

Supplementary Data Set S1. Lp19 biomass concentration and distribution in Nui D plants

Fungal endophyte biomass distribution and concentration in Nui D plants growing under the same conditions used in this study, had been assessed in detail for a reporter gene-carrying transformant of Lp19 (KS1), using hyphal counts and hyphal diameter measurements (Tan et al., 2001). Lp19 distribution in infected plants used in this work closely matched that reported for KS1 (Tan et al., 2001): The numbers of Lp19 hyphae in lower emerging leaf, sheath 1 and sheath 2, determined by light microscopy (Zhou et al., 2014) in eleven tillers harvested at the same time as the samples for transcriptome analysis, were 41 ± 40 , 420 ± 159 and 250 ± 124 , respectively, matching closely numbers in the KS1/Nui D symbiosis (48 ± 69 , 461 ± 81 and 340 ± 156 , respectively (Tan et al., 2001)). Hyphal diameters also were similar to those reported for KS1 (Tan et al., 2001), increasing with the age of the surrounding tissue. Likewise, the ratio of Lp19 DNA to plant DNA followed a pattern very similar to that of KS1 biomass distribution (Fig. 2A, (Tan et al., 2001)). As expected (Herd et al., 1997; Christensen and Voisey, 2007) we detected no endophyte in the root using the qPCR assay for *Epichloë* DNA described in Materials and Methods.

Literature Cited

- Christensen, M.J., and Voisey, C.R. 2007. The biology of the endophyte/grass partnership. Pages 123-133 in: Proceedings of the 6th International Symposium on Fungal Endophytes of Grasses, A.J. Popay and E.R. Thom, eds. New Zealand Grassland Association, Palmerston North.
- Herd, S., Christensen, M.J., Saunders, K., Scott, D.B., and Schmid, J. 1997. Quantitative assessment of *in planta* distribution of metabolic activity and gene expression of an endophytic fungus. *Microbiology* 143:267-275.
- Tan, Y.Y., Spiering, M.J., Scott, V., Lane, G.A., Christensen, M.J., and Schmid, J. 2001. *In planta* regulation of extension of an endophytic fungus and maintenance of high metabolic rates in its mycelium in the absence of apical extension. *Appl. Environ. Microbiol.* 67:5377-5383.
- Zhou, Y., Bradshaw, R.E., Johnson, R.D., Hume, D.E., Simpson, W.R., and Schmid, J. 2014. Detection and quantification of three distinct *Neotyphodium lolii* endophytes in *Lolium perenne* by real time PCR of secondary metabolite genes. *Fungal Biol.* 118:316-324.