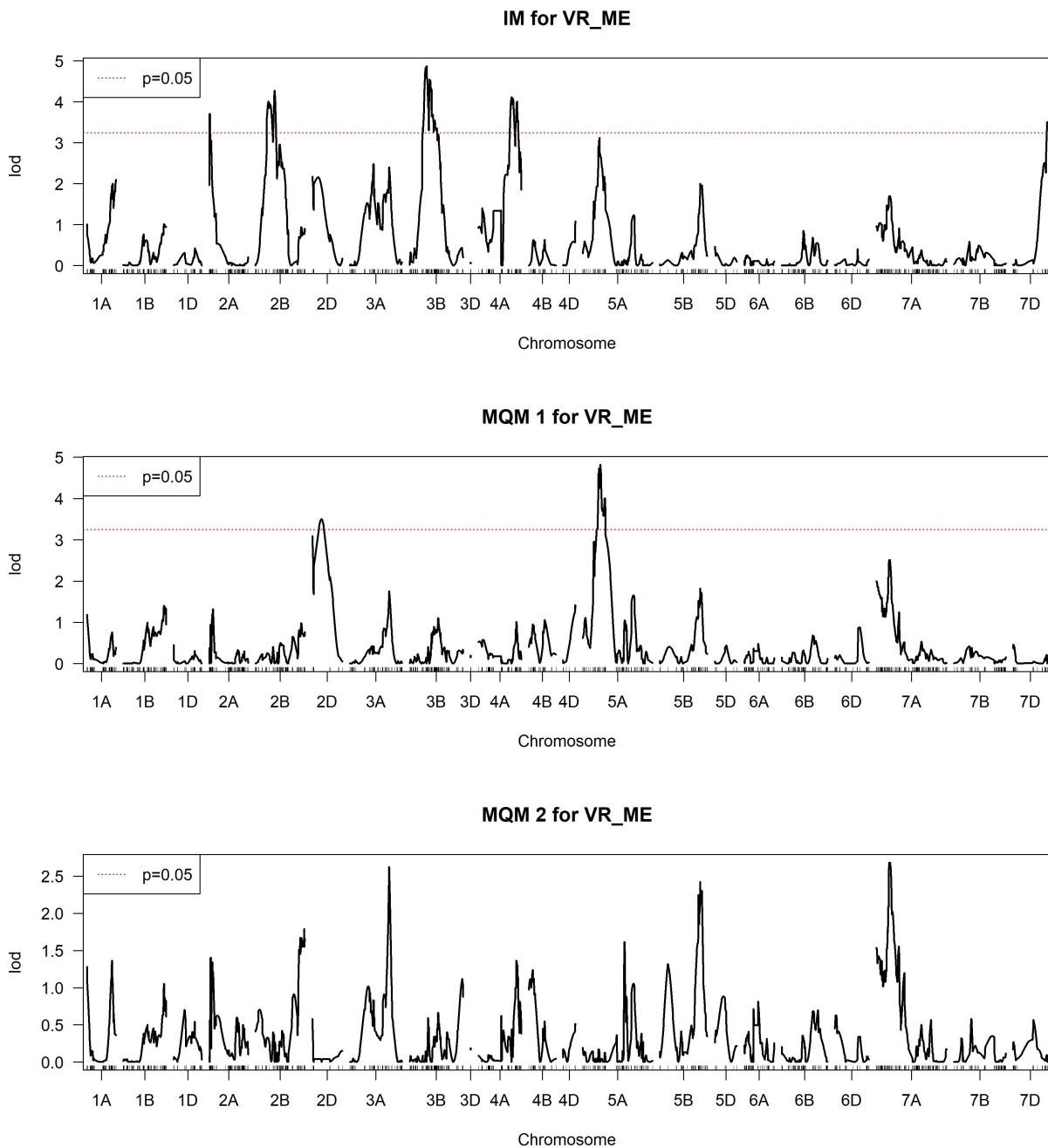


## Supplemental Information 4

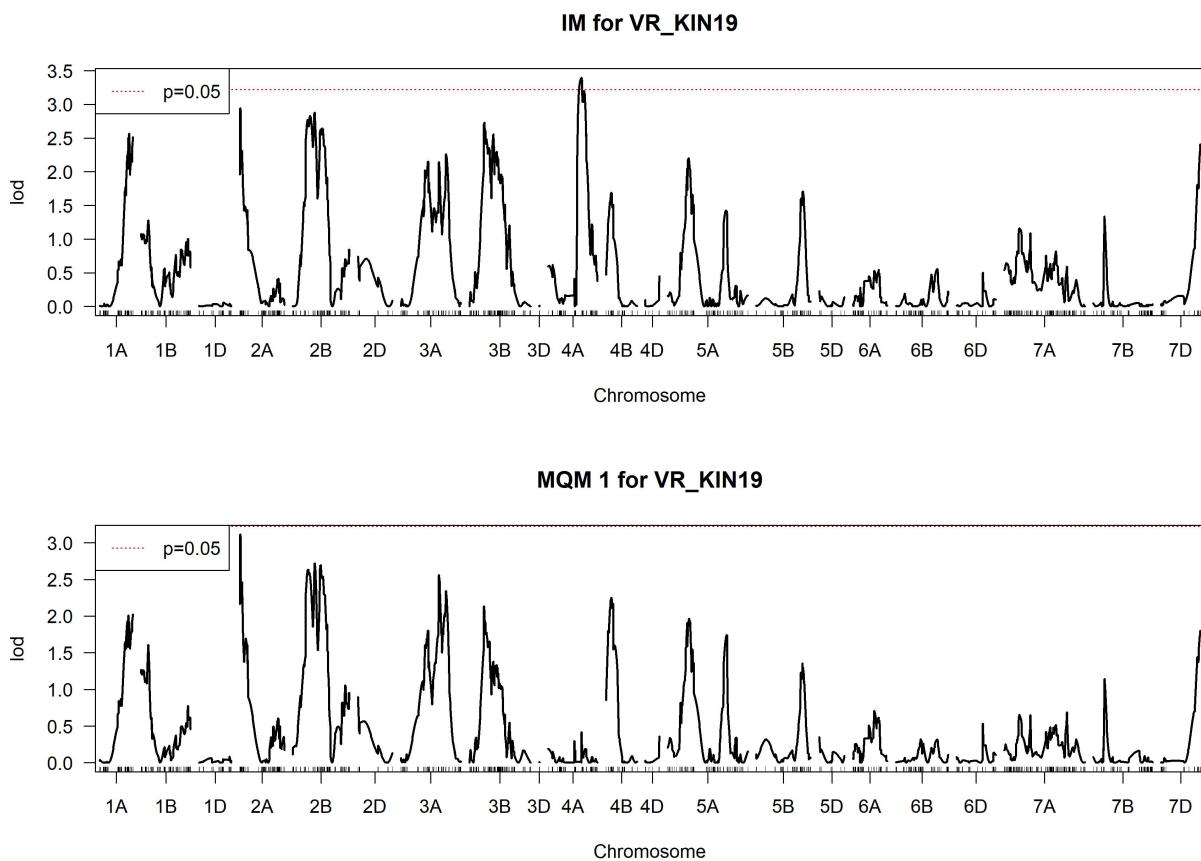
### Description

Interval mapping (IM) and multiple-quantitative-trait-locus mapping (MQM) scans for Fusarium head blight (FHB) disease resistance traits visual rating (VR), Fusarium damaged kernels (FDK), and deoxynivalenol (DON) content quantitative trait loci (QTL). In the title of each graph is displayed which type of scan (IM vs MQM) and the trait which the scan belongs to. The number following MQM titles indicates which round of MQM the scan belongs to (e.g., MQM 2 is the second round of multiple QTL mapping). The y-axis displays the likelihood of odds (LOD) score of every position across the genome. The dotted line denotes the 1000 permutation at alpha equals 0.05 significance threshold. If the significance threshold is not displayed within the graph, this indicates that all peaks detected in the QTL scan were below the significance threshold. This is usually apparent in the last MQM scan performed. The x-axis displays each linkage group, designated by their corresponding chromosome names (e.g., 1A, 1B, 1D, etc.). The rug of hash marks denotes the cM position of each marker in the recombination map.

