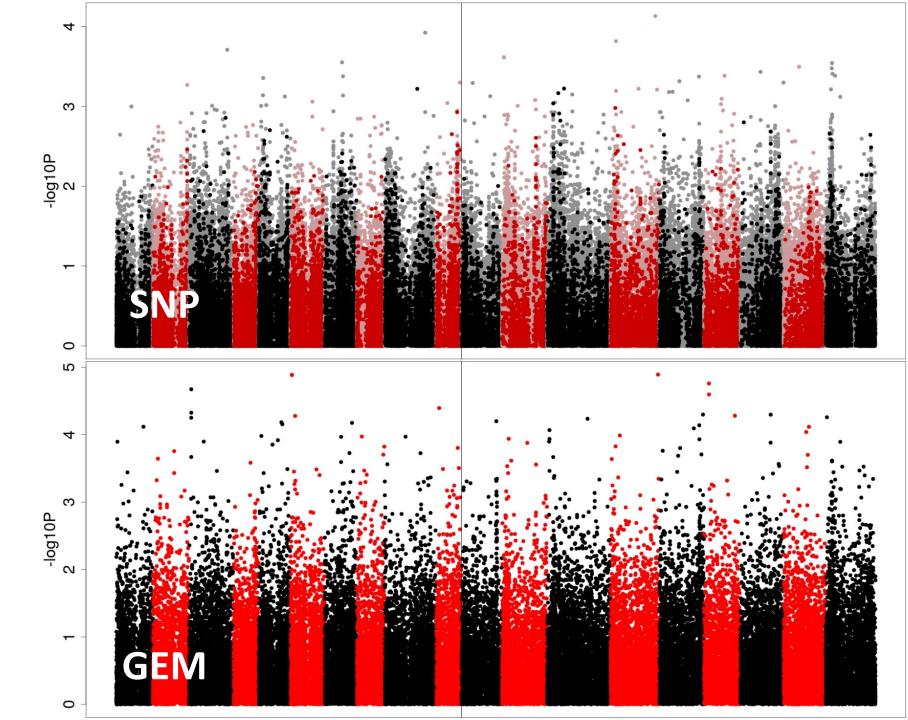
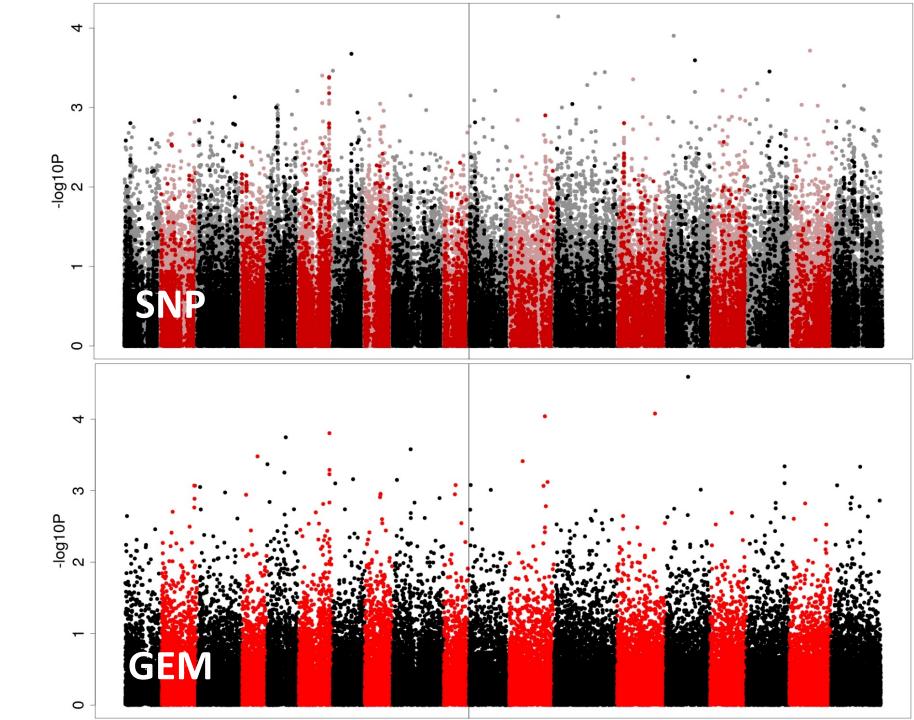
# Results of associative genomic/transcriptomic analysis, illustrated by Manhattan plots

Each slide shows the SNP (single nucleotide polymorphisms) and GEM (gene expression markers) for one trait, as well as the number of lines analysed. The notes for each slide contain the file names of the Manhattan plots for SNP and GEM. Slides are ordered as indicated in the "results.slide.no" column of the readme file. Dotted lines on Manhattan plots: purple, 5% FDR (false discovery rate); light blue, Bonferroni-corrected 5% FDR.

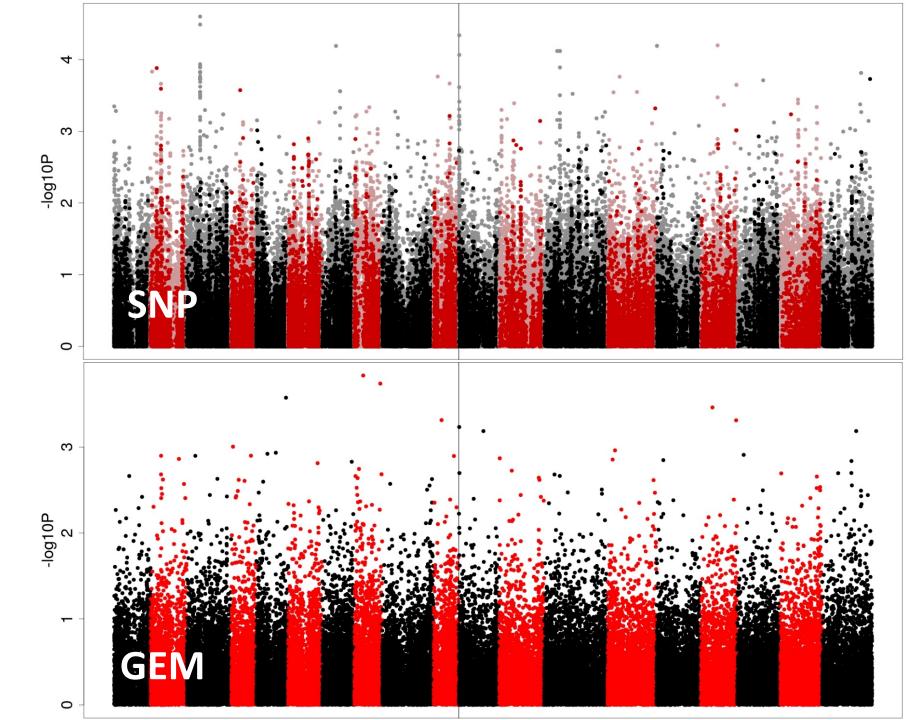
#### LLS % (Hinxton 2016)



