**Annex 1.** Pearson correlation coefficient of AMF associations with soil properties along invasion rate.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | IR | SA | HC | MHC | AC | VC | OC | .K | Ca | P | TN | BD | MC | clay | silt | sand |
| IR | 1.00 | -0.86\*\*\* | -0.57\*\* | -0.35ns | -0.33 ns | -0.29 ns | -0.75\*\* | -0.17 ns | -0.52\* | -0.46\* | -0.11 ns | 0.75\*\* | -0.88\*\*\* | -0.08 ns | -0.74\*\* | 0.72\*\* |
| SA |  | 1.00 | 0.48\* | 0.27 ns | 0.31 ns | 0.30 ns | 0.65\*\* | 0.24 ns | 0.40 ns | 0.47\* | -0.02 ns | -0.74\*\* | 0.90\*\*\* | 0.13 ns | 0.61\*\* | -0.63\*\* |
| HC |  |  | 1.00 | 0.72\*\* | 0.25 ns | 0.14 ns | 0.36 ns | 0.24 ns | -0.18 ns | 0.25 ns | 0.41\* | -0.43\* | 0.43\* | -0.41\* | 0.48\* | -0.19 ns |
| MHC |  |  |  | 1.00 | 0.16 ns | 0.16 ns | 0.26 ns | 0.45\* | -0.23 ns | 0.22 ns | 0.44\* | -0.08 ns | 0.18 ns | -0.33 ns | 0.25 | -0.03 ns |
| AC |  |  |  |  | 1.00 | 0.21 ns | 0.48\* | 0.18 ns | 0.49\* | 0.43\* | 0.16 ns | -0.49\* | 0.63\*\* | 0.14 ns | 0.44\* | -0.48\* |
| VC |  |  |  |  |  | 1.00 | 0.43\* | -0.01 ns | 0.34 ns | 0.34 ns | 0.29 ns | -0.40 ns | 0.42\* | -0.01 ns | 0.38 ns | -0.34 ns |
| OC |  |  |  |  |  |  | 1.00 | 0.33 | 0.48 | 0.68 | 0.08 | -0.84 | 0.79 | 0.28 | 0.78 | -0.88 |
| Ex.K |  |  |  |  |  |  |  | 1.00 | -0.20 | 0.50 | 0.02 | -0.19 | 0.32 | 0.11 | 0.12 | -0.18 |
| Ex.Ca |  |  |  |  |  |  |  |  | 1.00 | -0.03 | -0.09 | -0.29 | 0.40 | 0.36 | 0.50 | -0.67 |
| Av.P |  |  |  |  |  |  |  |  |  | 1.00 | 0.05 | -0.71 | 0.56 | 0.33 | 0.32 | -0.49 |
| TN |  |  |  |  |  |  |  |  |  |  | 1.00 | -0.20 | 0.15 | -0.53 | 0.28 | 0.06 |
| BD |  |  |  |  |  |  |  |  |  |  |  | 1.00 | -0.86 | -0.11 | -0.77 | 0.77 |
| MC |  |  |  |  |  |  |  |  |  |  |  |  | 1.00 | 0.16 | 0.74 | -0.77 |
| clay |  |  |  |  |  |  |  |  |  |  |  |  |  | 1.00 | -0.17 | -0.44 |
| silt |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 1.00 | -0.81 |
| sand |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 1.00 |

\*p < 0.05; \*\*p < 0.01 and \*\*\*p < 0.001. and ns: no significa

IR: invasion rate, SA: spore abundance, HC: hyphal colonization, MHC: mycorrhizal colonization, AC: arbuscular colonization, VC: vesicular colonization, P: Available Phosphorus, TN: Total Nitrogen, OC: Organic carbon, K: exchangeable Potassium, Ca: exchangeable Calcium, BD: bulk density, MC: moisture content