## Visual Ratings Across All Environments

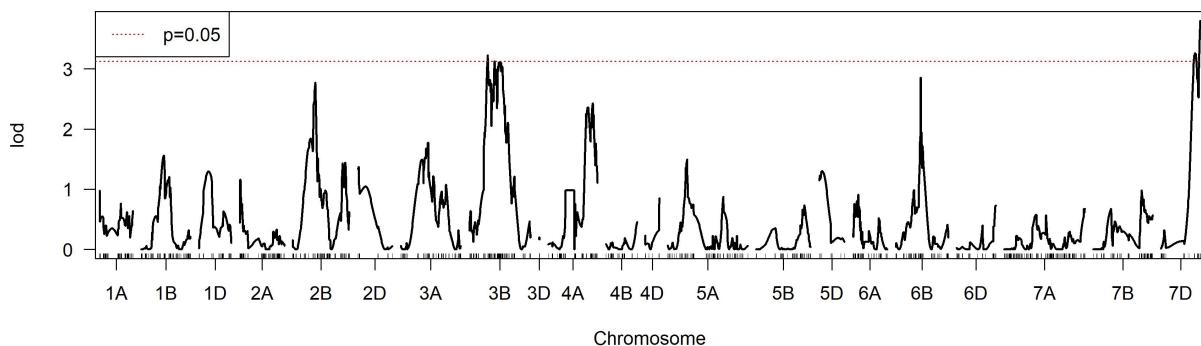


## Visual Ratings in Kinston, NC - 2019

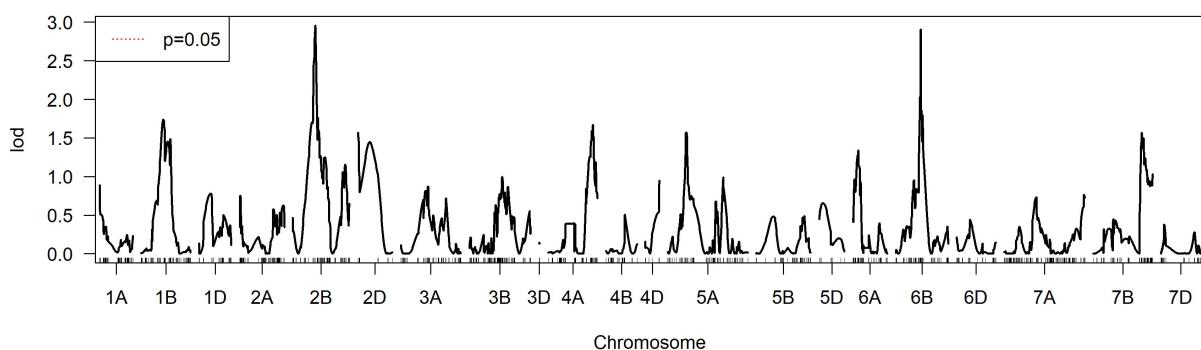


## Visual Ratings in Kinston, NC - 2020

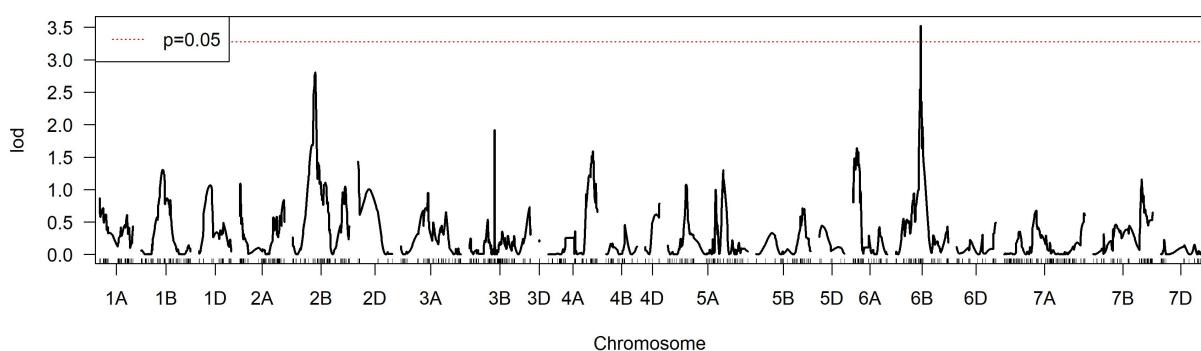
IM for VR\_KIN20



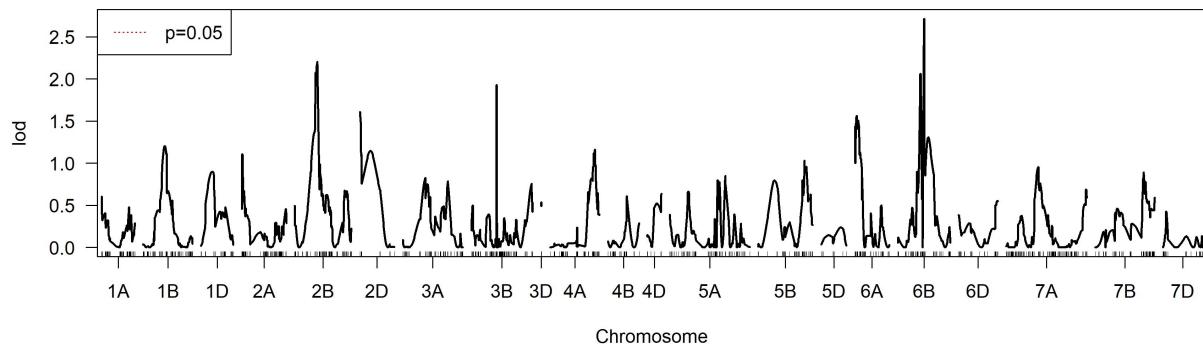
MQM 1 for VR\_KIN20



MQM 2 for VR\_KIN20

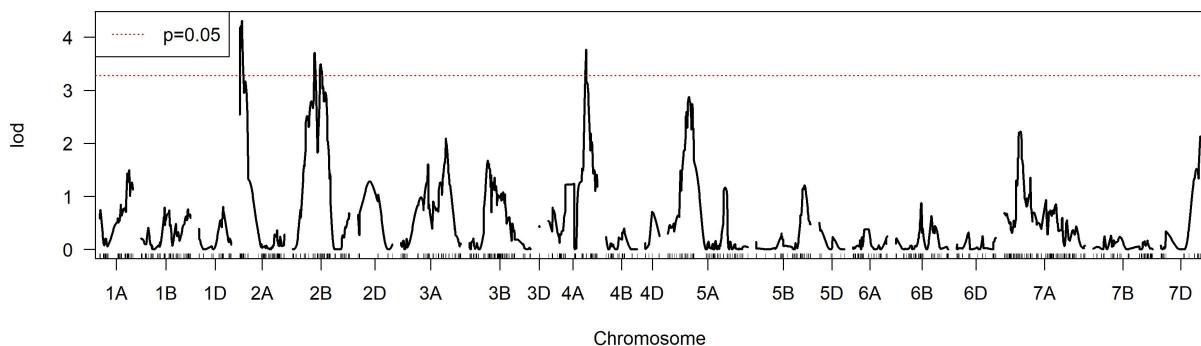


### MQM 3 for VR\_KIN20

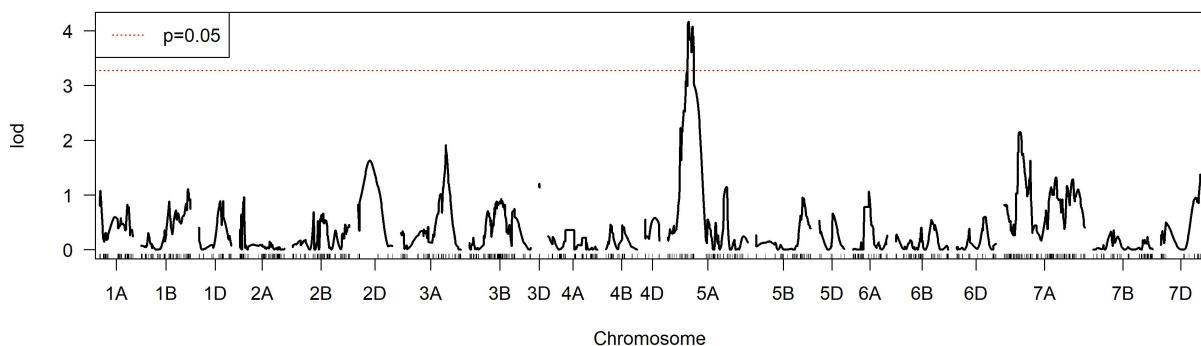


