

Utilizing multi-environment trials to improve genome-wide association studies and our understanding of crop adaptation: a case study with lentil (*Lens culinaris* Medik.)

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Contents

Contents	2
AGILE Project	2
Collaborators	3
Sponsors	3
Figures	4
Figure 1	4
Figure 2	5
Figure 3	6
Figure 4	7
Figure 5	8
Figure 6	9
Supplemental Tables	9
Supplemental Table 1	9
Supplemental Figures	10
Supplemental Figure 1	10
Supplemental Figure 2	11
Supplemental Figure 3	12
Additional Figures	13
Phenotype Data	13
Grouped Manhattan Plots	14
Facetted & Multi-Modeled Manhattan Plots	20

Derek Wright, Sandesh Neupane, ... and Kirstin E. Bett. (2021) Utilizing multi-environment trials to improve genome-wide association studies and our understanding of crop adaptation: a case study with lentil (*Lens culinaris* Medik.). *Journal???* .

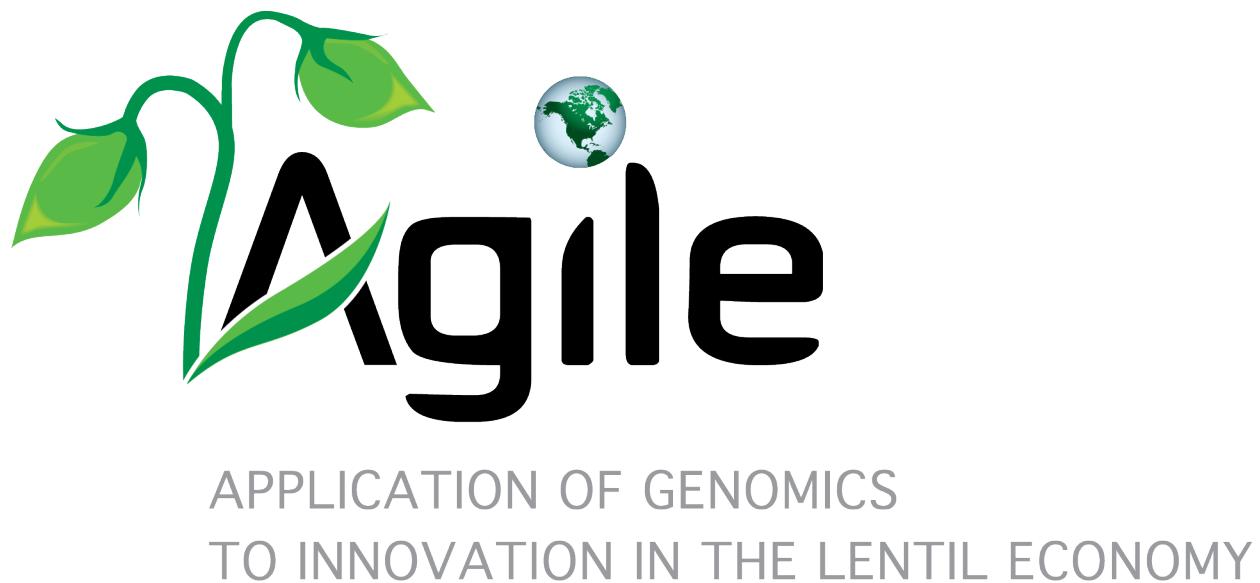
[View as pdf](#)

[Source Code Vignette \(GWAS_Phenology_Vignette.html\)](#)

Contents

- Figures
- Supplemental Figures
- Supplemental Tables
- Additional Figures

AGILE Project



Collaborators

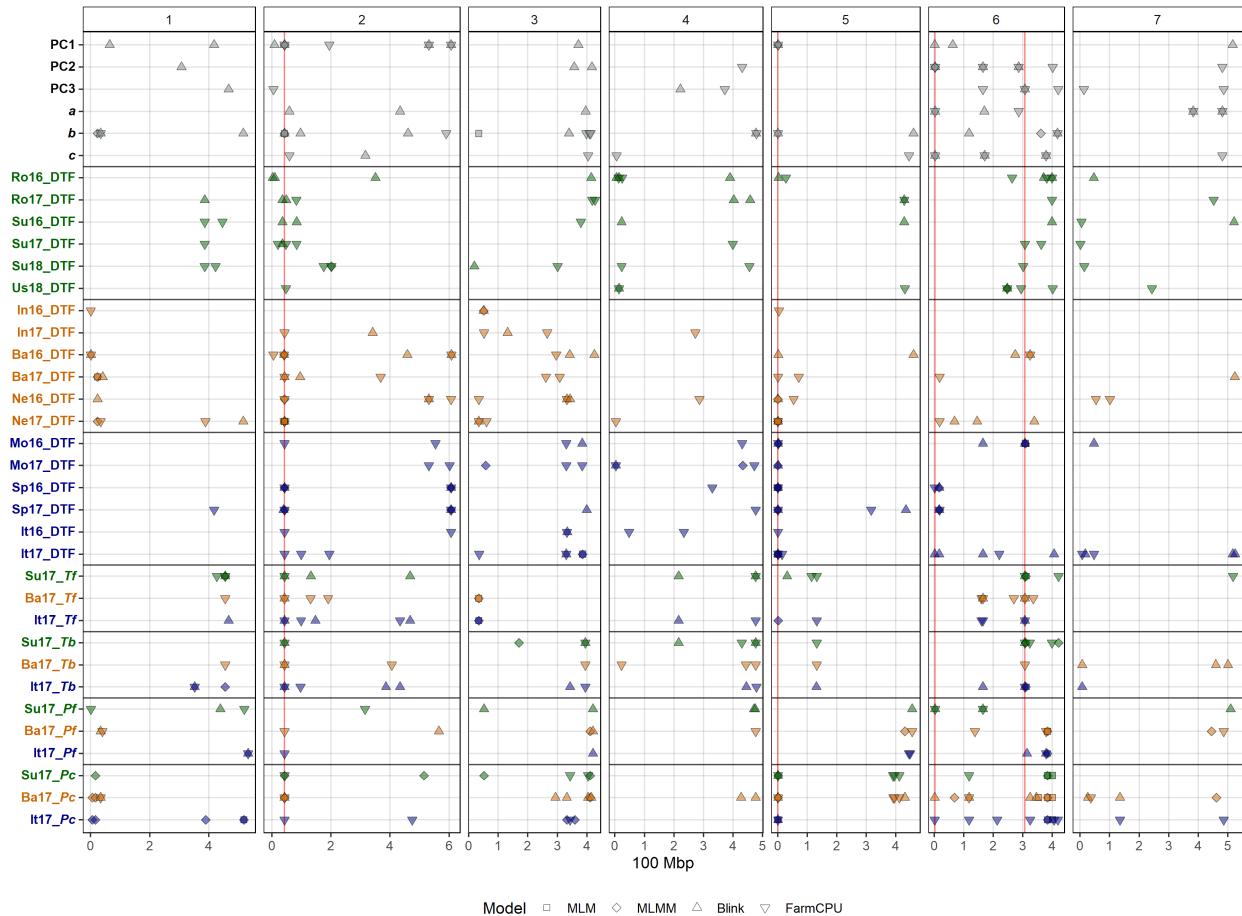
- Department of Plant Sciences and Crop Development Centre, University of Saskatchewan, Saskatoon, Saskatchewan, Canada
- UTAZ

Sponsors

-
- Saskatchewan Pulse Growers Association
 - Western Grains Research Foundation
 - GenomePrairie
 - GenomeCanada
 - Saskatchewan Ministry of Agriculture