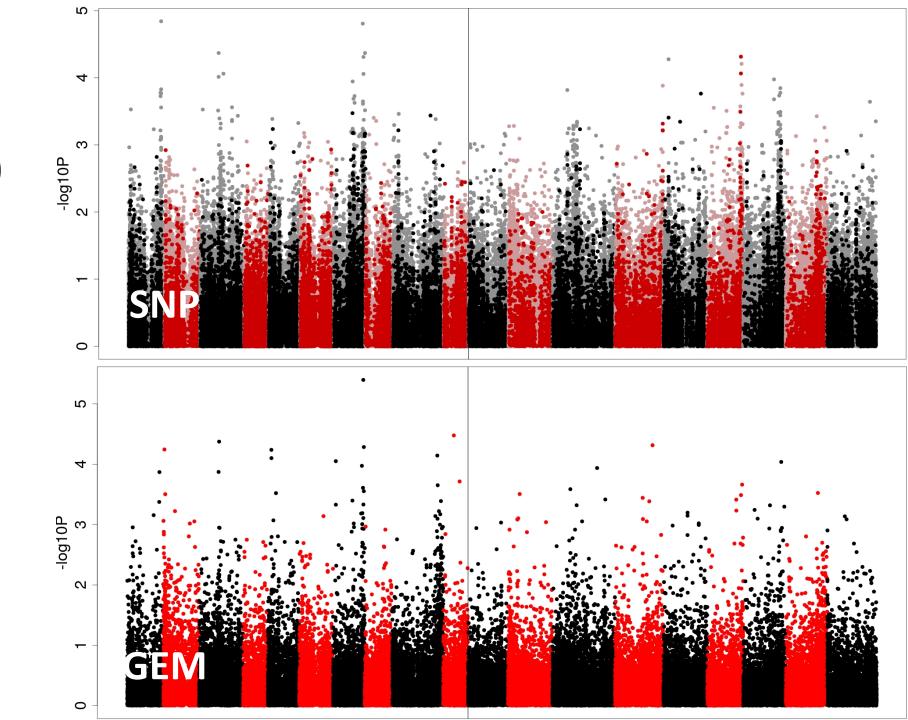
#### Phoma score 0-7 (Hinxton 2016)



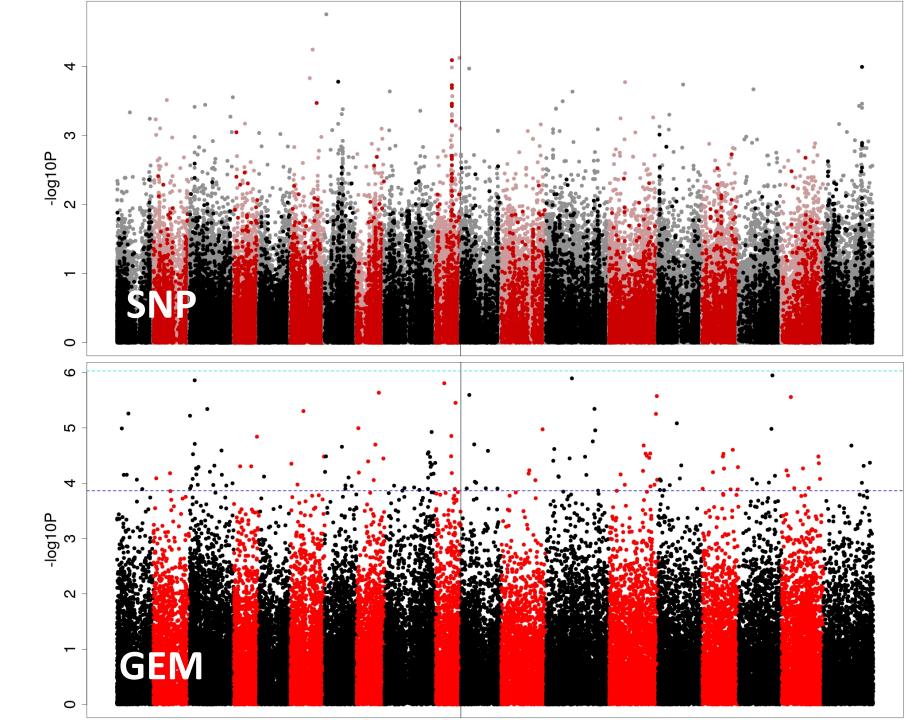
Verticillium (Hinxton 2016)



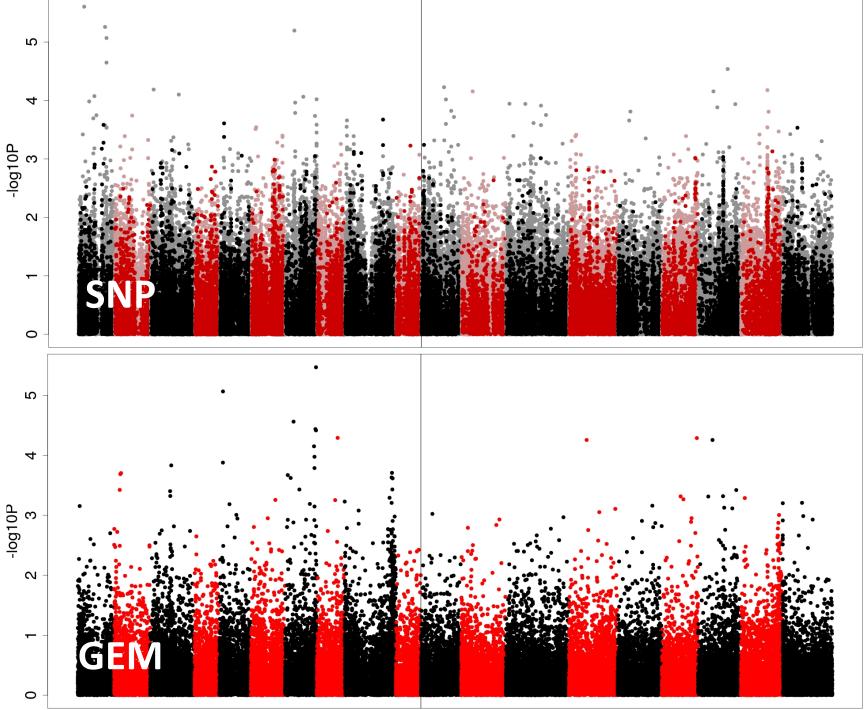
### No. of plants with Phoma (2015)