## Visual Ratings in Raleigh, NC - 2019

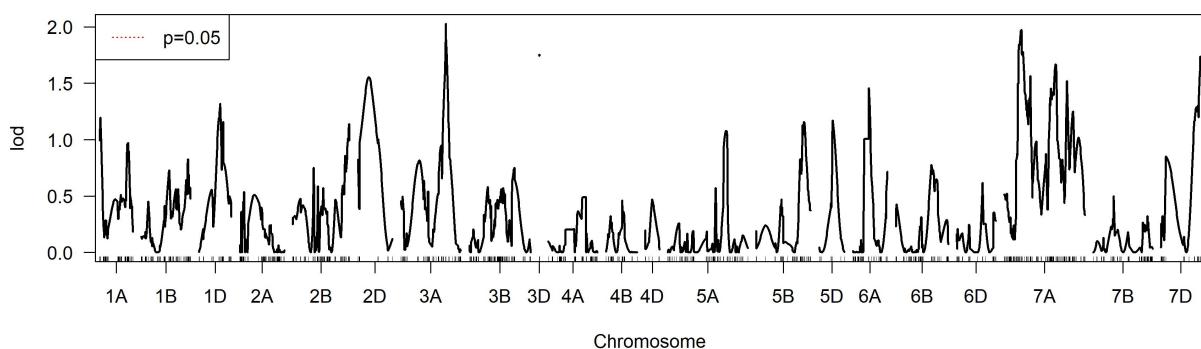
IM for VR\_RAL19



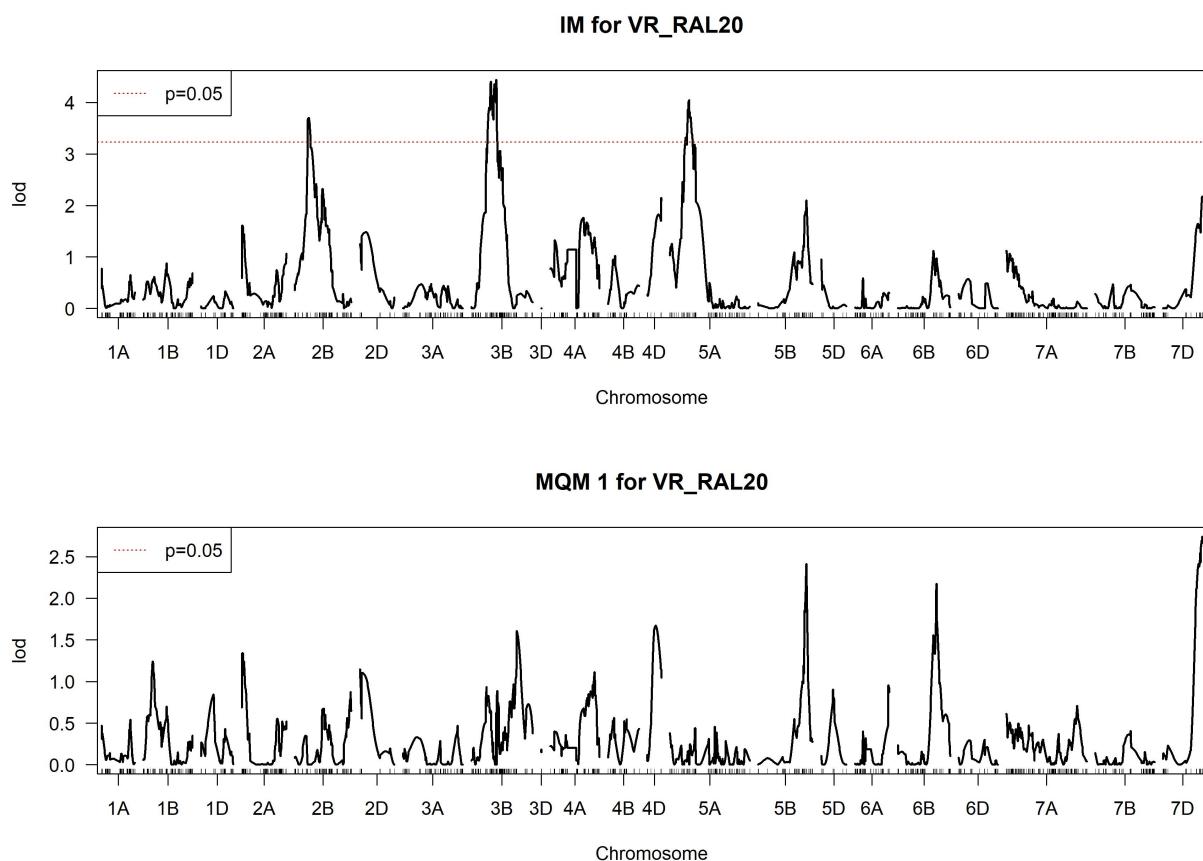
MQM 1 for VR\_RAL19



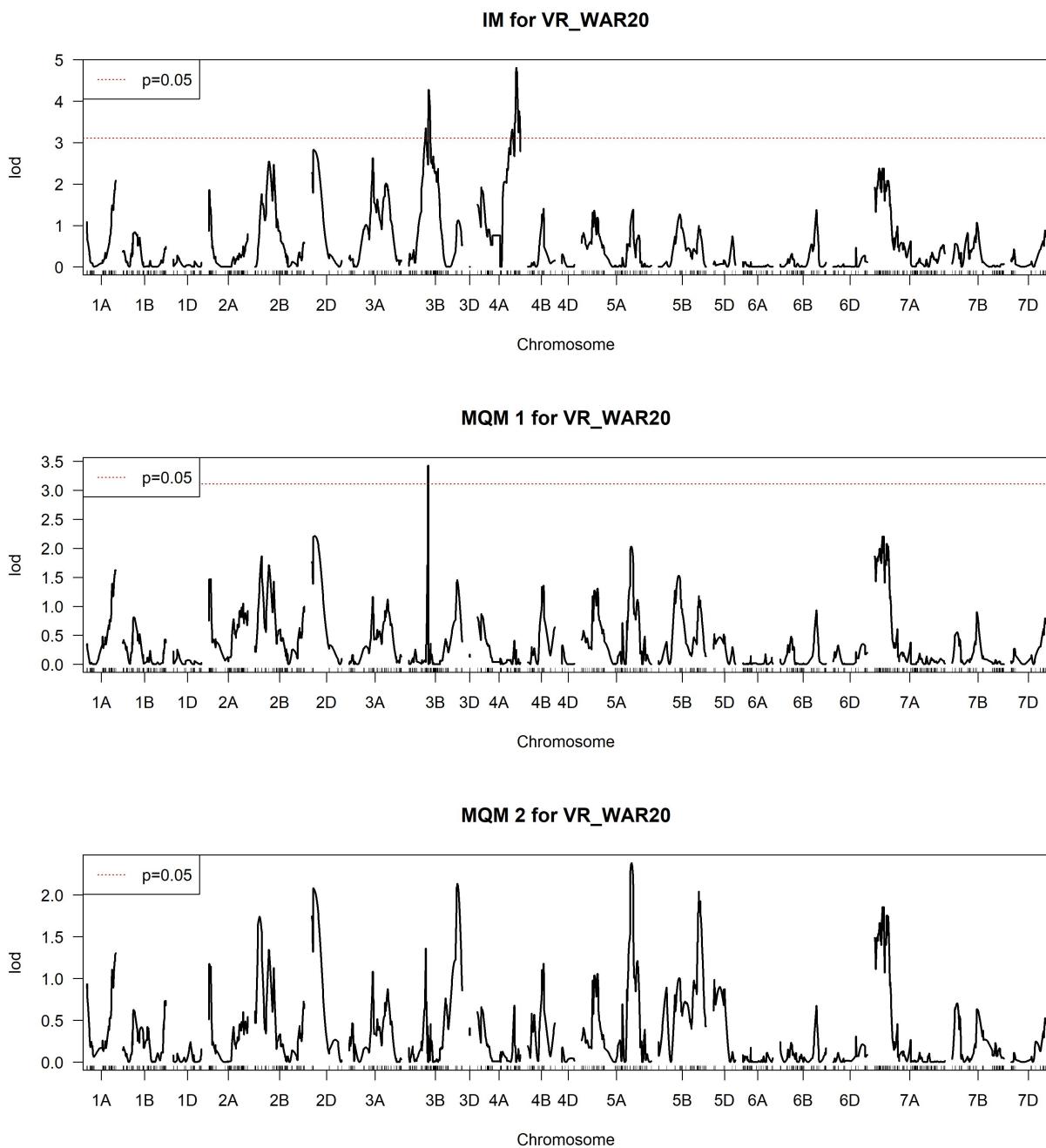
MQM 2 for VR\_RAL19



## Visual Ratings in Raleigh, NC - 2020

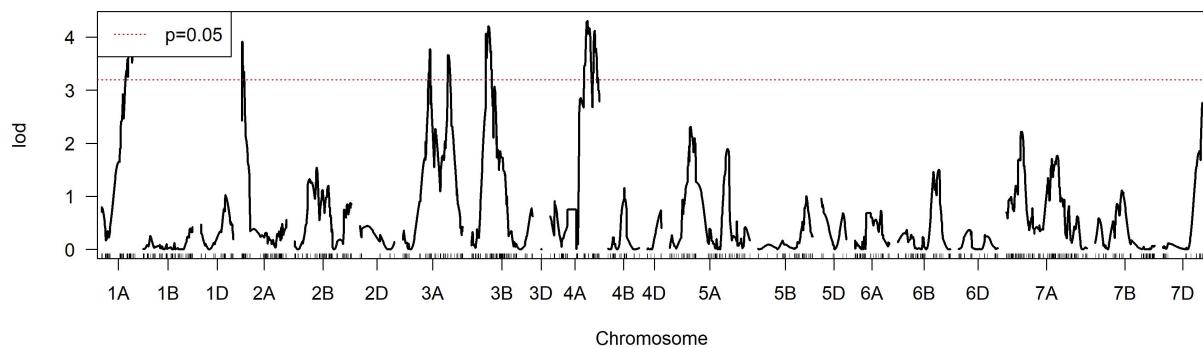


## Visual Ratings in Warsaw, VA - 2020

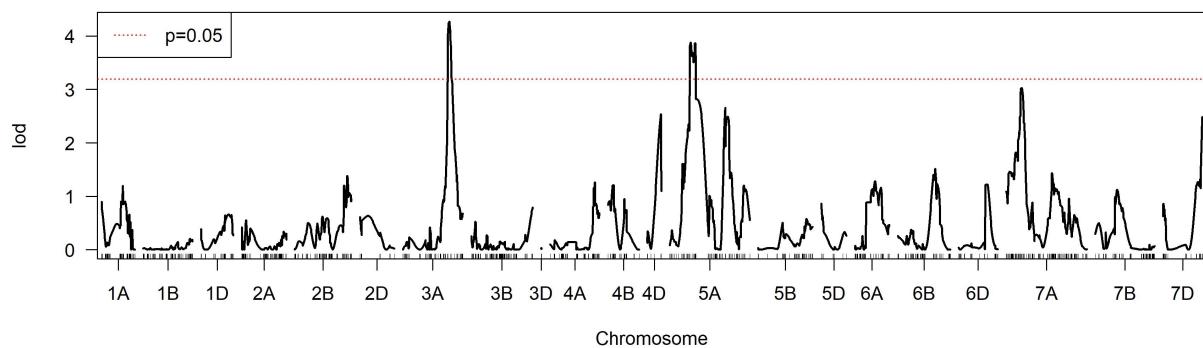


## Fusarium Damaged Kernels Across All Environments

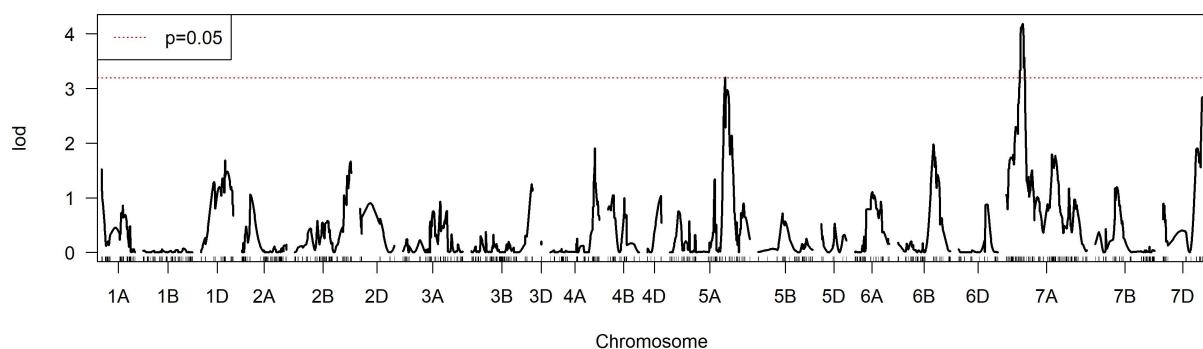
