**Supplemental Material 1-** Prominent bacterial families (%) present in endophyte infected and endophyte free tall fescue soil

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| **Phylum** | **Order (EI, EF)** | **Family** | **Endophyte Infected (EI)** | **Endophyte Free (EF)** |
| Proteobacteria | Rhizobiales (38, 37) | *Bradyrhizobiaceae (N-fix) (Myc-Symb)* | 26 | 26  |
| *Hyphomicrobiaceae (Pht)* | 13 | 18 |
| *Rhizobiales\_Incertae\_Sedis* *(N-Fix)* | 10 | 10 |
| *Xanthobacteraceae (N-Fix)* | 35 | 30 |
| *Rhodobiaceae (N-Fix)* | 4 | 6 |
| *Phyllobacteriaceae* | 4 | Abs |
| *Methylobacteriaceae (PGP)* | 3 | Abs |
| Rickettsiales (13, 12) | *Mitochondria* | 86 | 77 |
| Xanthomonadales (6, 14) | *Xanthomonadales\_Incertae\_Sedis* | 80 | 75 |
| *Xanthomonadaceae (PP)* | 5 | 9 |
| Rhodospirillales (7, 6) | *Rhodospirillales\_Incertae\_Sedis* | 20 | 33 |
| *Rhodospirillaceae (N-fix)* | 14 | 22 |
| *Acetobacteraceae* | 26 | 11 |
| Nitrosomonadales (8, 9) | *Nitrosomonadaceae (AOB)* | 100 | 100 |
| Burkholderiales (7, 3) | *Comamonadaceae* *(Dntf) (Myc-Symb)* | 38 | 54 |
| *Burkholderiaceae (PSB) (ZnSb) (DrtTol)* | 38 | 23 |
| *Oxalobacteraceae (Myc-Symb)* | 24 | 15 |
| Sphingomonadales (3, 25) | *Sphingomonadaceae* *(Biocon) (PhtRem)* | 96 | 100 |
| Desulfuromonadales (1, 5) | *Geobacteraceae (FeRd) (SlfRB)* | 100 | 100 |
| Desulfurellales (5, 4) | *Desulfurellaceae (SlfRB)* | 100 | 100 |
| Planctomycetes | Planctomycetales (88 ,100) | *Planctomycetaceae (NH3-Ox)* | 100 | 95 |
| *Phycisphaeraceae* | 18 | 5 |
| Verrucomicrobia | Chthoniobacterales (99,98) | *DA101\_soil\_group* | 86 | 86 |
| *Xiphinematobacteraceae* | 3 | 7 |
| *Chthoniobacteraceae* | 7 | 7 |
| Verrucomicrobiales (6, 2) | *Verrucomicrobiaceae* | 100 | 100 |
| Bacteroidetes | Sphingobacteriales (68, 87) | *Sphingobacteriaceae* *(Biocon)* | 10 | 10 |
| *Chitinophagaceae* | 84 | 89 |
| Cytophagales (7, 8) | *Cytophagaceae* | 100 | 100 |
| Flavobacteriales (25, 4) | *Flavobacteriaceae (PGPR)* | 98 | 80 |
| *NS9\_marine\_group* | 2 | 20 |
| Nitrospirae | Nitrospirales (100, 100) | *Nitrospiraceae* *(NB)* | 69 | 70 |
| *0319-6A21(NB)* | 31 | 30 |
| Acidobacteria | Blastocatellales (67,79) | *Blastocatellaceae\_(Subgroup\_4)* | 100 | 100 |
| Acidobacteriales (25,0) | *Acidobacteriaceae\_(Subgroup\_1) (NitR)* | 100 | Abs |
| Solibacterales (1,0) | *Solibacteraceae\_(Subgroup\_3)* | 100 | Abs |
| Gemmatimonadetes | Gemmatimonadales (100, 100) | *Gemmatimonadaceae* | 100 | 100 |
| Actinobacteria | Solirubrobacterales (27, 43) | *Elev-16S-1332* | 81 | 61 |
| *0319-6M6* | 11 | 11 |
| *Solirubrobacteraceae* | Abs | 11 |
| Micrococcales (17, 21) | *Micrococcaceae (SlntRlf)* | 91 | 100 |
| Gaiellales (20, 10) | *Gaiellaceae* | 20 | 25 |
| Acidobacteriales (0, 7) | *Acidobacteriaceae\_**(Subgroup\_1)* | Abs | 100 |
| Corynebacteriales (10, 0) | *Mycobacteriaceae* | 100 | Abs |
| Acidimicrobiales (14, 0) | *Acidimicrobiaceae* | 5 | Abs |
| Chloroflexi | Anaerolineales (61 , 53) | *Anaerolineaceae* | 100 | 100 |
| Ktedonobacterales (23, 23) | *HSB\_OF53-F07* | 22 | 39 |
| *Ktedonobacteraceae* | 48 | 16 |
| *Thermosporotrichaceae* | 5 | Abs |
| Chloroflexales (5, 5) | *Roseiflexaceae* | 100 | 100 |
| Firmicutes | Bacillales (84, 65) | *Bacillaceae (PSB)* | 80 | 84 |
| *Paenibacillaceae (PSB)* | 8 | 10 |
| *Alicyclobacillaceae* | 4 | 6 |
| Clostridiales (6, 13) | *Clostridiaceae\_1(PP)* | 36 | 40 |
| *Gracilibacteraceae* |  | 10 |
| *Peptostreptococcaceae* | Abs | 30 |
| *Ruminococcaceae* | Abs | 10 |
| *Lachnospiraceae* | 64 | 10 |
| Erysipelotrichales (10, 22) | *Erysipelotrichaceae* | 100 | 100 |

Abbreviations for bacterial functions within EI and EF rhizosphere soil: AnPhtB, anaerobic photosynthetic bacteria; AOB, Ammonia oxidizing bacteria; BC, bio-controller; DnB, denitrifying bacteria; FBC, fungal bio-controller; FeRB, iron reducing bacteria; N-fix, nitrogen fixing bacteria; NOA, nitrite oxidizing Archaea; NOB, nitrite oxidizing bacteria; NitR, nitrate reducers; ; Pdtx, Phosphate detoxifier; PGP, plant growth promoter; Pht, phototrophic Bacteria; PP, Plant Pathogen; PrSlfB, purple sulfur reducing bacteria; PSB, phosphorus solubilizing bacteria; SlfRB, sulfur reducing bacteria and UD, undetermined. \*Abs = Absent. Percent abundance of order is given in parenthesis for respective families.