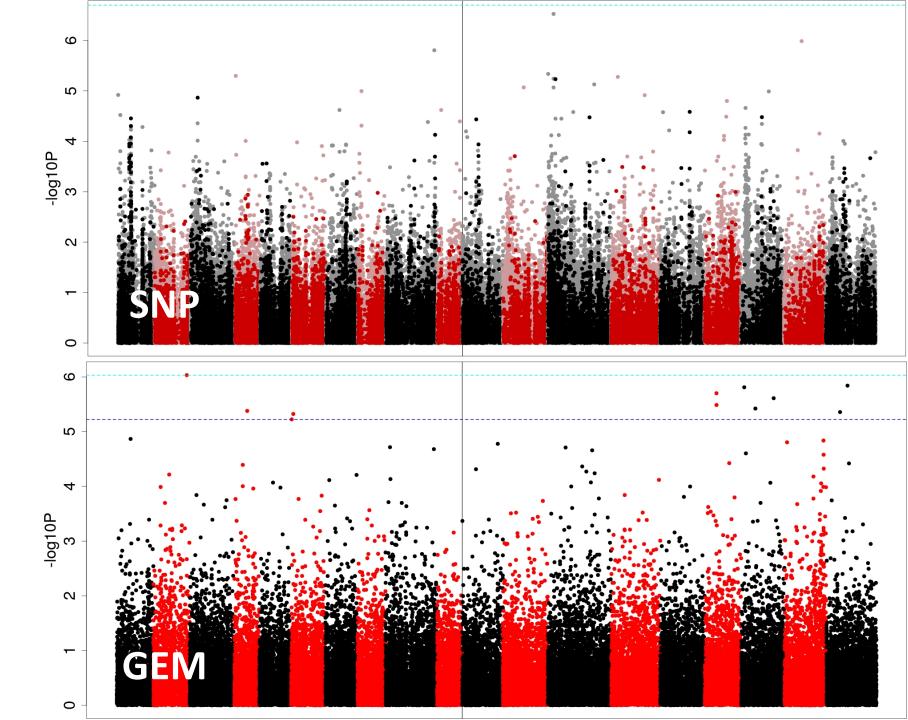




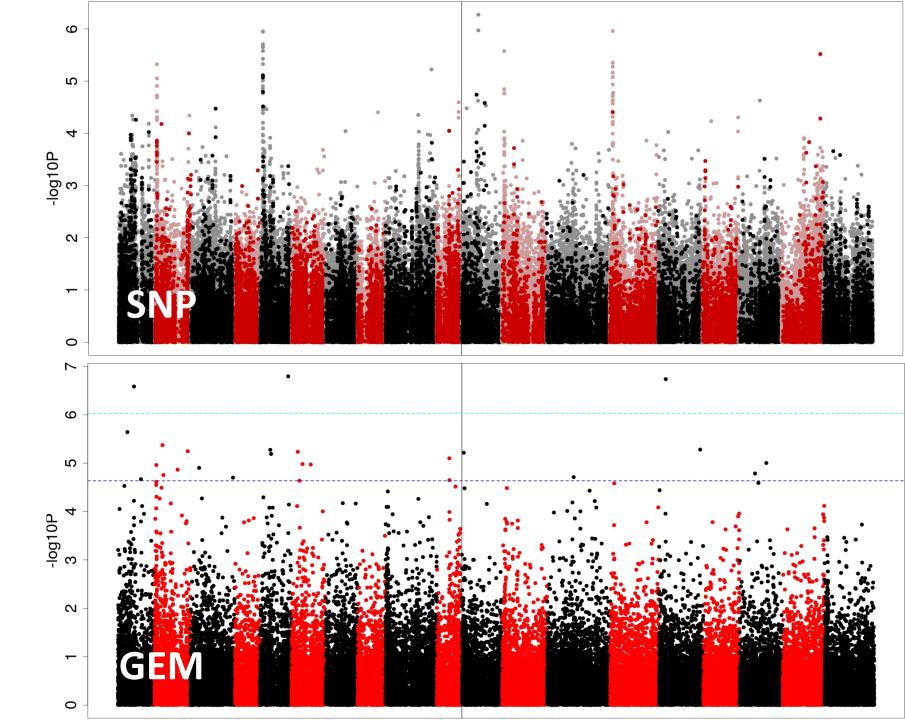
### Severity score (2015)



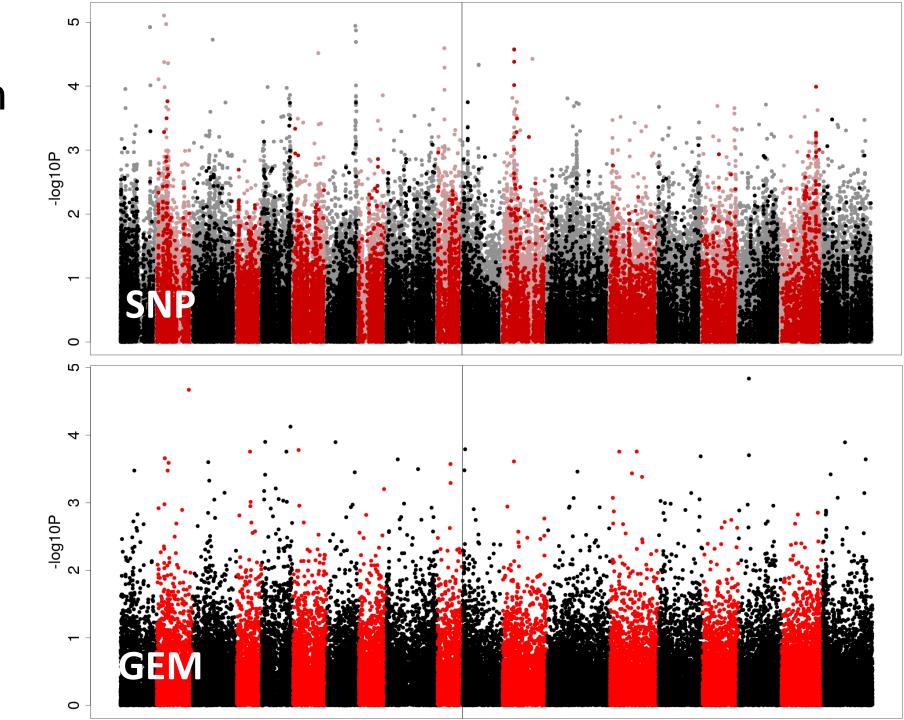
#### EST (Aberdeen 2016)



