



**Figure S5** (A) Average inbreeding coefficient in the RSC, (B) average of top 10 pedigree relationships (PR) between each RSC individual and the TS, (C) average standard deviation of pedigree relationships in RSC under recurrent genomic selection across selection cycles  $C = 0, 1, \dots, 10$  for synthetics produced from  $N_p = 2, 4, 16$  parents taken from ancestral population LR. Results refer to scenario *Re-LD<sub>A</sub>-Ped*.