IM for FDK\_ME



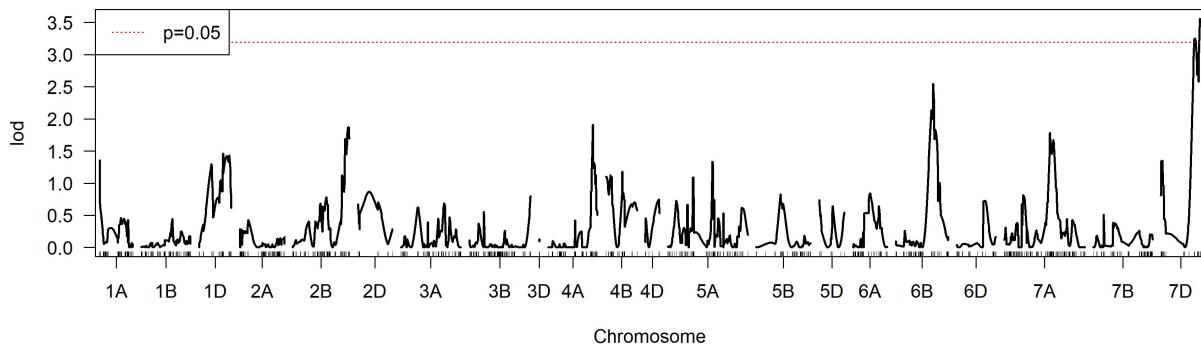
MQM 1 for FDK\_ME



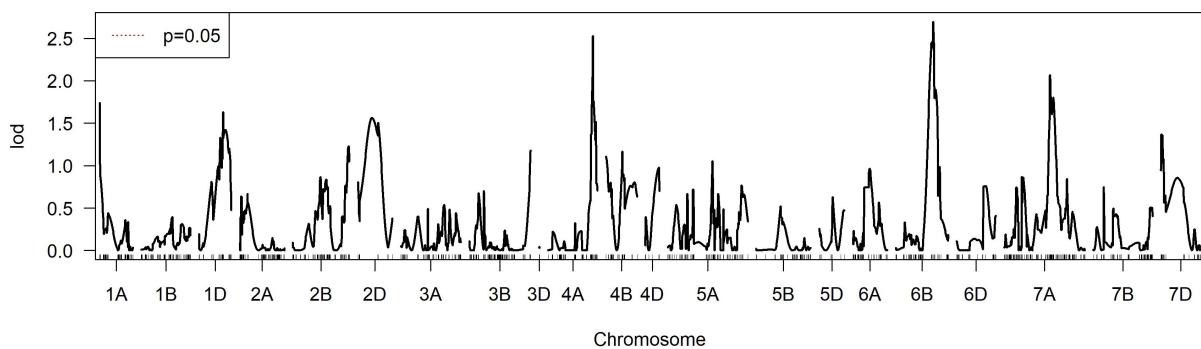
MQM 2 for FDK\_ME



**MQM 3 for FDK\_ME**

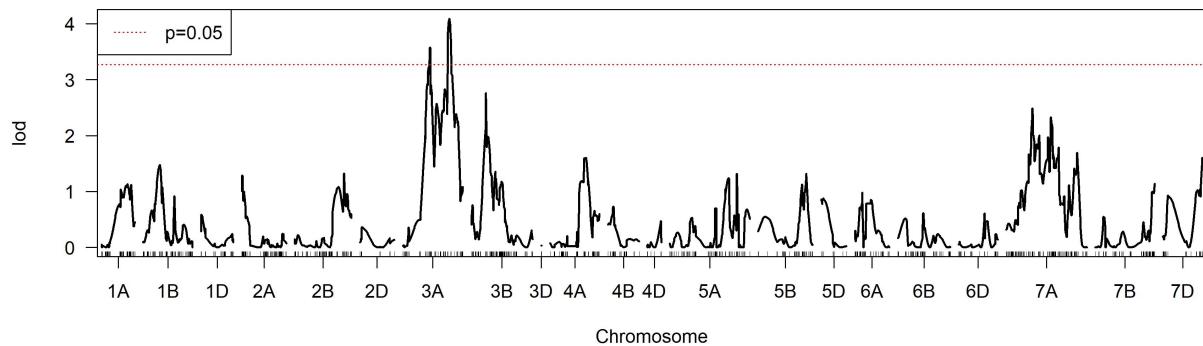


**MQM 4 for FDK\_ME**

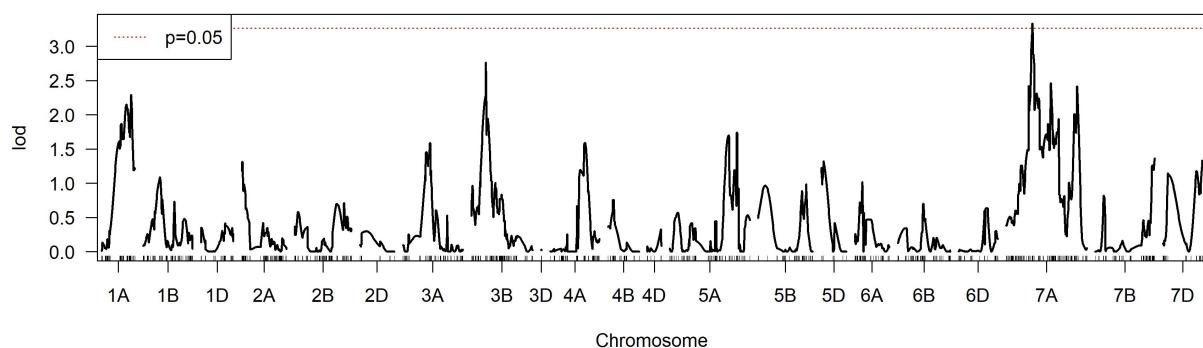


## Fusarium Damaged Kernels in Kinston, NC - 2019

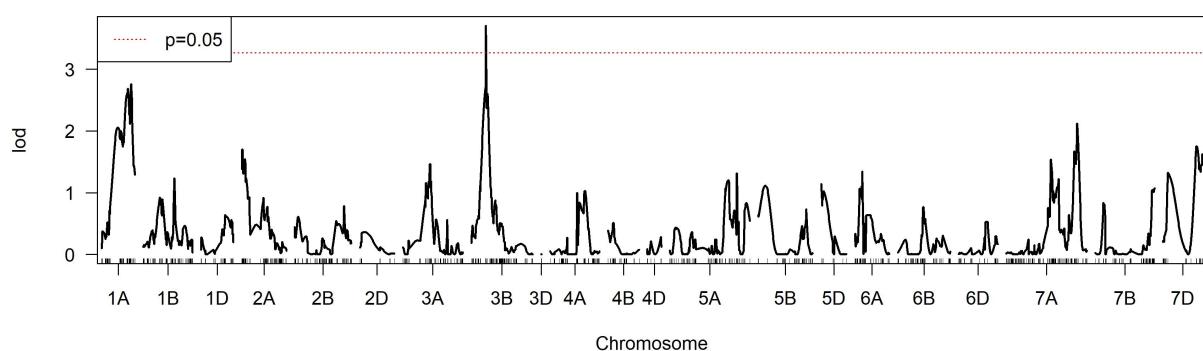
IM for FDK\_KIN19



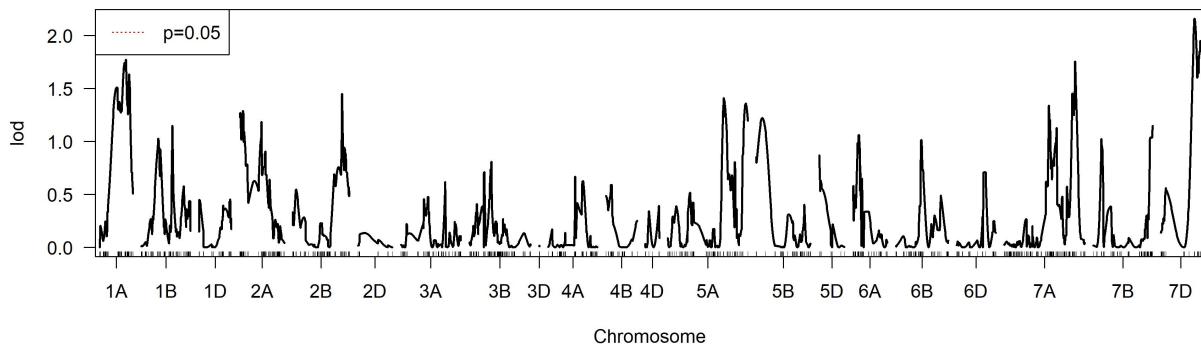
MQM 1 for FDK\_KIN19



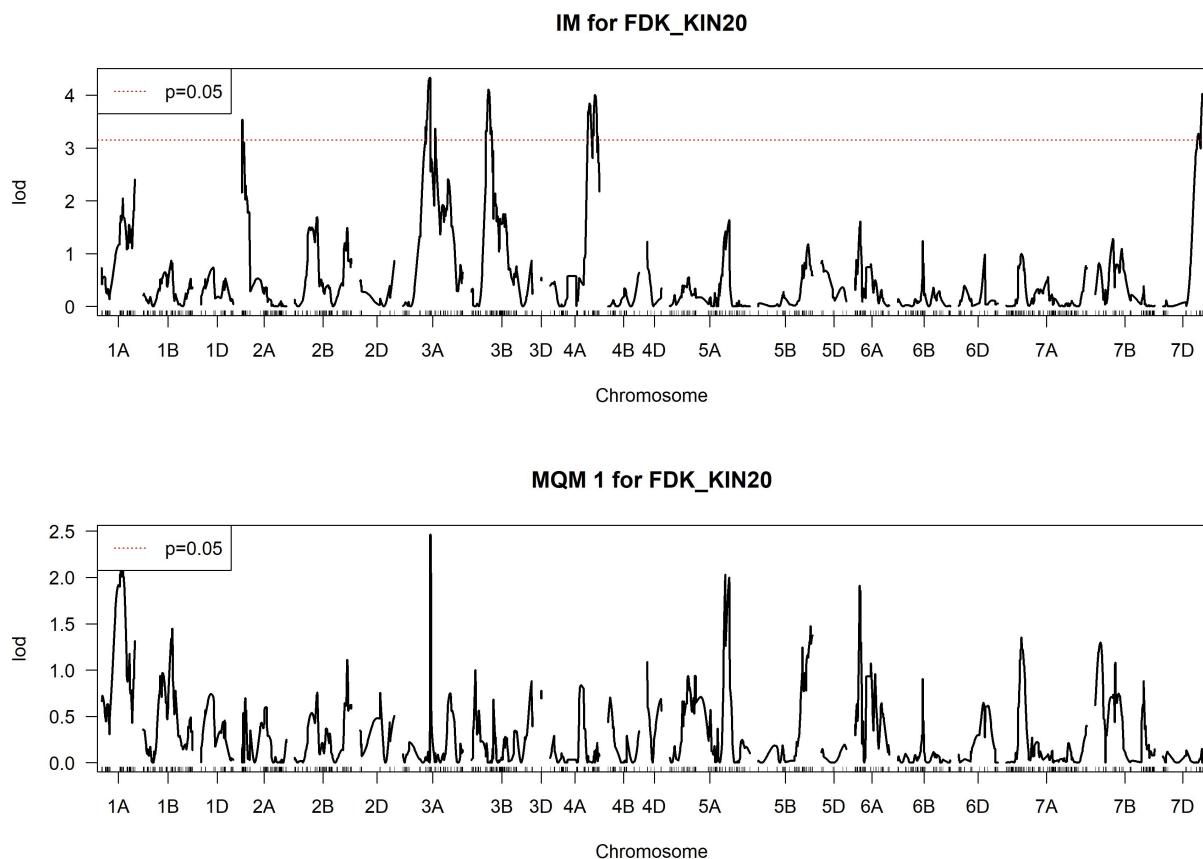