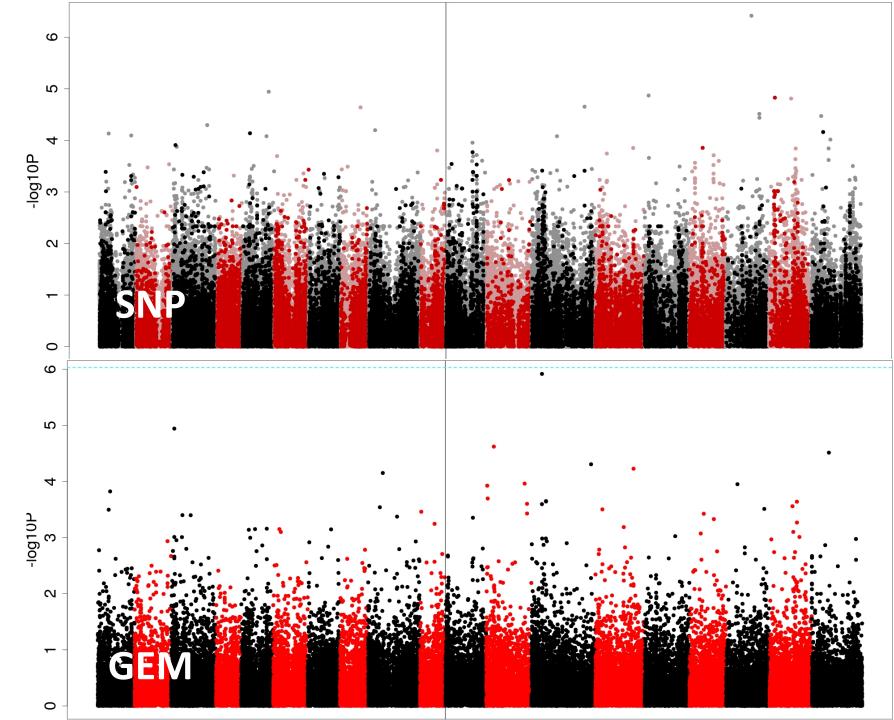
### LLS. 1.6 (Aberdeen 2016)



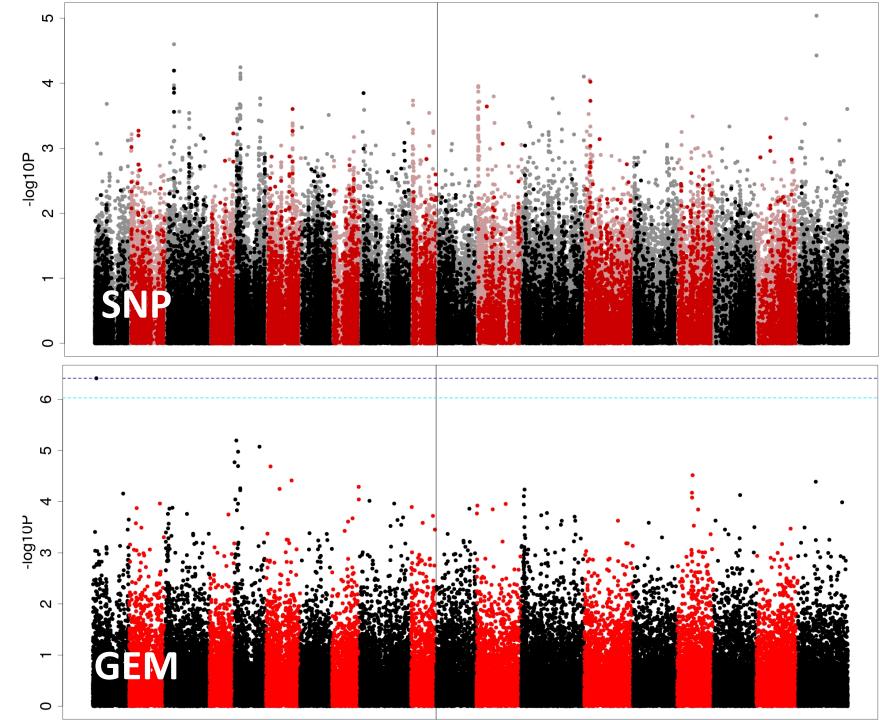
#### LLS 3.5 (Aberdeen 2016) <sup>238 lines analysed</sup>



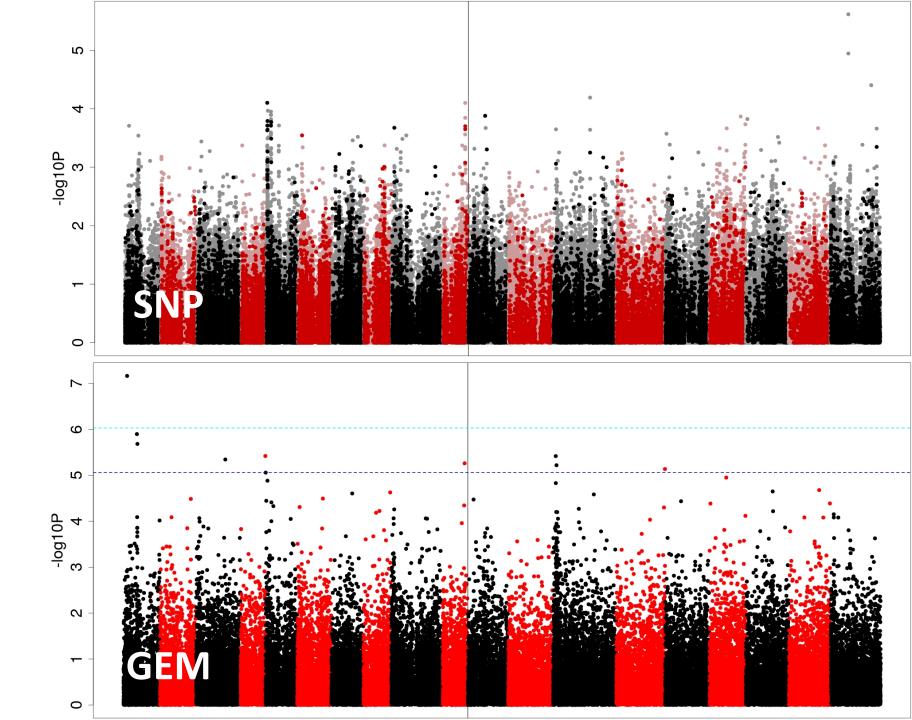
# Vigour (Aberdeen 2016)



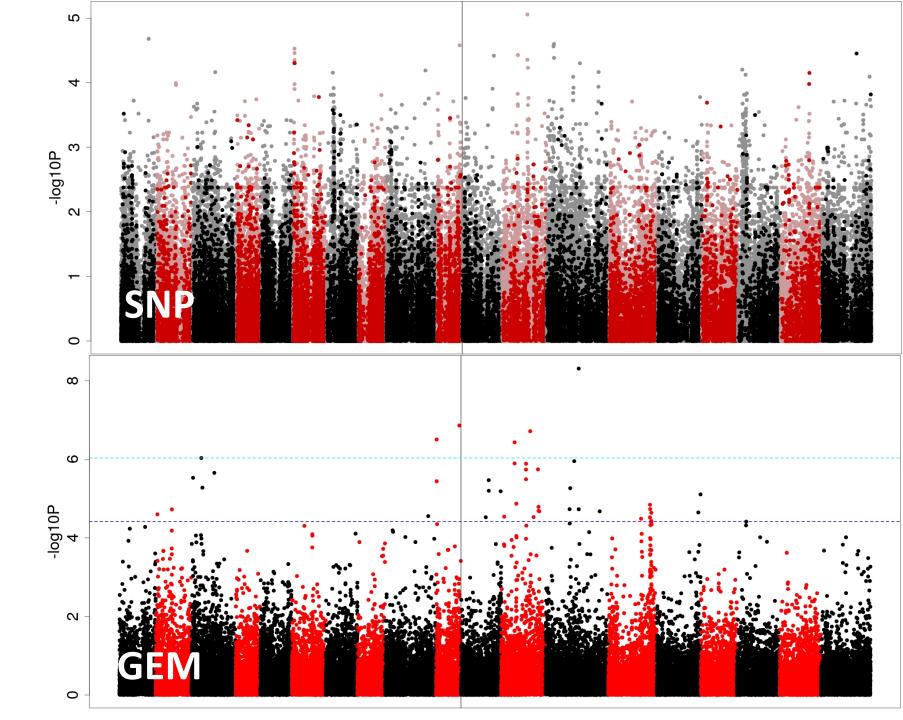
### LLS incidence 0-10 (2016)