Figures

Figure 1



Additional/Figure_01_plotly.html

Figure 2

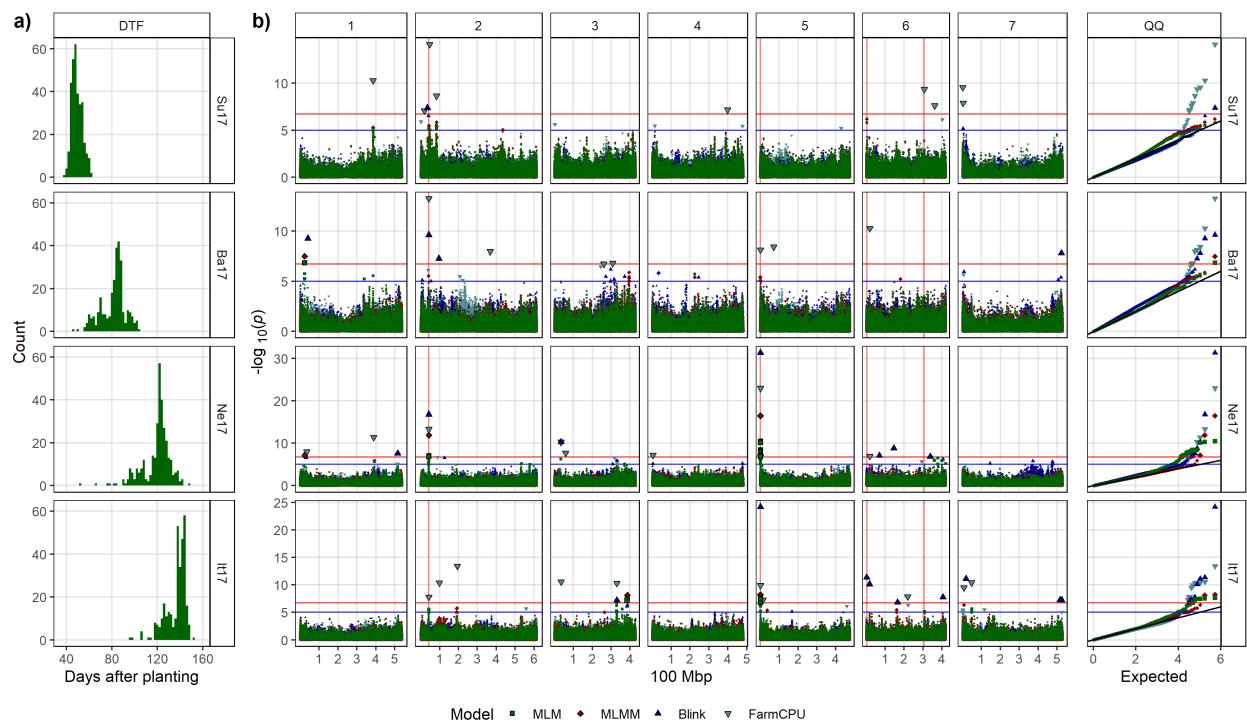


Figure 3