MQM 2 for FDK\_KIN19



**MQM 3 for FDK\_KIN19**

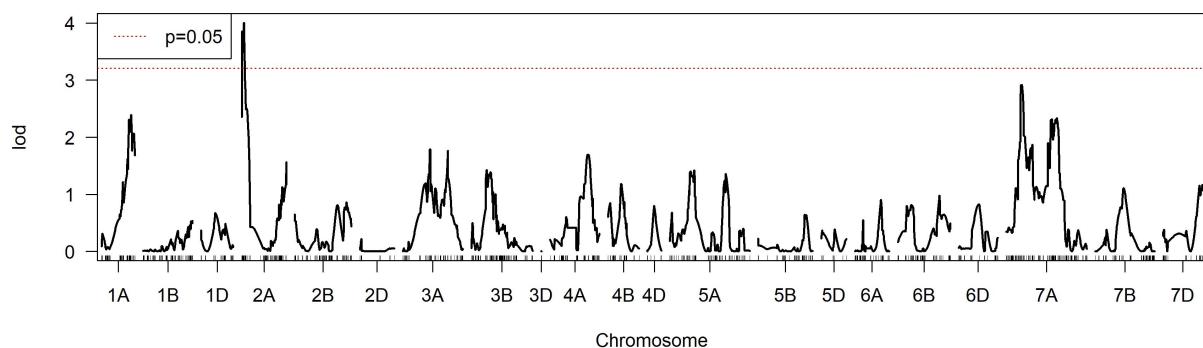


## Fusarium Damaged Kernels in Kinston, NC - 2020

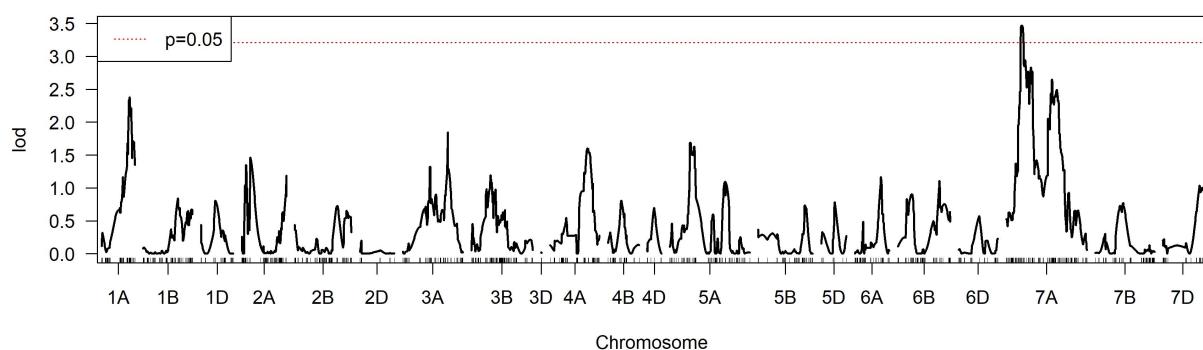


## Fusarium Damaged Kernels in Raleigh, NC - 2019

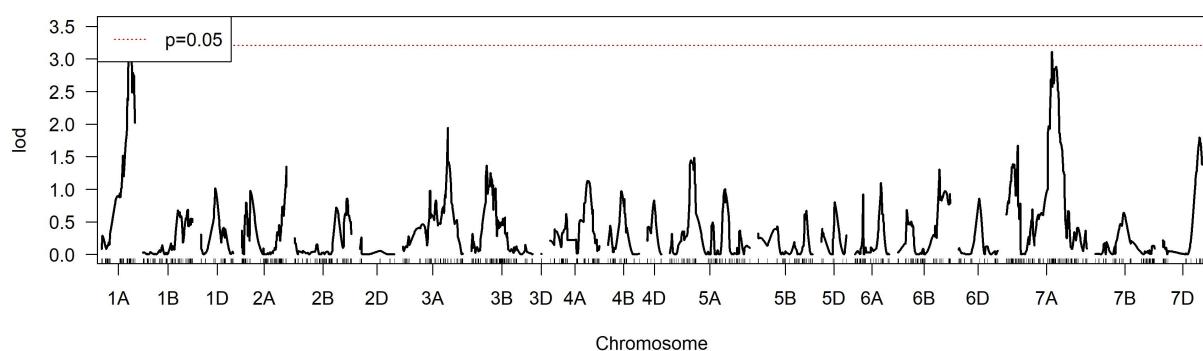
IM for FDK\_RAL19



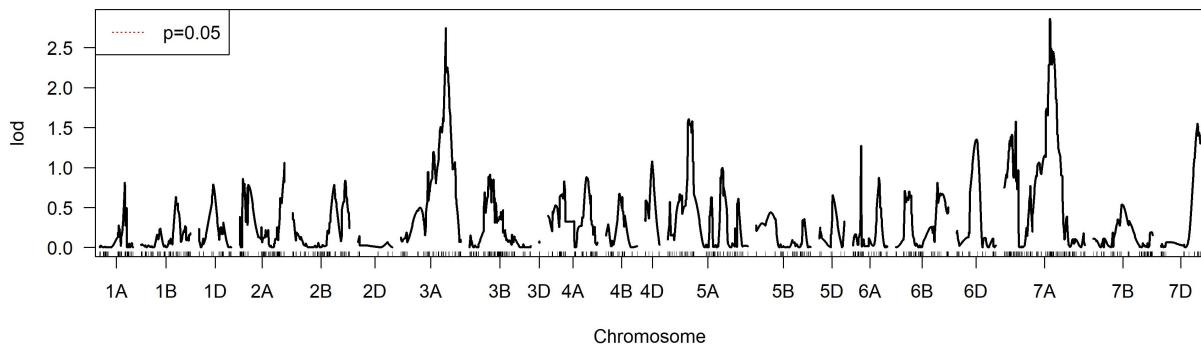
MQM 1 for FDK\_RAL19



MQM 2 for FDK\_RAL19

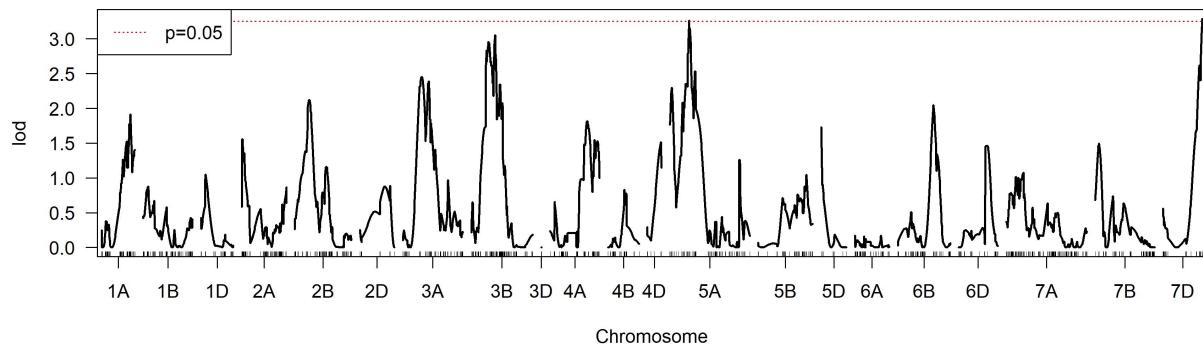


### MQM 3 for FDK\_RAL19

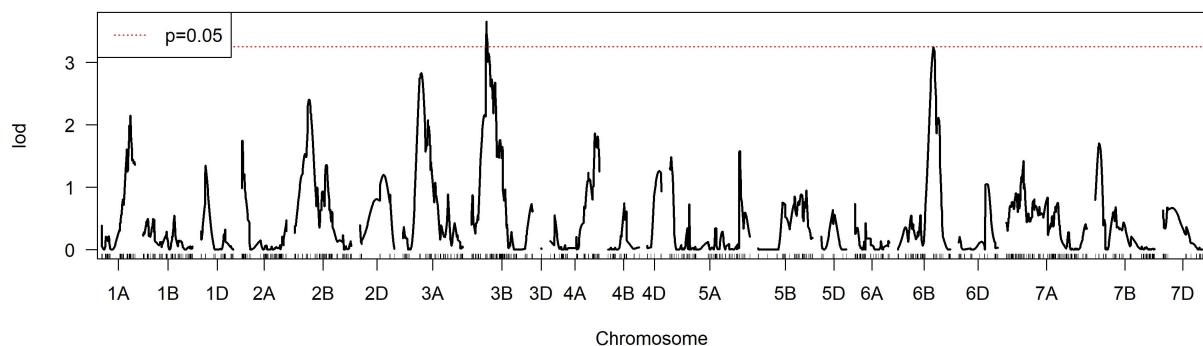