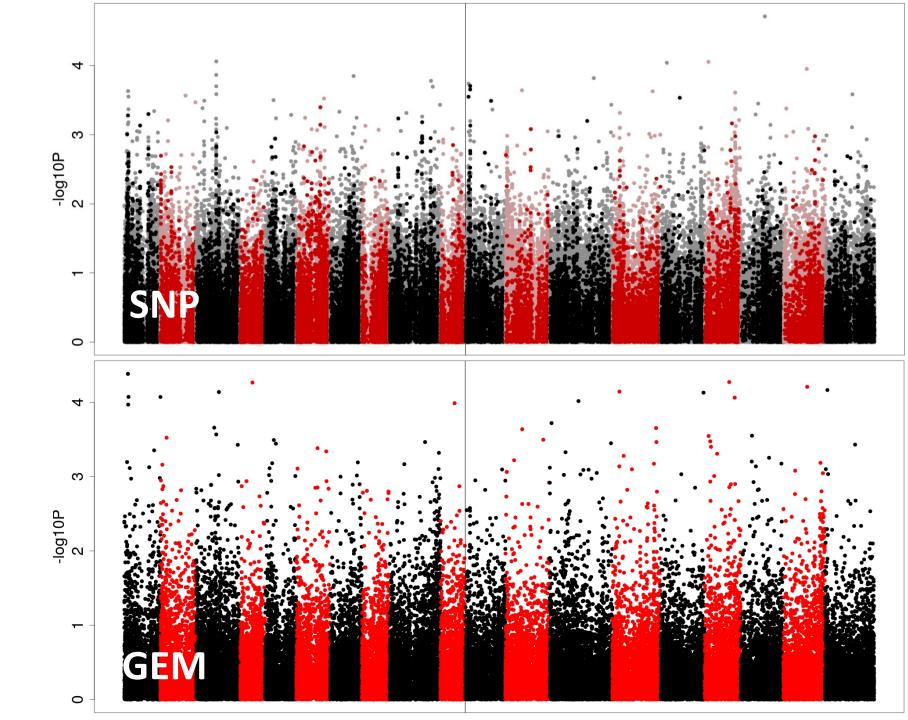
### LLS severity 0-7 (2016)



## Phoma (2016)



# Establishment score



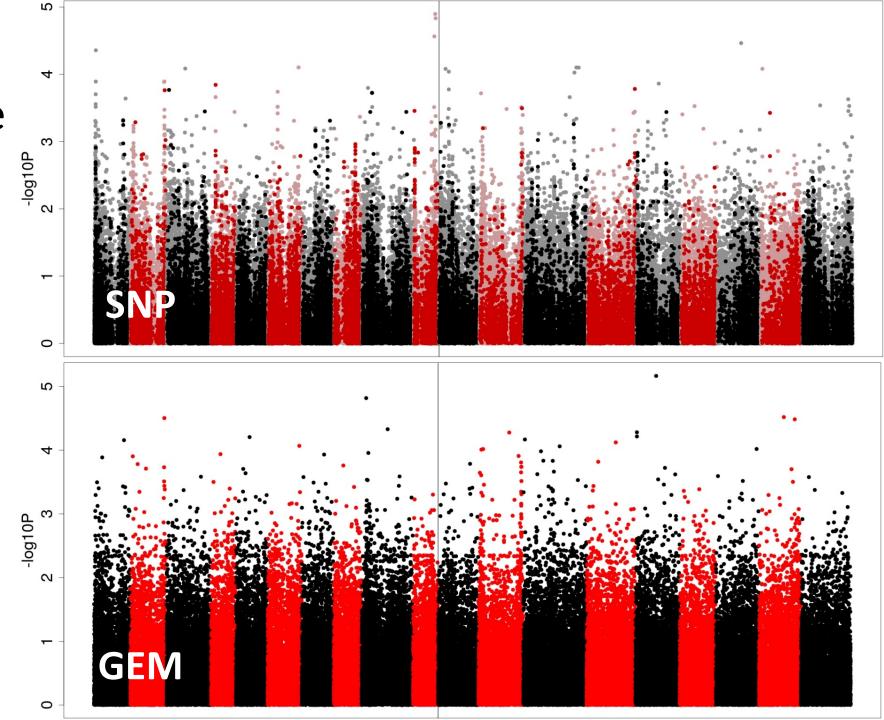
### Estimated plant no. (plants per m<sup>2</sup>)