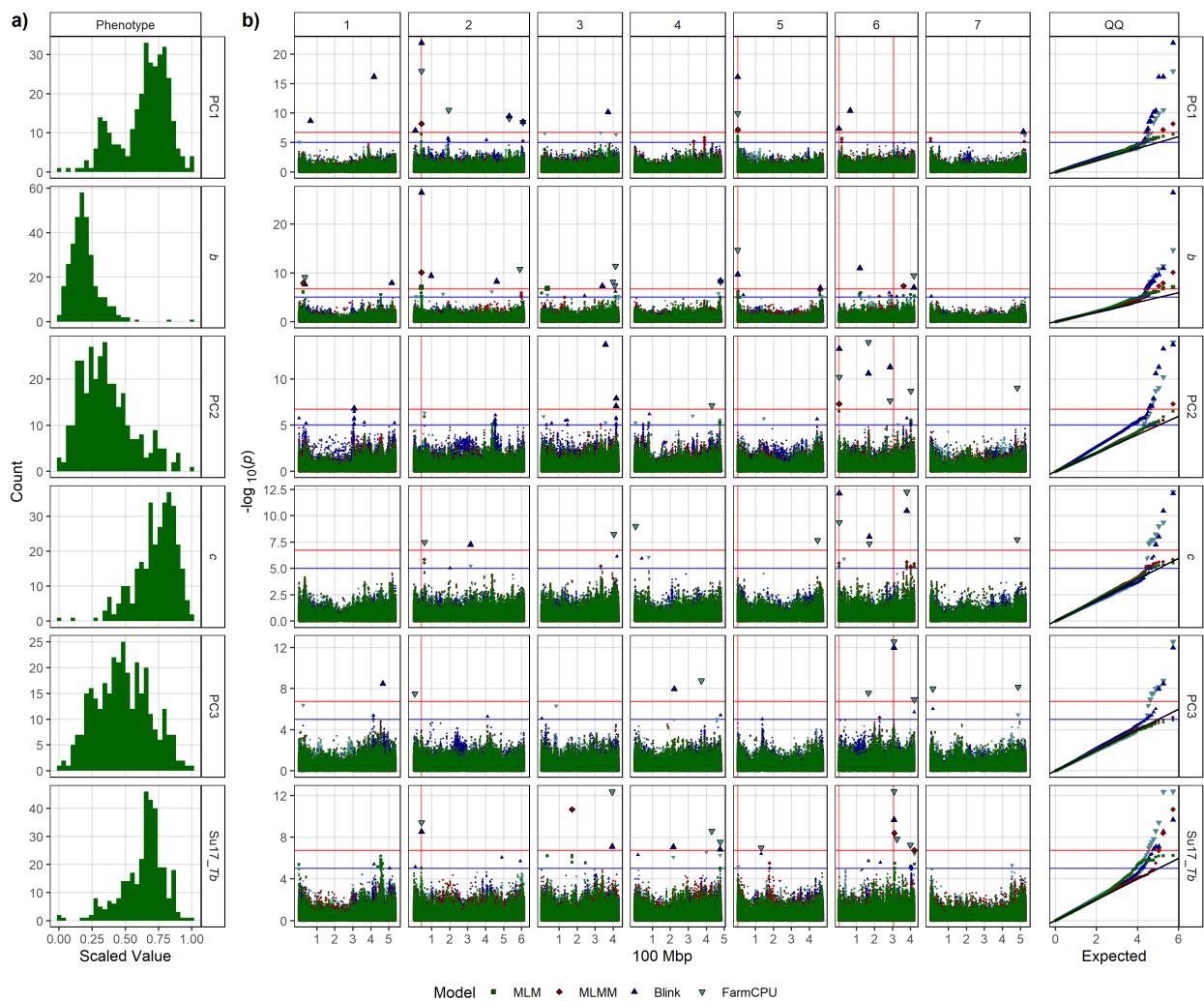


Figure 4

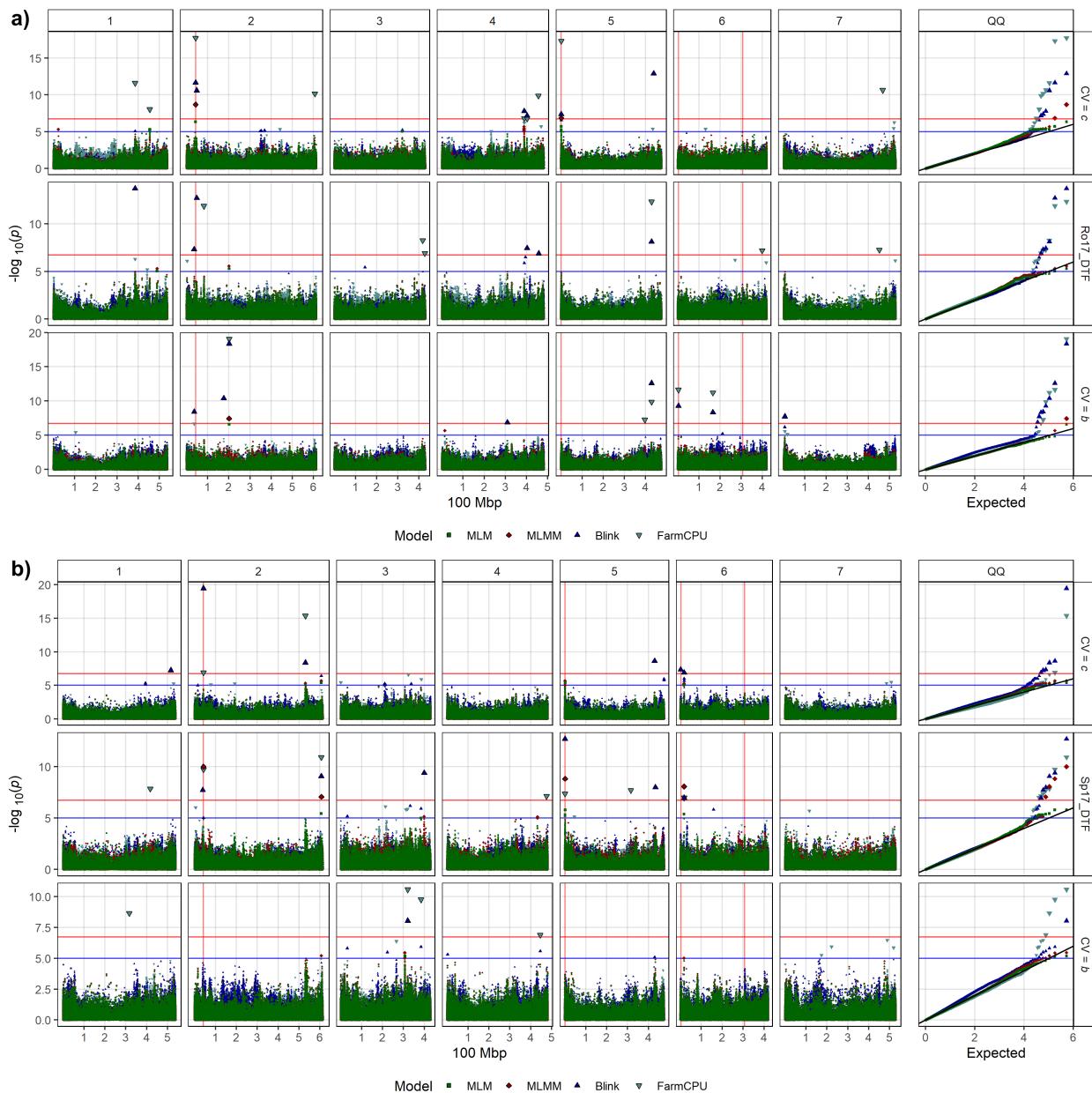
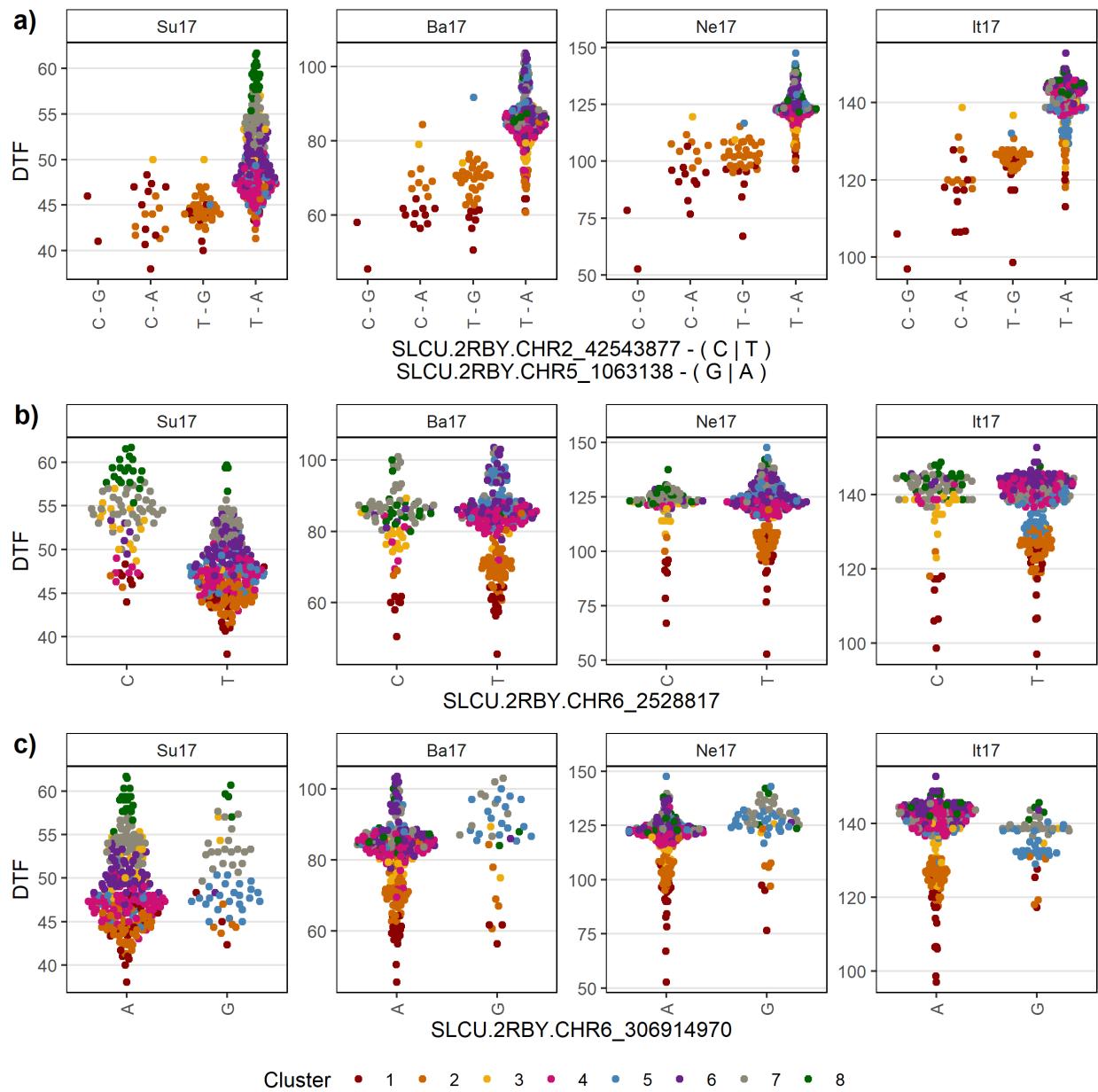