## Fusarium Damaged Kernels in Raleigh, NC - 2020

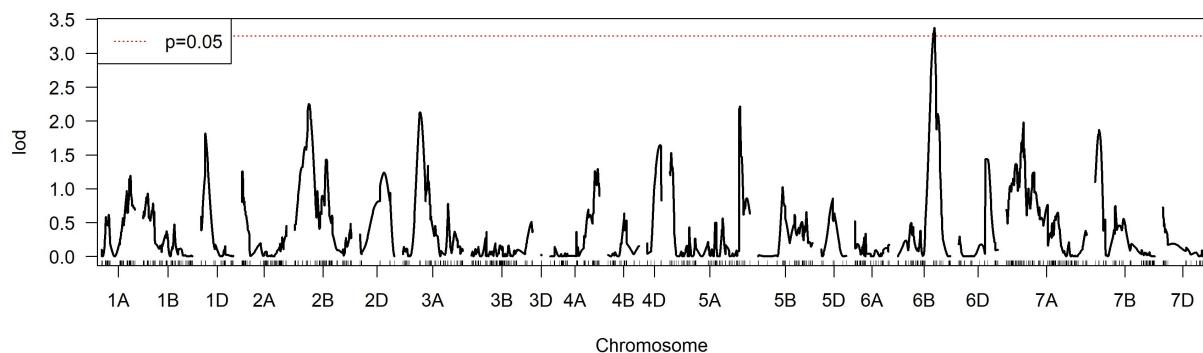
IM for FDK\_RAL20



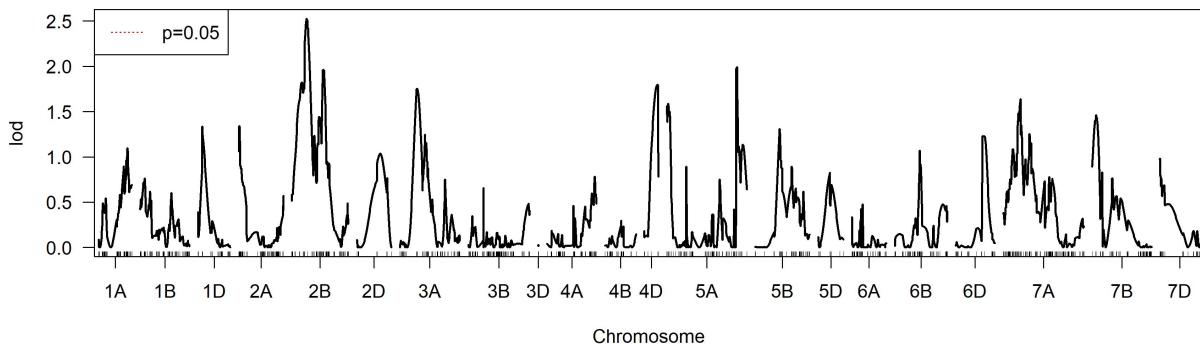
MQM 1 for FDK\_RAL20



MQM 2 for FDK\_RAL20

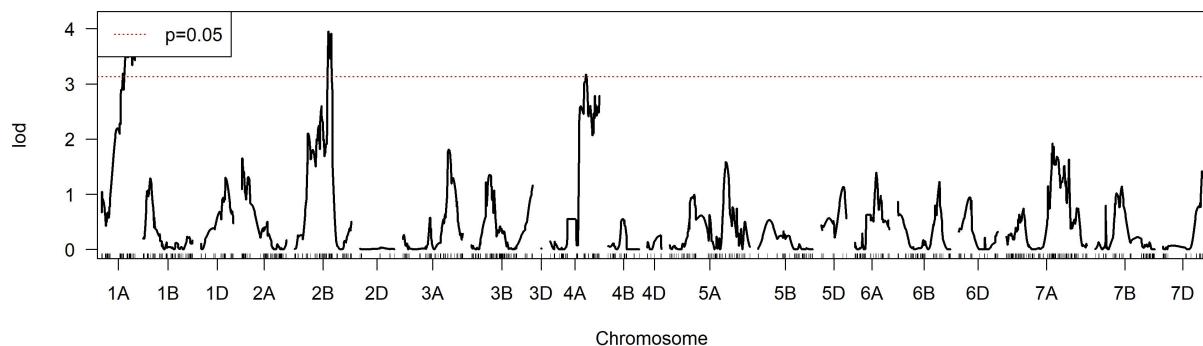


### MQM 3 for FDK\_RAL20

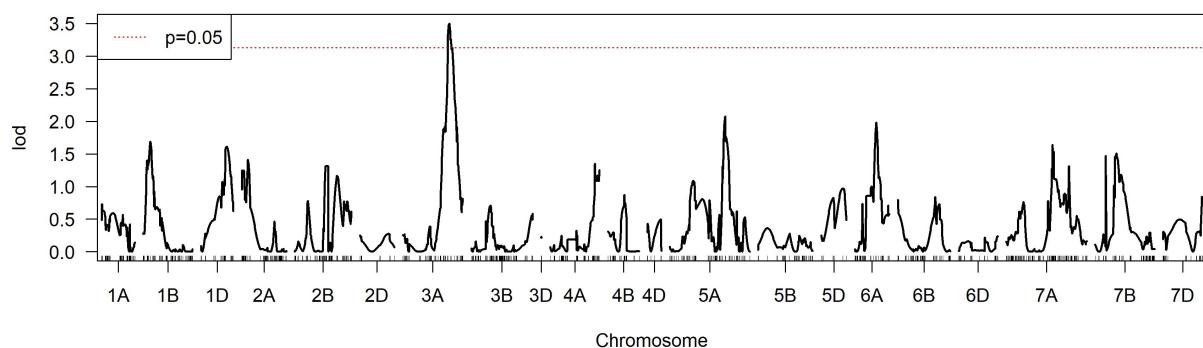


## Fusarium Damaged Kernels in Warsaw, VA - 2019

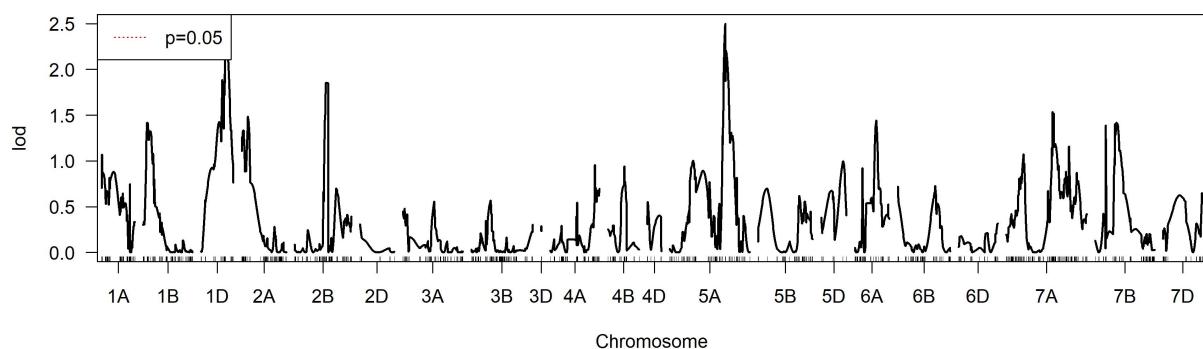
IM for FDK\_WAR19



MQM 1 for FDK\_WAR19

