | 0.05±0.03cd | 0.02±0.01d | 1.14±0.50b | 1.30±0.30b | 2.62±0.17a | Ascomycota-Sordariomycetes-*Haematonectria haematococca* |
| OTU1880 | 0.05±0.01c | 0.82±0.12ab | 0.17±0.03c | 0.78±0.20ab | 0.68±0.22ab | 0.88±0.32a | 0.50±0.07b | Ascomycota-Sordariomycetes-*Lectera longa* |
| OTU1028 | 0.17±0.06e | 0.62±0.11a | 0.35±0.02cd | 0.22±0.03de | 0.55±0.07ab | 0.42±0.08bc | 0.64±0.12a | Ascomycota-Sordariomycetes-*Cylindrocarpon* sp |
| OTU1311 | 0.10±0.03c | 0.02±0.01c | 0.02±0.02c | 0.01±0.01c | 0.64±0.06a | 0.63±0.10a | 0.25±0.04b | Ascomycota-Eurotiomycetes-*Cyphellophora* sp |

a ACC1y, ACC2y, ACC6y, ACC9y, ACC12y, ACC13y and ACC35y represent the treatments of alfalfa continuous cropping for 1, 2, 6, 9, 12, 13 and 35 years, respectively.

b Different letters within the same row indicate significant difference between treatments tested by One-Way ANOVA (*P* < 0.05). Values are the means ± SE (n = 3).

(b)

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| OTU ID | pH | Moisture | TC | TN | TP | TK | NH4+–N | NO3––N | AP | AK | Year |
| OTU1786 | –0.204  | 0.146  | 0.128  | –0.041  | –0.082  | –0.150  | 0.211  | 0.349  | –0.196  | 0.287  | 0.160  |
| OTU1176 | 0.026  | 0.366  | –0.154  | 0.357  | –0.546\* | 0.367  | –0.022  | 0.494\* | –0.412  | 0.519\* | 0.600\*\* |
| OTU211 | 0.122  | 0.682\*\* | 0.375  | 0.750\*\* | –0.898\*\* | –0.102  | –0.241  | 0.533\* | –0.761\*\* | 0.756\*\* | 0.893\*\* |
| OTU1880 | 0.460\* | –0.190  | –0.204  | –0.017  | –0.141  | 0.037  | –0.085  | –0.287  | –0.258  | –0.118  | 0.142  |
| OTU1028 | 0.197  | 0.333  | 0.159  | 0.506\* | –0.321  | –0.256  | 0.160  | 0.036  | –0.507\* | 0.603\*\* | 0.319 |
| OTU1311 | 0.396  | 0.274  | 0.448\* | 0.583\*\* | –0.712\*\* | –0.317  | –0.264  | 0.268  | –0.707\*\* | 0.204  | 0.497\*  |

TC, TN, TP, TK, AP and AK indicate soil total carbon, total nitrogen, total phosphorus, total potassium, available phosphorus and available potassium, respectively.

\*\* Correlation is significant at *P* = 0.01 level. \* Significant at *P* = 0.05 level.