Figure 5

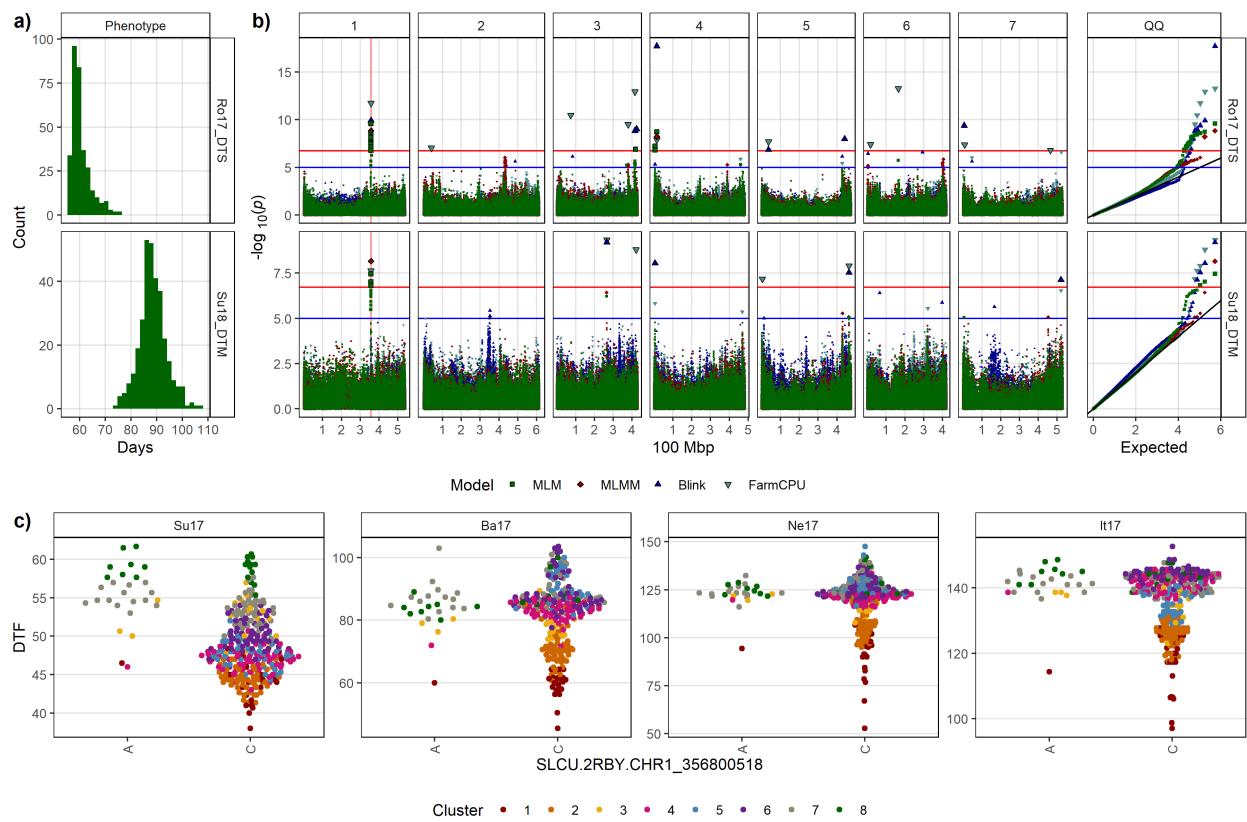


[Additional/Figure_05_a_plotly.html](#)

[Additional/Figure_05_b_plotly.html](#)

[Additional/Figure_05_c_plotly.html](#)