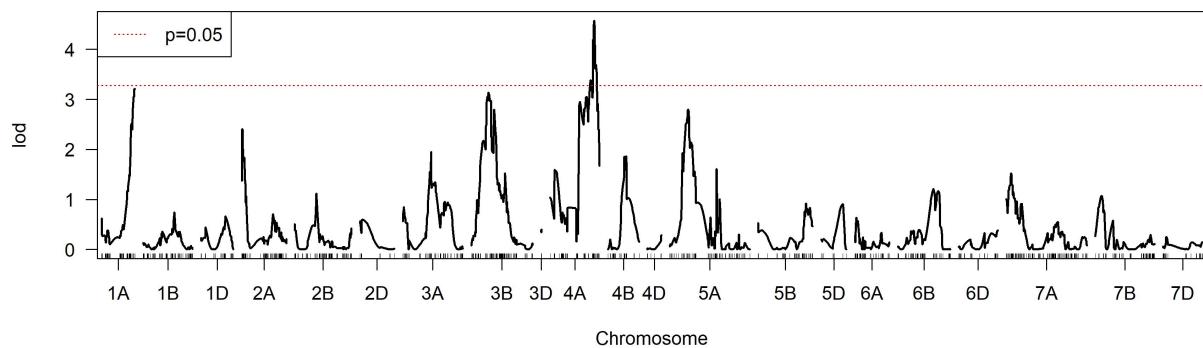


MQM 2 for FDK\_WAR19

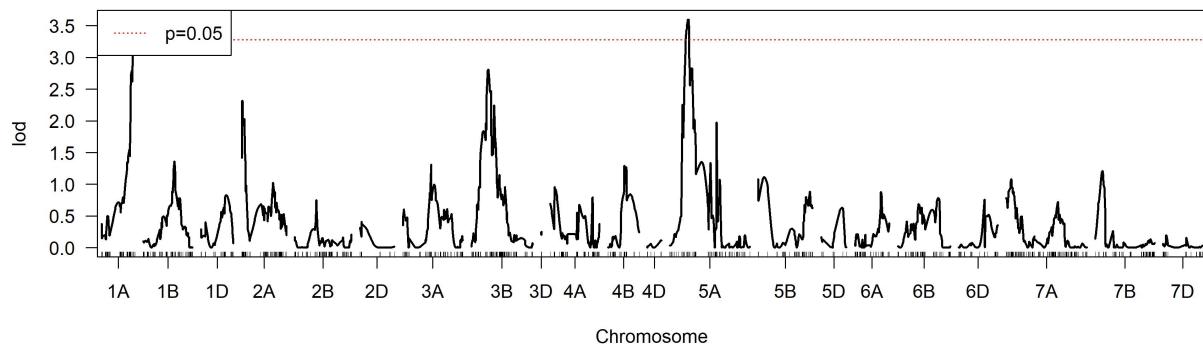


## Fusarium Damaged Kernels in Warsaw, VA - 2020

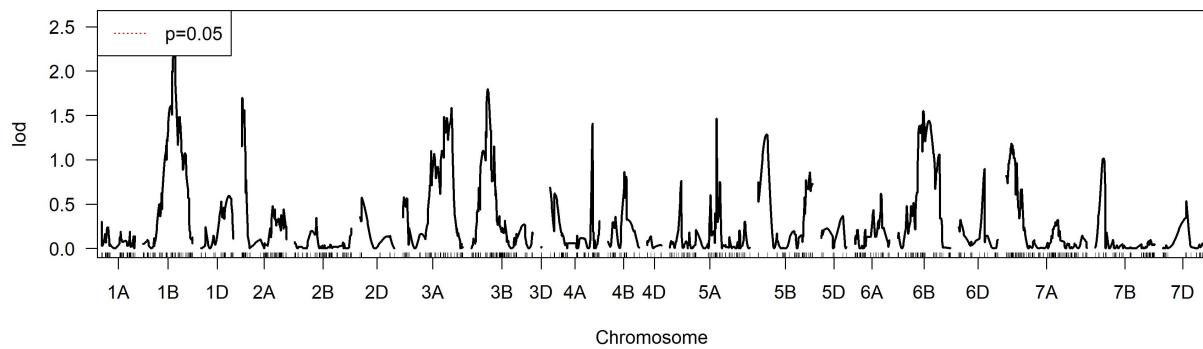
IM for FDK\_WAR20



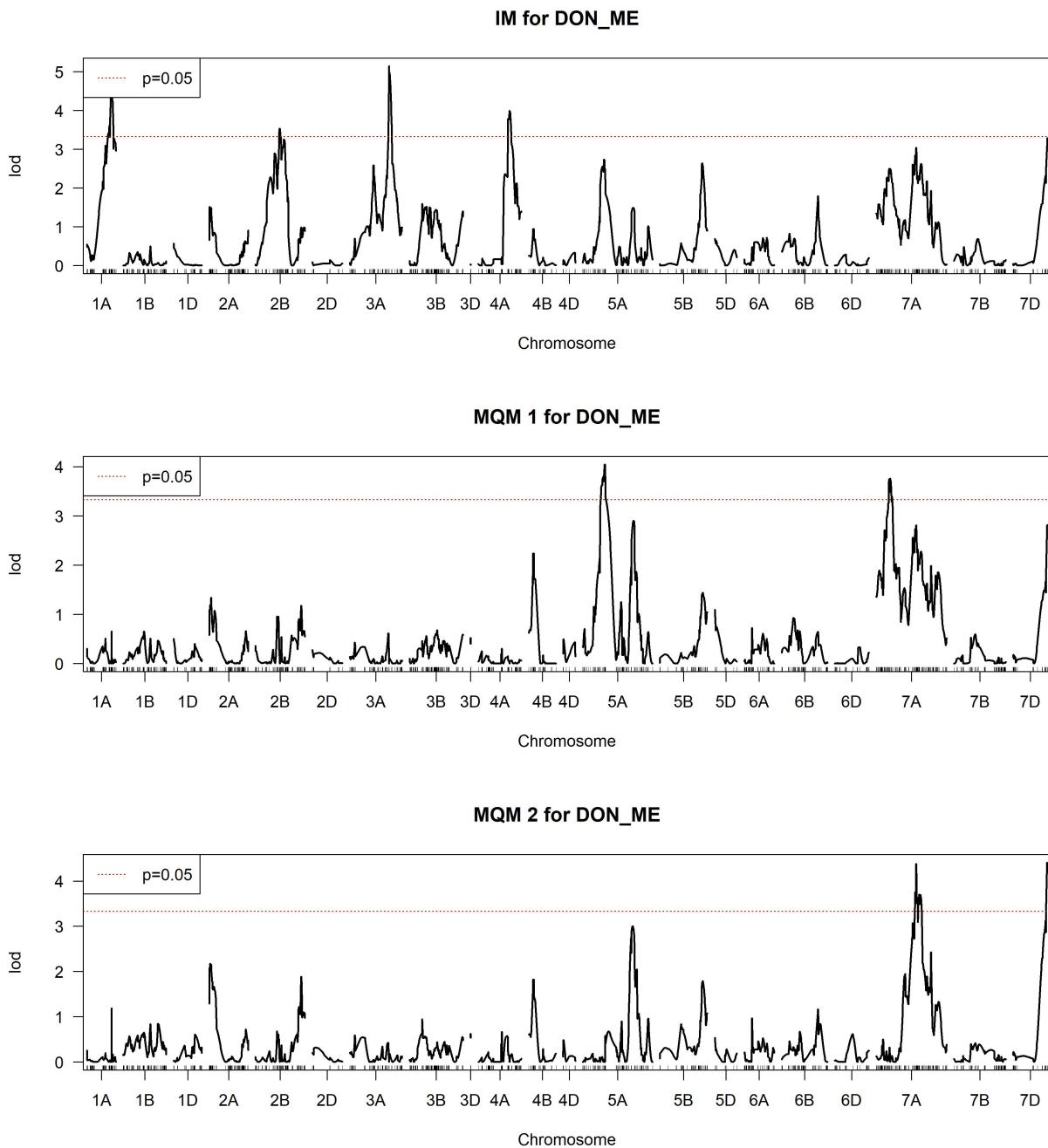
MQM 1 for FDK\_WAR20



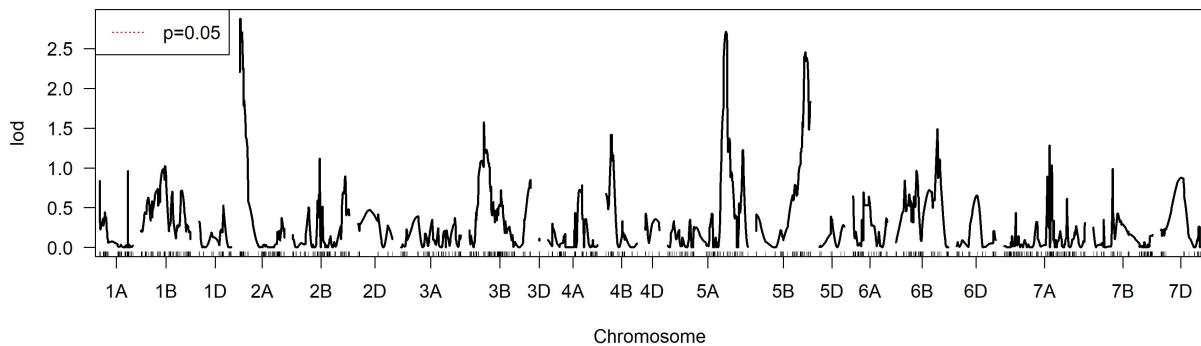
MQM 2 for FDK\_WAR20



## Deoxynivalenol Content Across All Environments

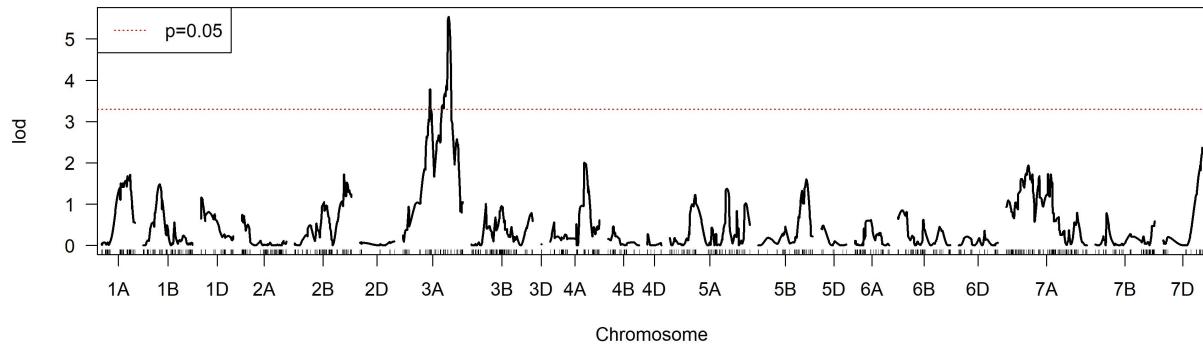


### MQM 3 for DON\_ME

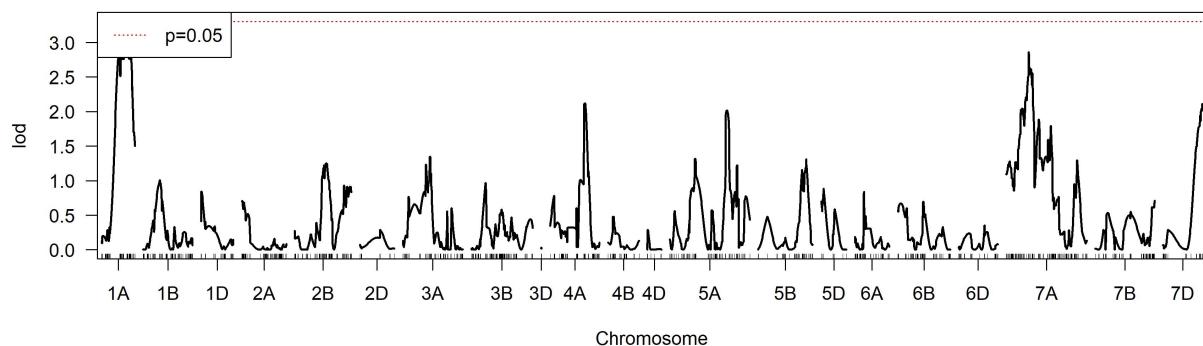