0

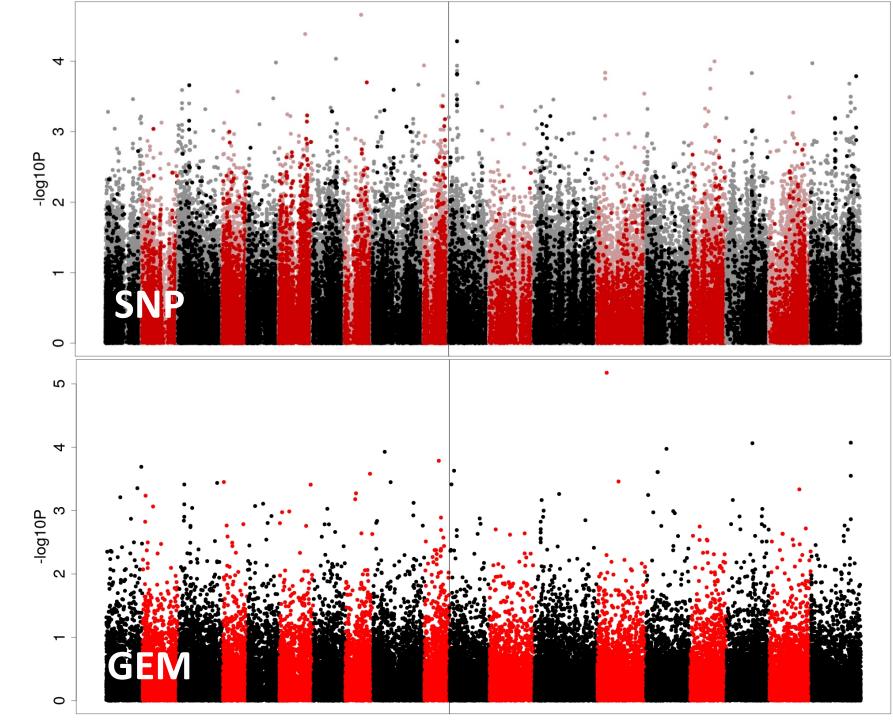
164 lines analysed

S 4 -log10P 3 2 -0 S -log10P 3 2 -GEM

#### Pod maturity score



#### Sclerotinia (% plants affected) 162 lines analysed



## Sclerotinia (% stems affected)

162 lines analysed

ø

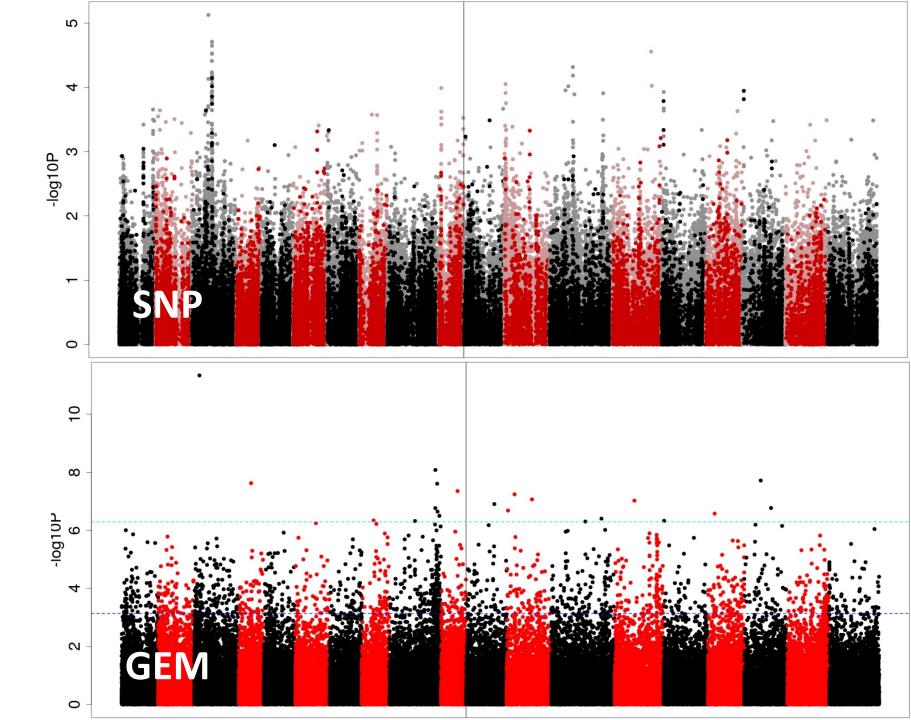
2 -log10P 3  $\sim$ -0 ß 4 -log10P 3 N -0