Figure 6



Additional/Figure_06_c_plotly.html

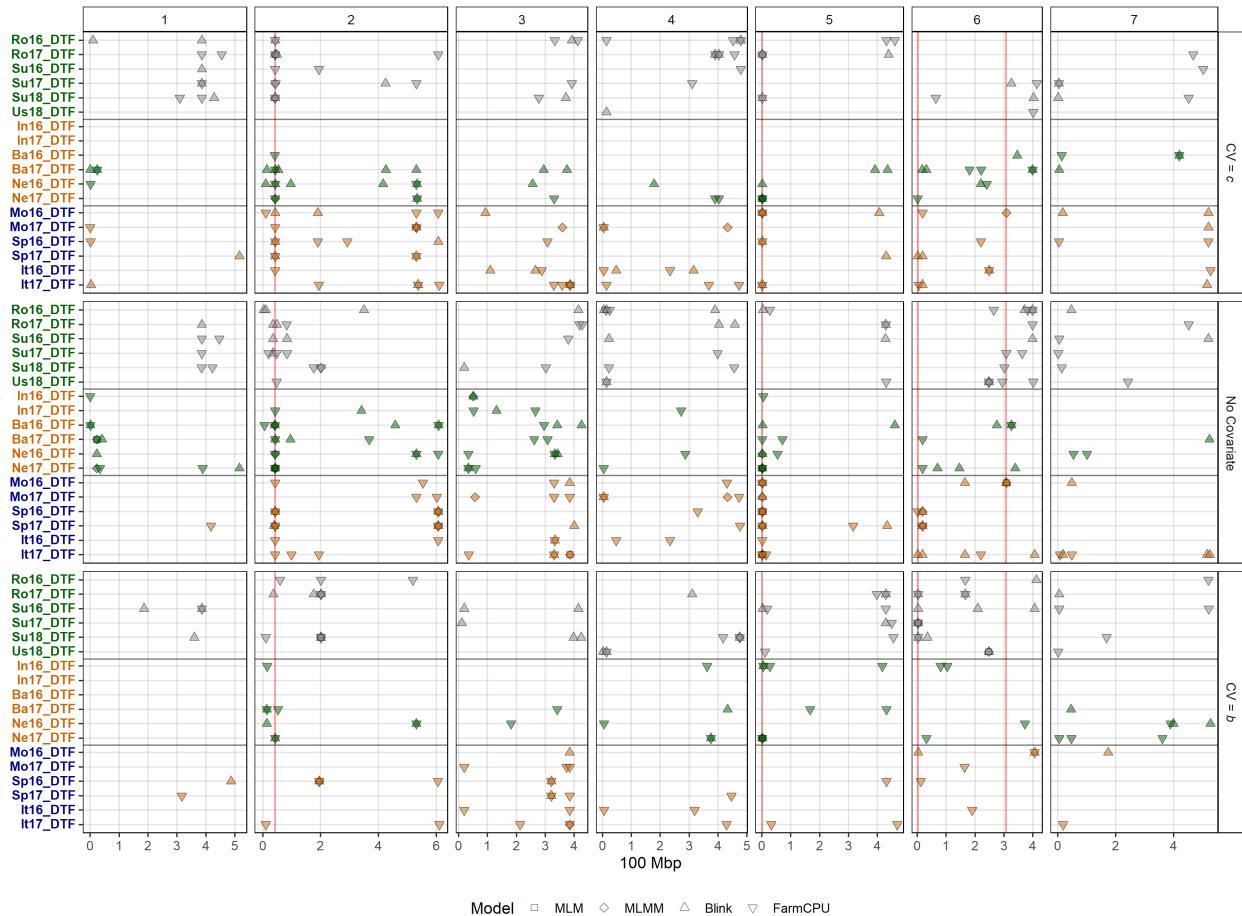
Supplemental Tables

Supplemental Table 1

Supplemental_Table_01.csv

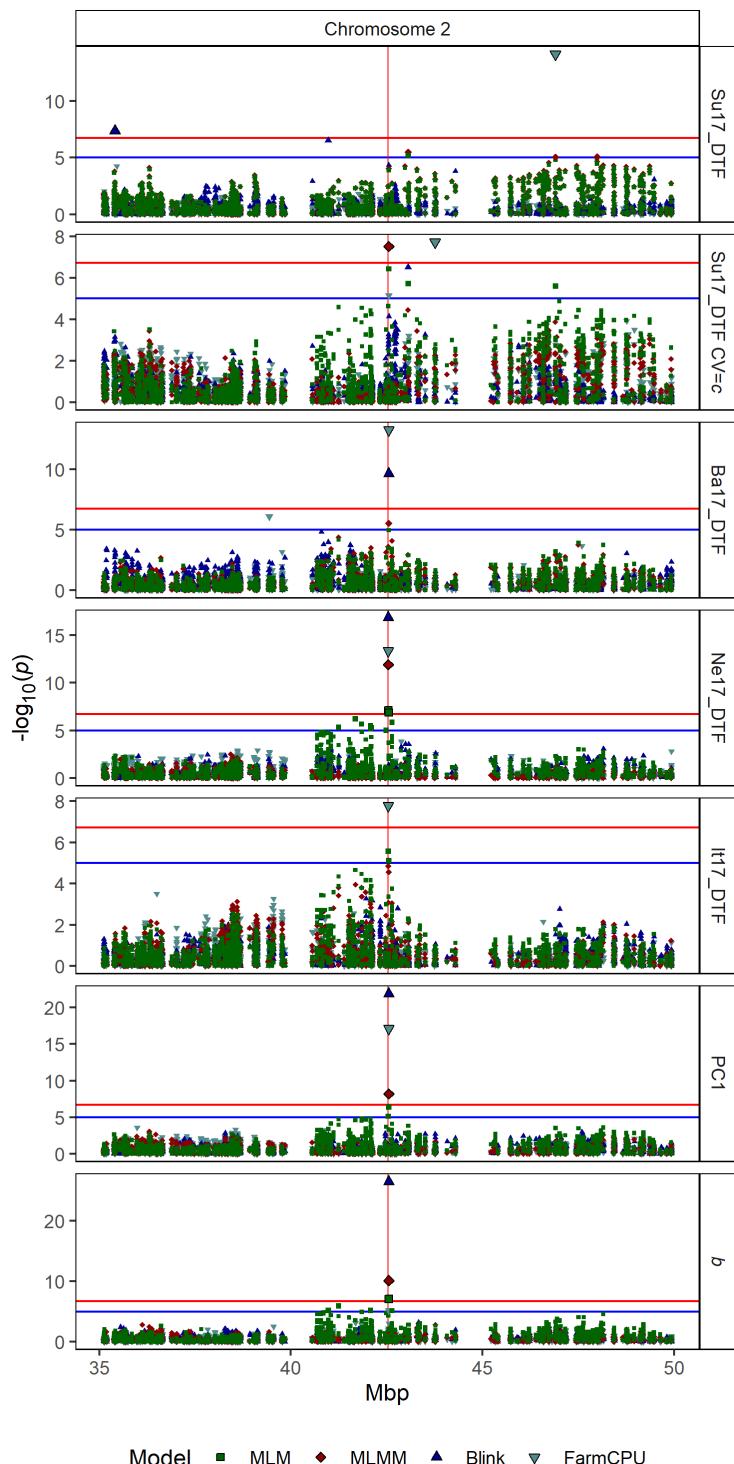
Supplemental Figures

Supplemental Figure 1

