



Figure S1: Experimental design, host traits of interest, and bacteria collection. A. Experimental procedure for plant treatments. B. Illustration of the influence of the phyllosphere microbiota on plant phenotype. C. Phylogenetic tree of the SynCom-137 (44) including single ASVs of the *At*-LSPHERE with information of strain selection in surrounding rings. Ring 1 shows whether a strain was included in this study. Rings 2 to 4 illustrate whether a strain was included in previous studies that used *At*-LSPHERE strains, in order Carlström et al. (41), Schäfer et al. (46), and Maier et al. (47). Ring 5 illustrates plant protection as analyzed in a previous study (32).