



**Figure S6** Plots of SNPs associated with relative major lesion length (RMLL) for *Fusarium thapsinum* based on across year combined data for Manhattan locations. (a) Single-locus mixed model (marked in red; Bonferroni-corrected threshold of 0.05; dashed horizontal line); (b) Multi-locus mixed model (MLMM) which identifies two SNPs on chromosomes 2 and 7 (marked in red) in *M. phaseolina* from the optimum model (b). The vertical axis indicates the  $-\log_{10}$  of P-value scores, and the horizontal axis indicates chromosomes and physical positions of SNPs.