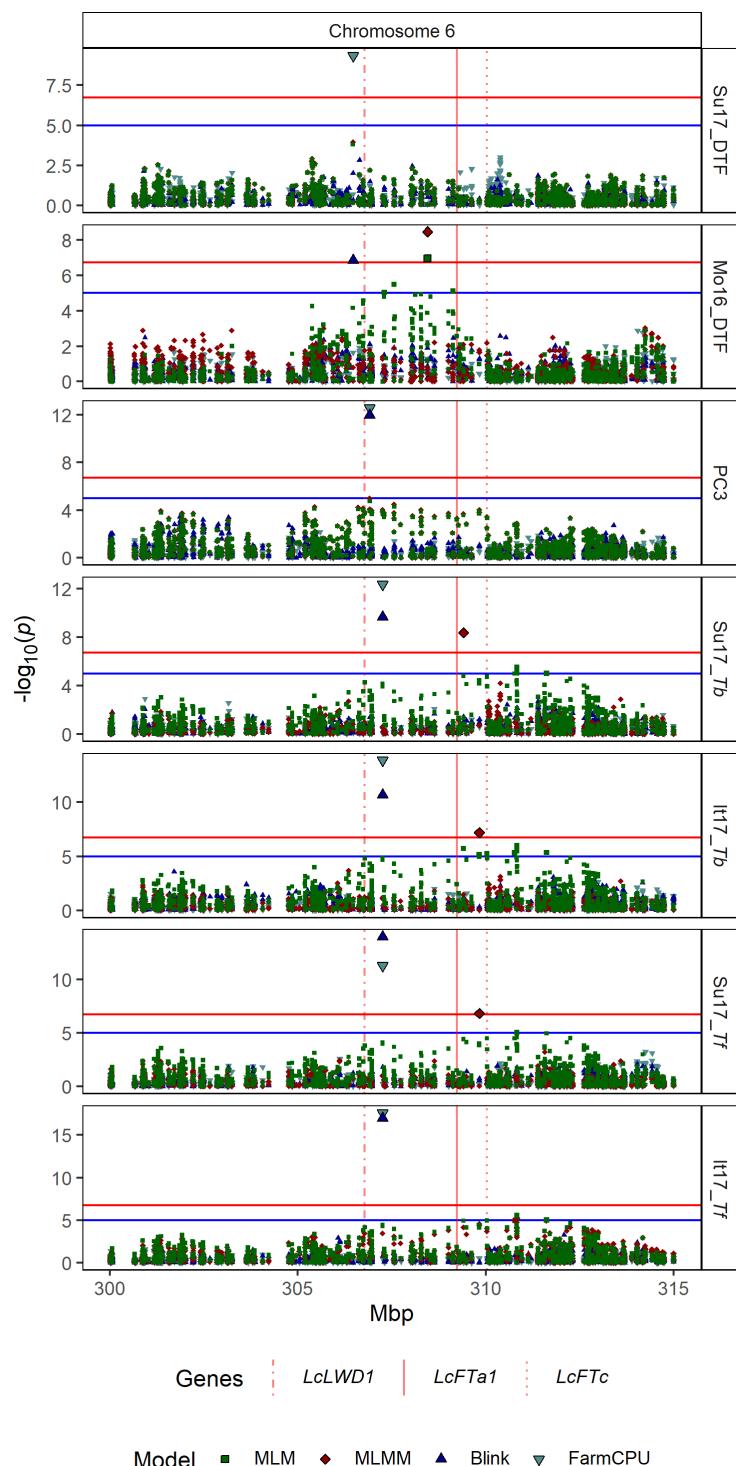


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Supplemental Figure 2

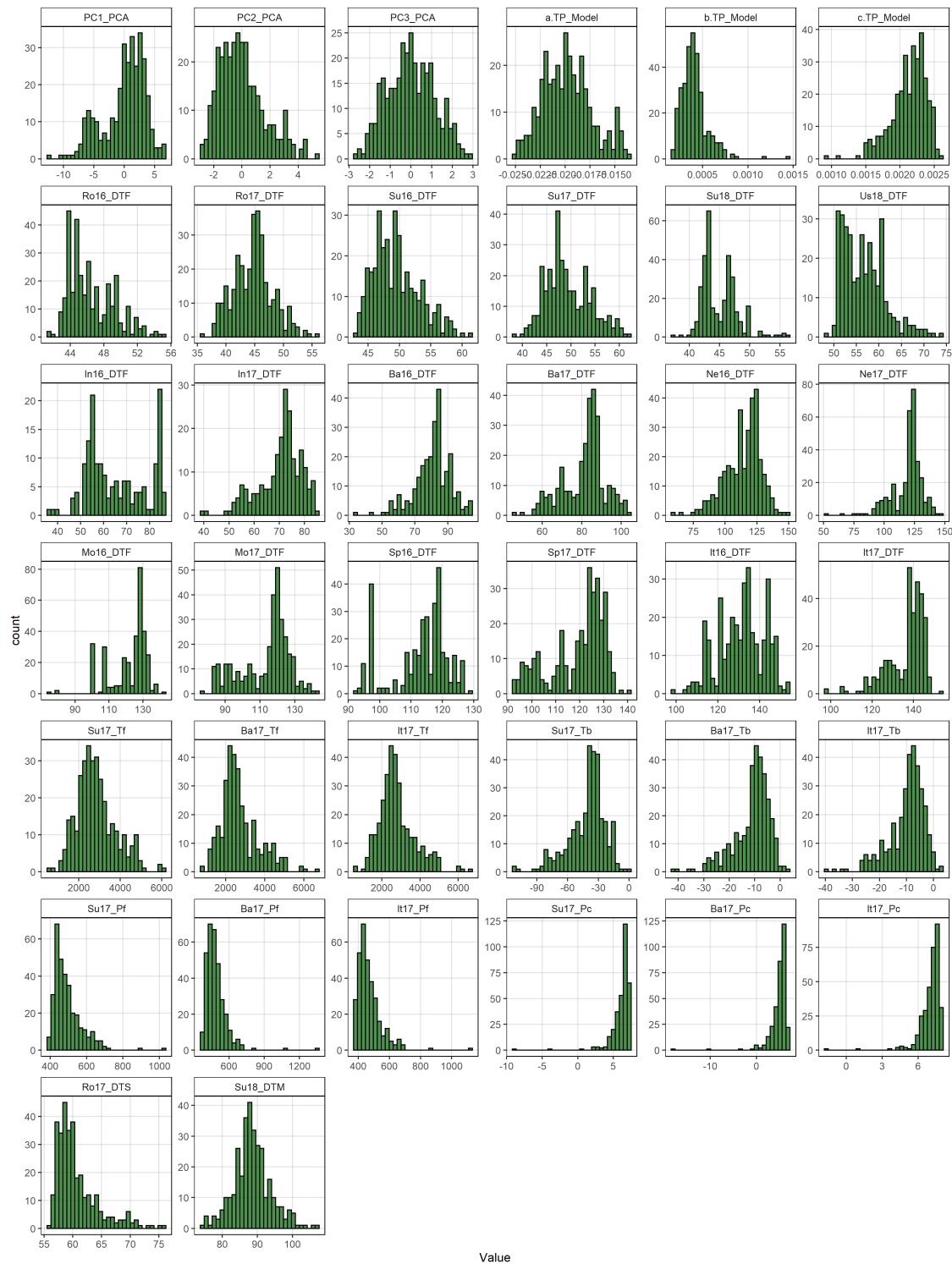


Supplemental Figure 3



Additional Figures

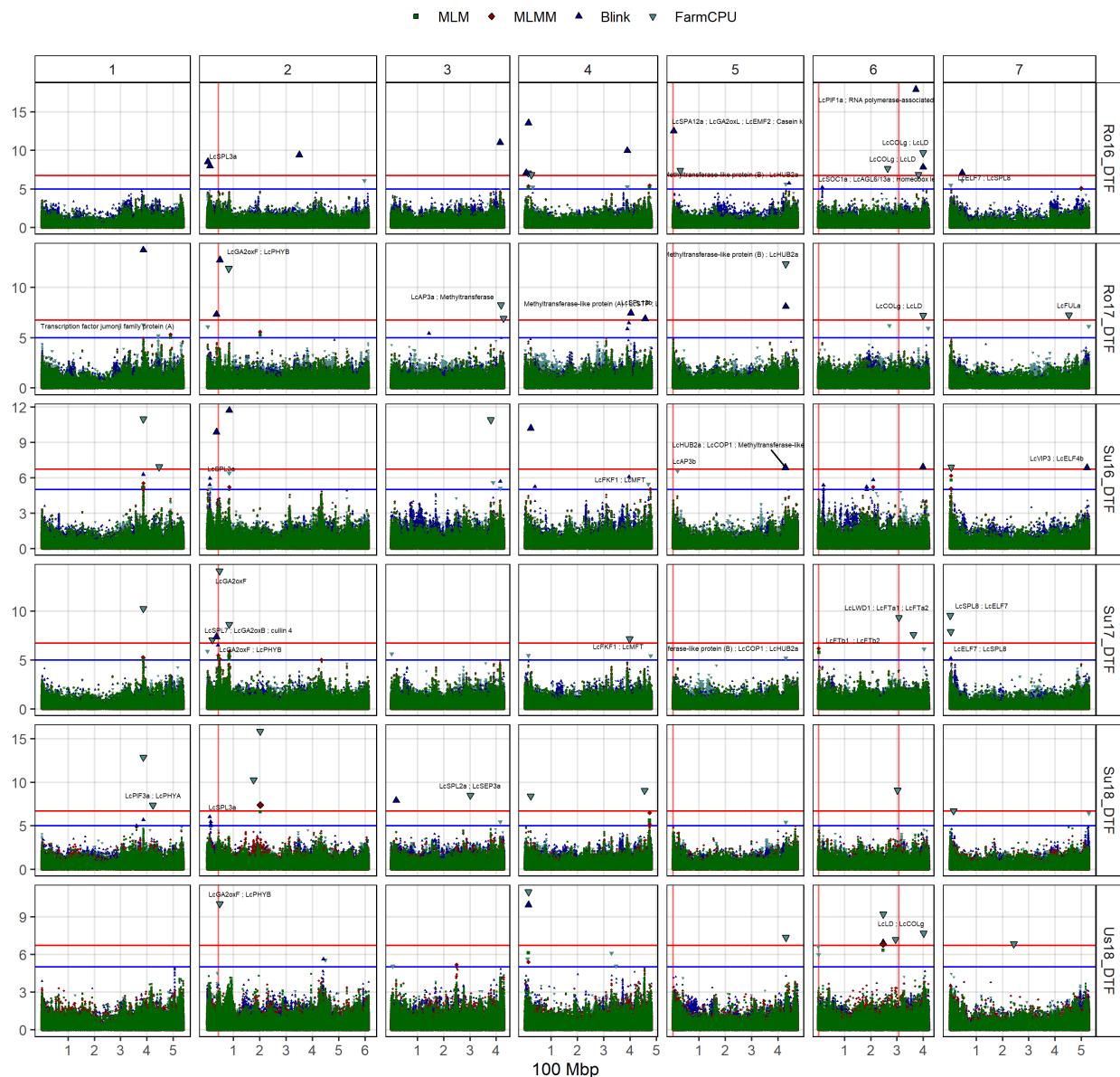
Phenotype Data



Grouped Manhattan Plots