# Stem canker score (Phoma)

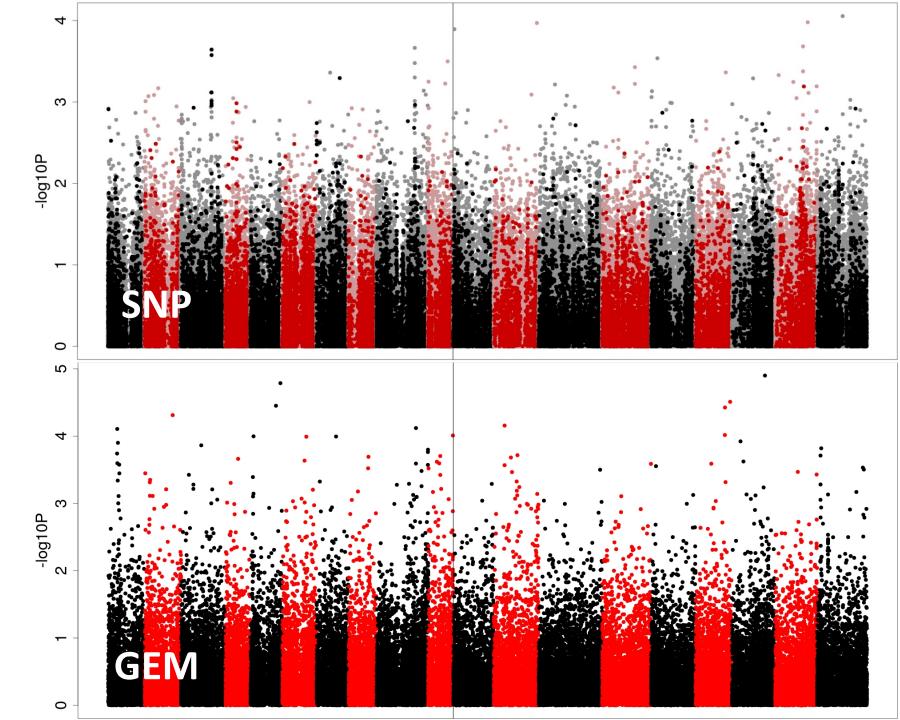
164 lines analysed

ß 4 -log10P 3 2 -0 4 က -log10P 2 -G 0

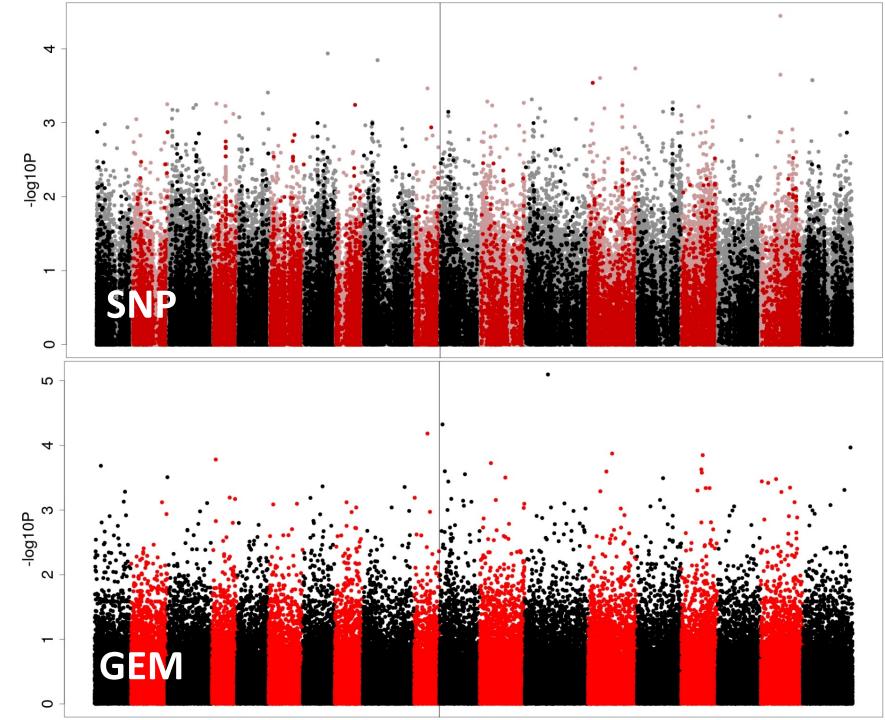
#### Vigour score



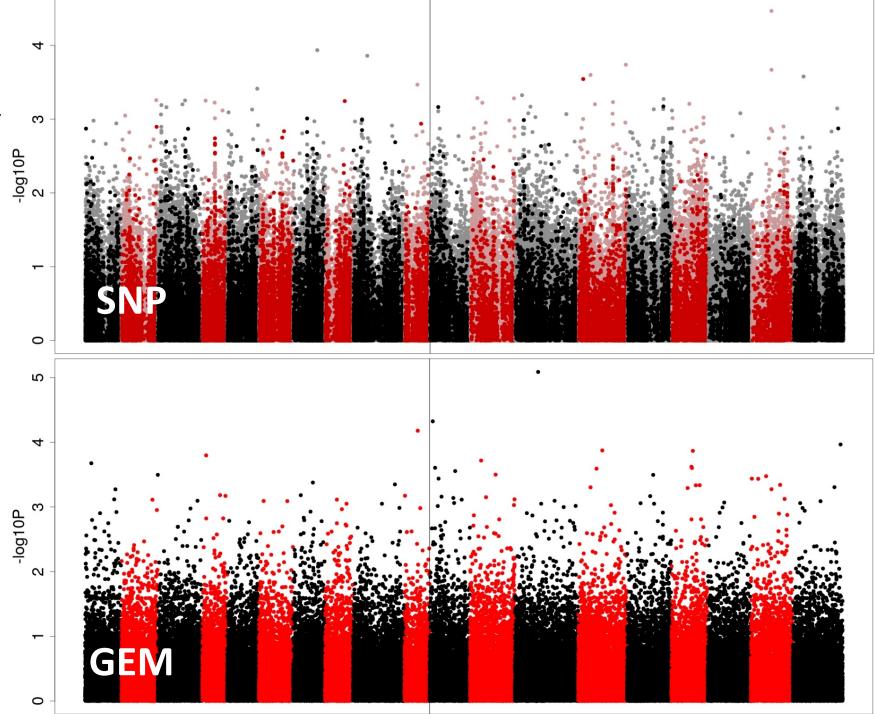
#### Diameter (mm)



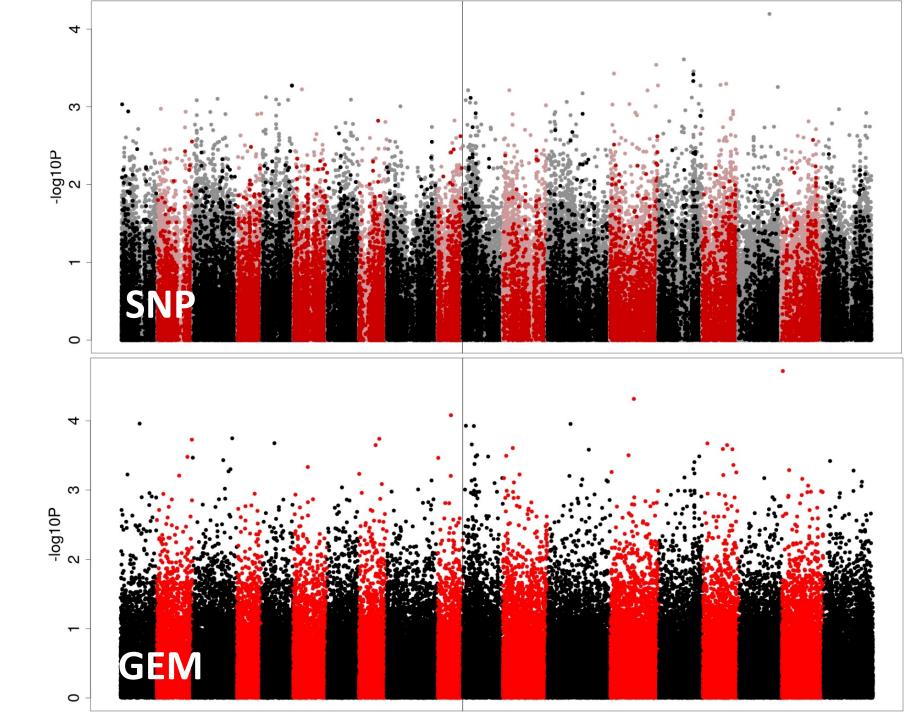
#### Root length density (cm root / cm<sup>3</sup> soil)



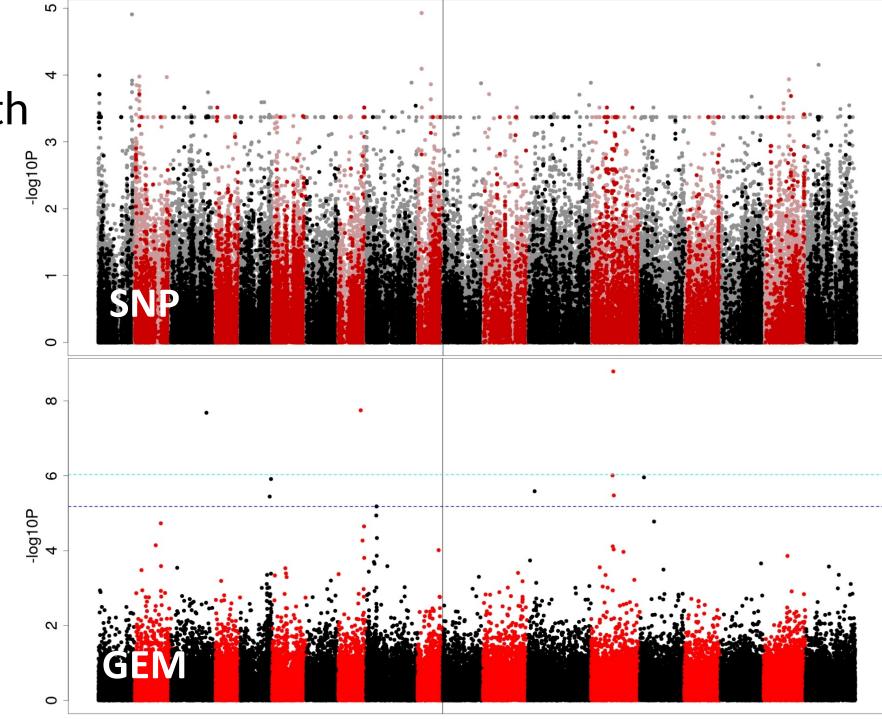
## Root length density >5mm thick (cm root / cm<sup>3</sup> soil)