DTF Temperate

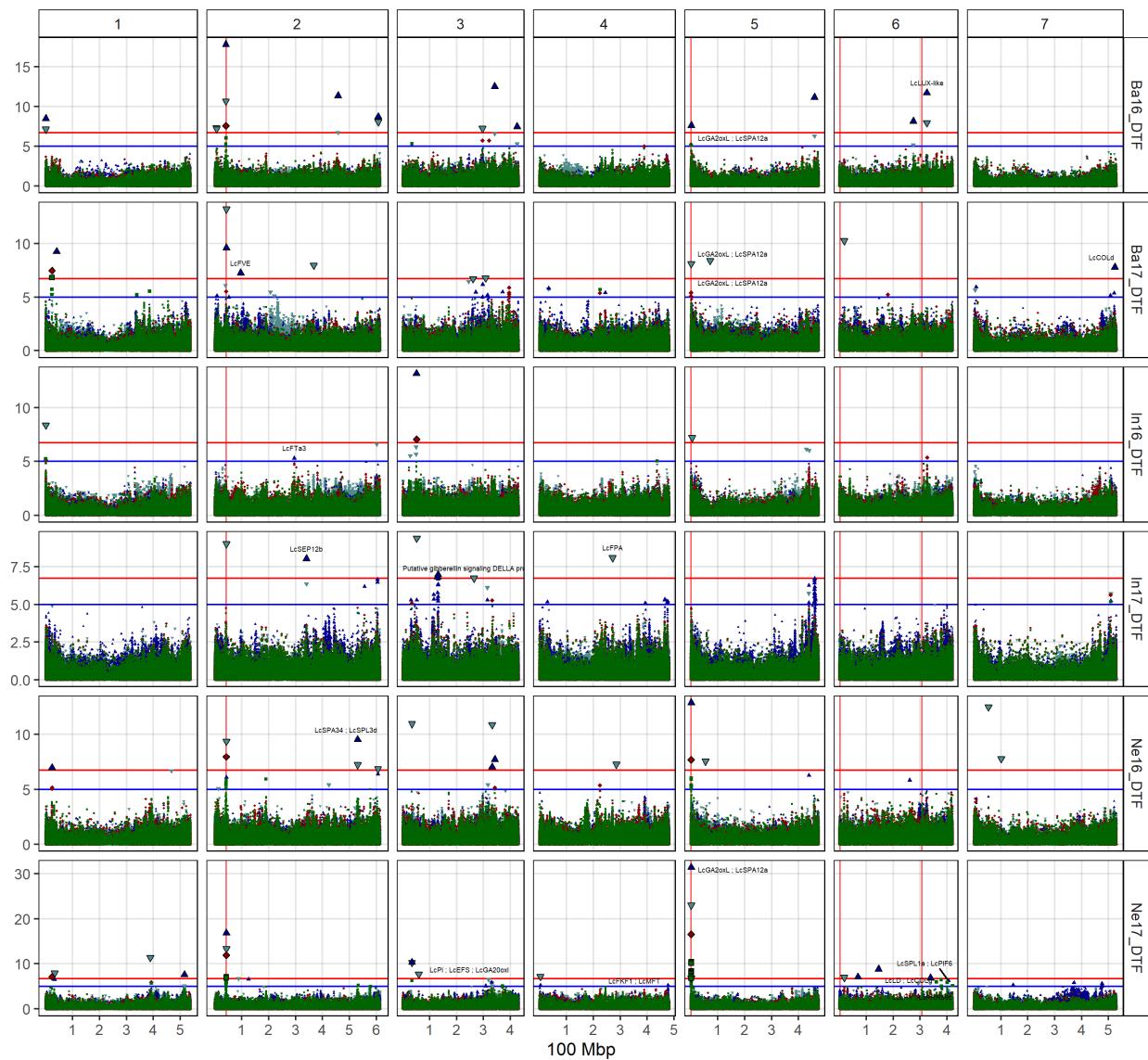
Man_DTF_Temperate



DTF South Asia

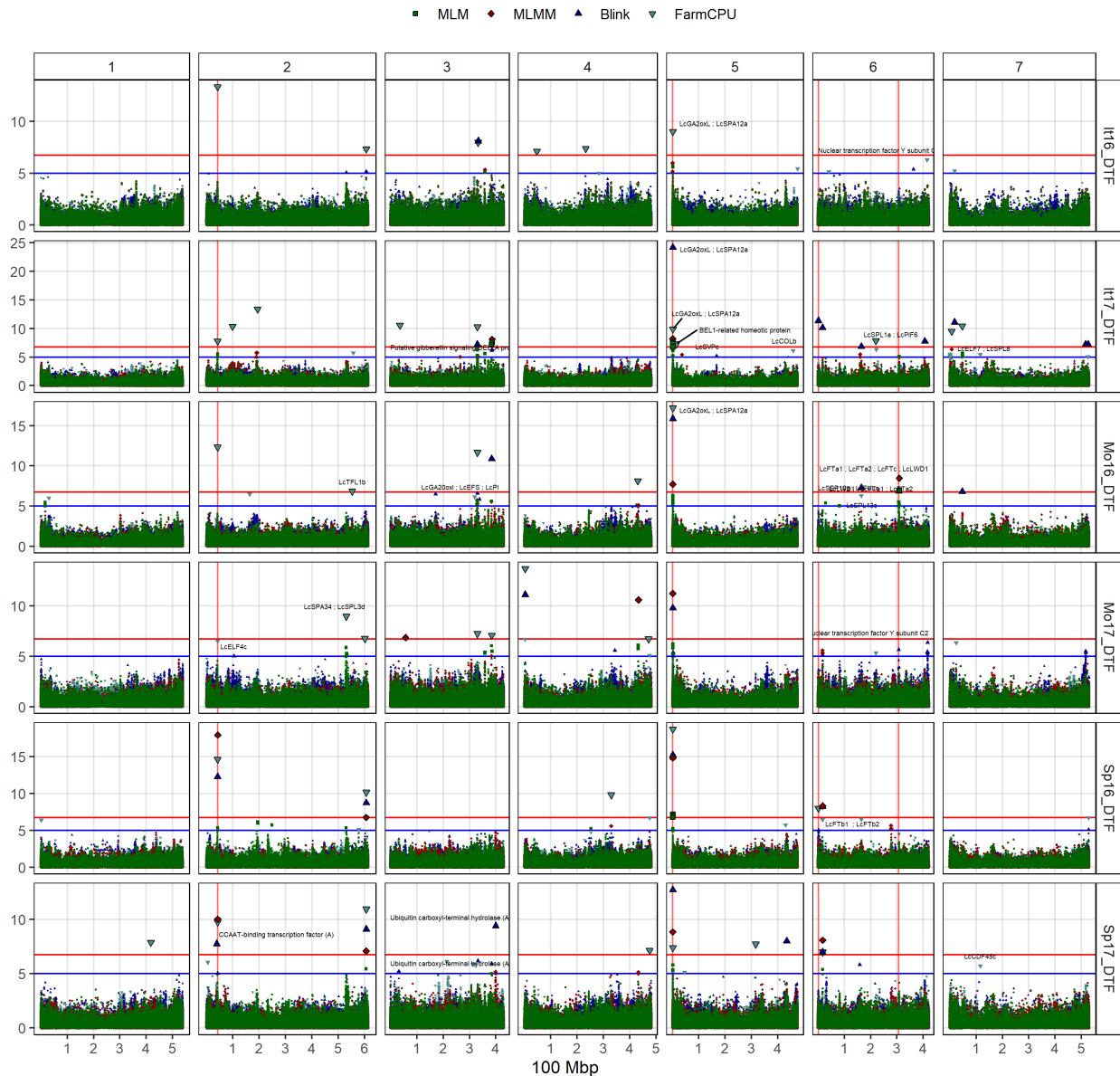
Man_DTF_SouthAsia

■ MLM ♦ MLMMM ▲ Blink ▽ FarmCPU



DTF Mediterranean

Man_DTF_Mediterranean



Tf and *Tc*