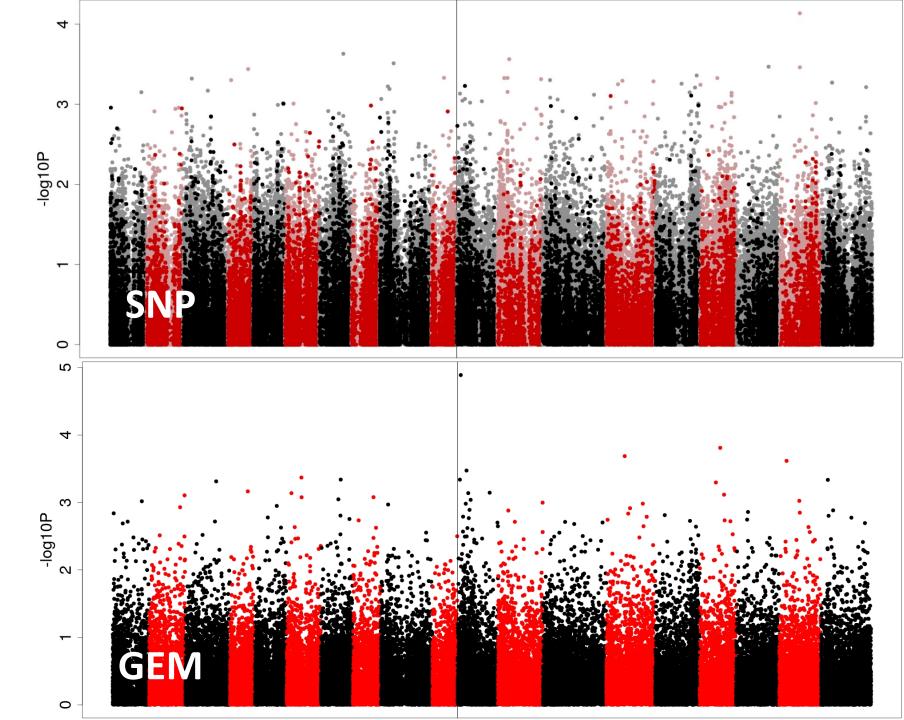
Root mass (mg/cm<sup>3</sup>)



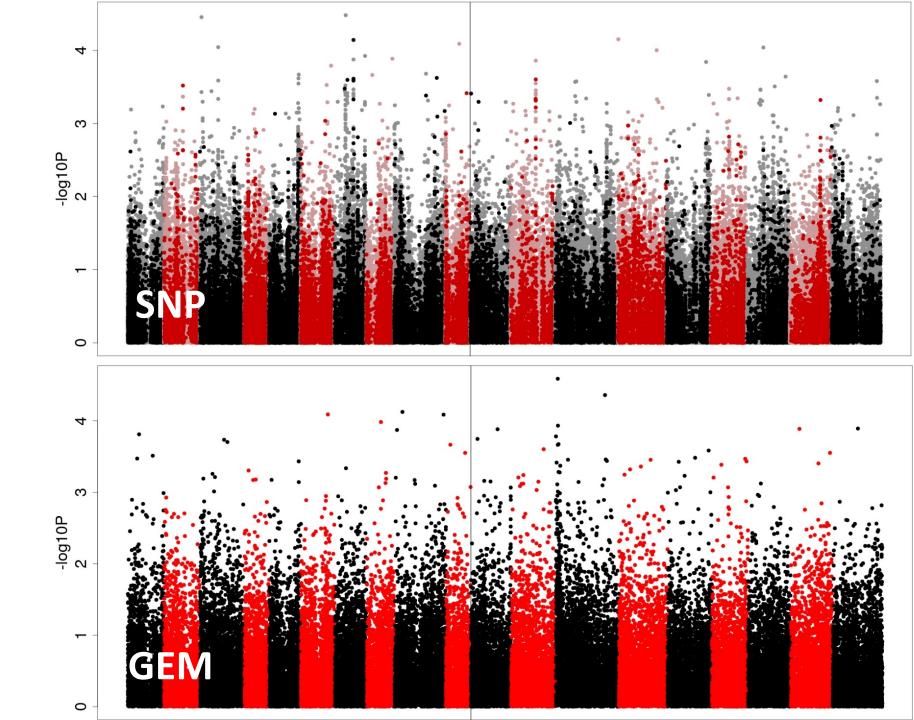
## Specific root length (m/mg)



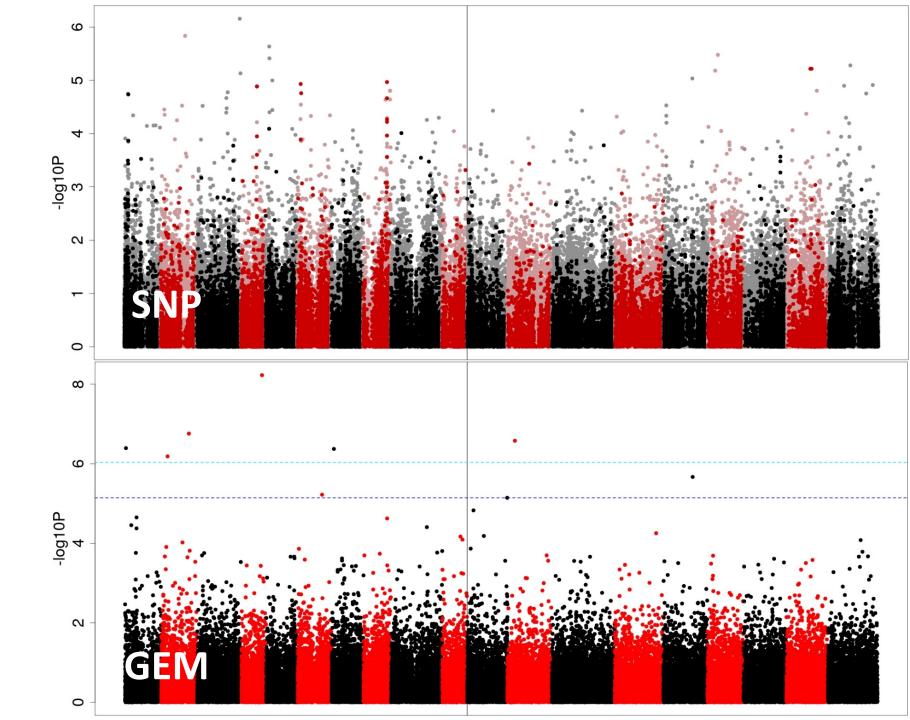
#### Surface area (cm<sup>2</sup>/cm<sup>3</sup> soil)



## Early vigour (Elsoms 2016)



## Establishment (Elsoms 2016)



## Yield (t/ha)