Man_Tf_Tb

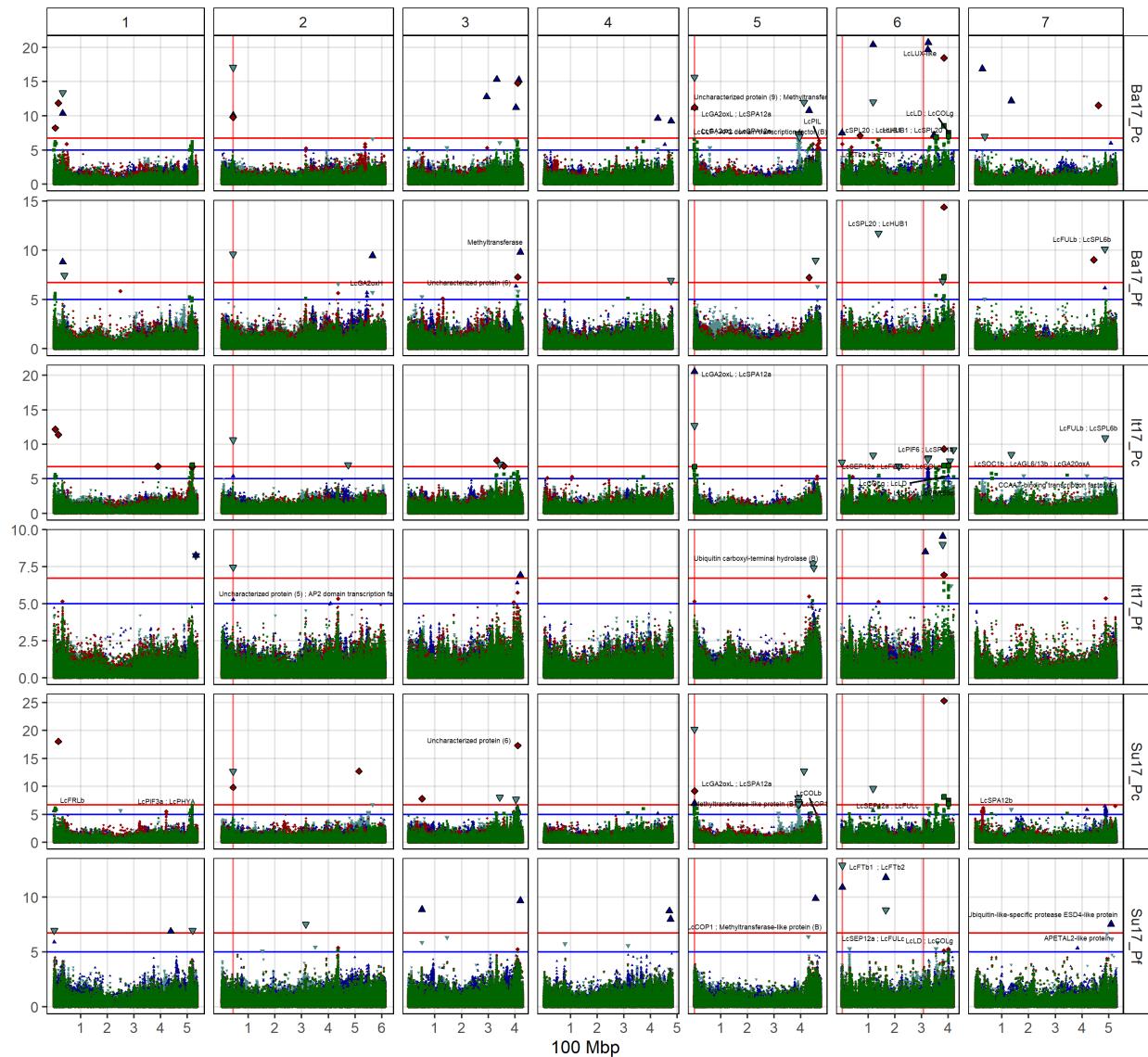
■ MLM ♦ MLMMM ▲ Blink ▽ FarmCPU



Pf and *Pc*

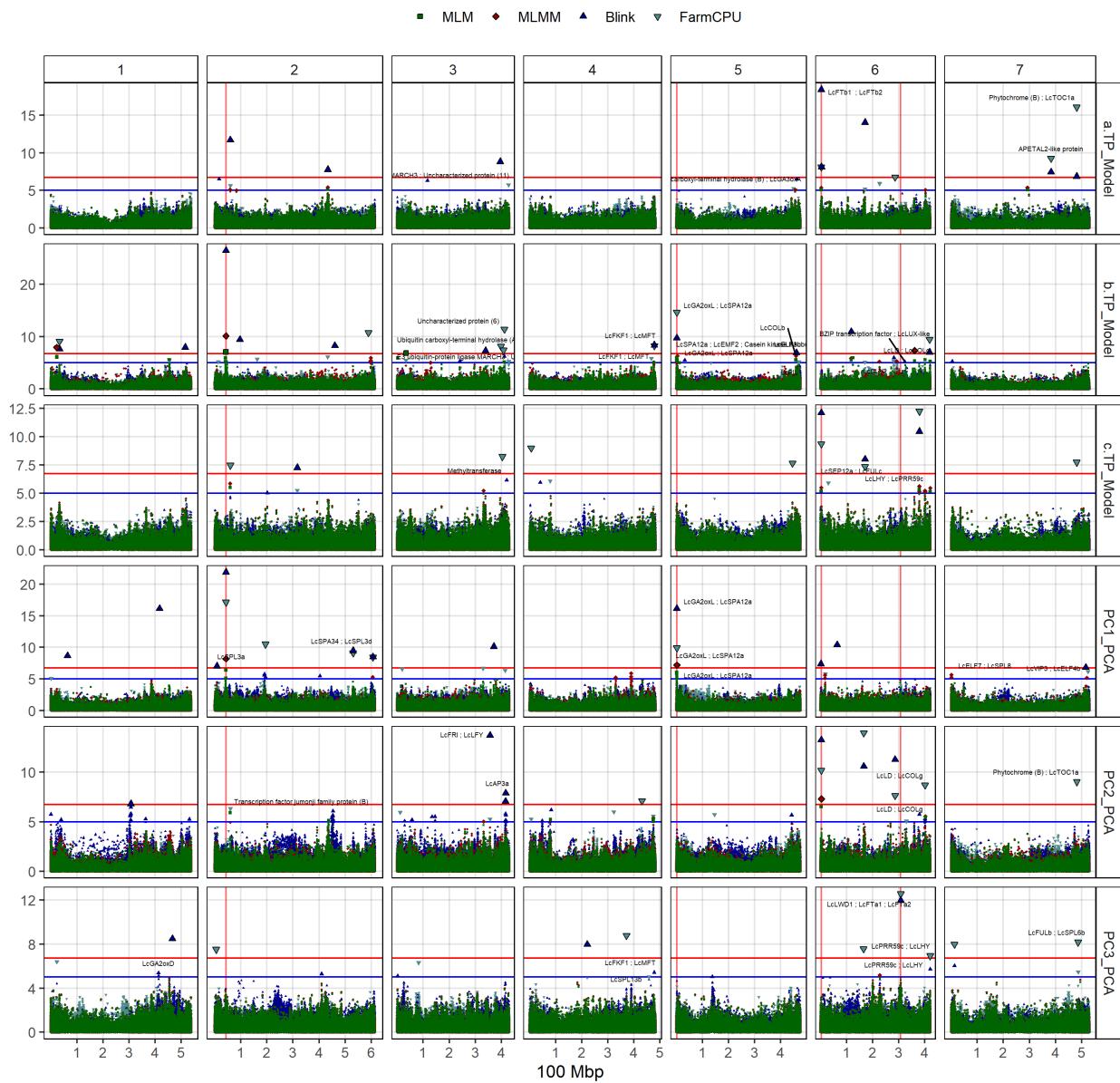
Man_Pf_Pc

■ MLM ♦ MLMM ▲ Blink ▽ FarmCPU



PCA + abc Coefficients

Man_PCA_abc



Facetted & Multi-Modeled Manhattan Plots