## Deoxynivalenol Content in Kinston, NC - 2019

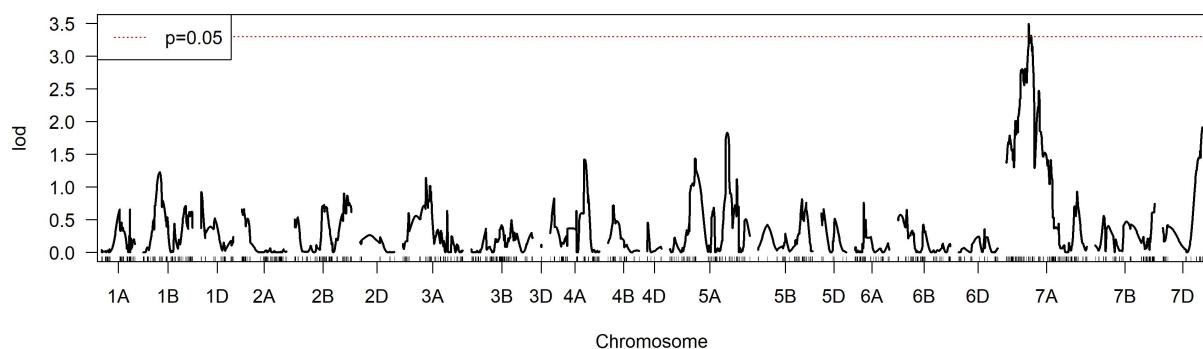
IM for DON\_KIN19



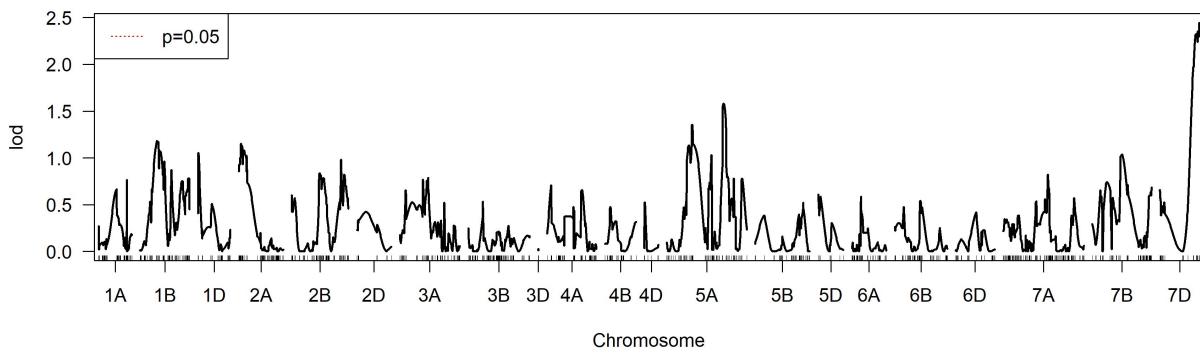
MQM 1 for DON\_KIN19



MQM 2 for DON\_KIN19

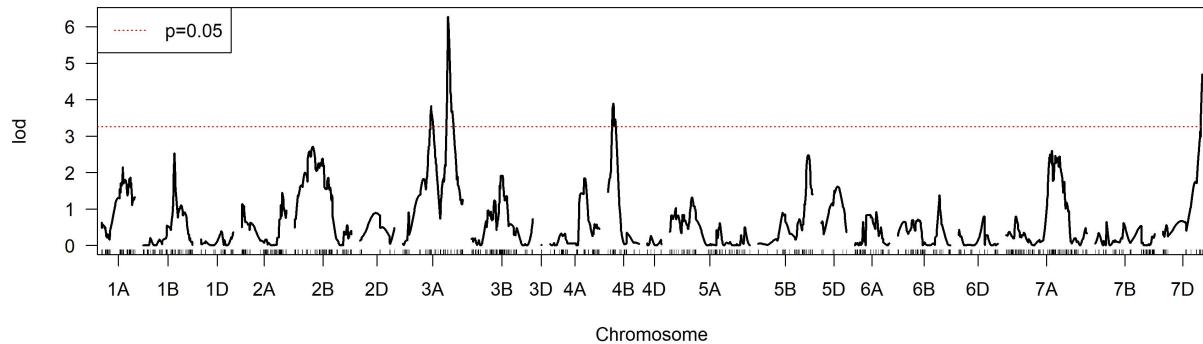


### MQM 3 for DON\_KIN19

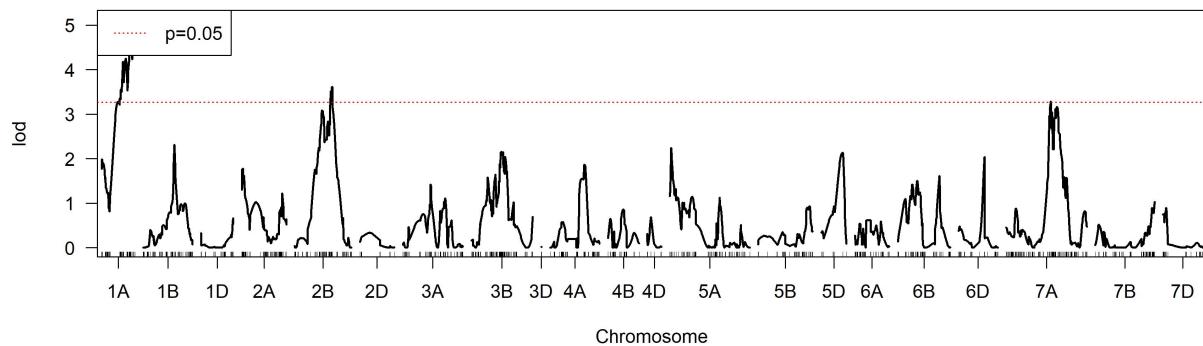


## Deoxynivalenol Content in Kinston, NC - 2020

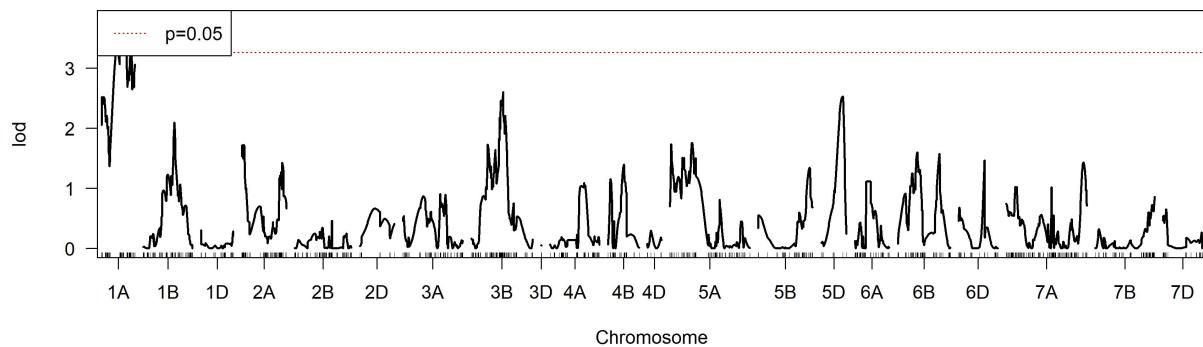
IM for DON\_KIN20



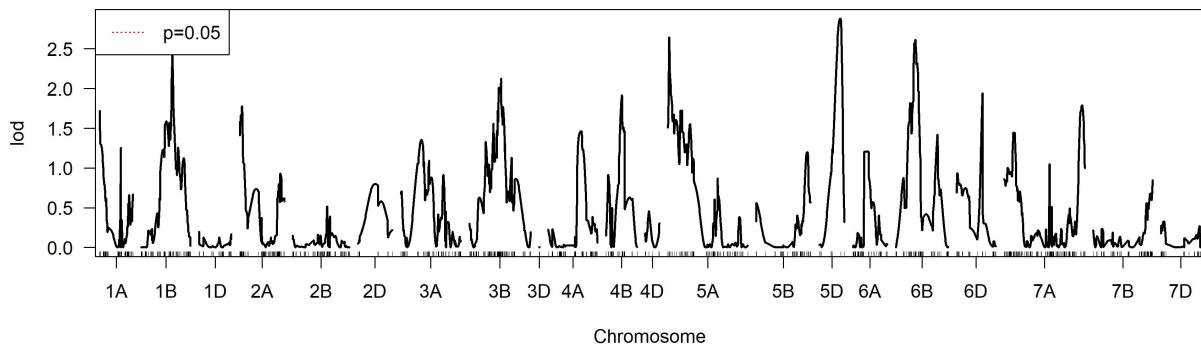
MQM 1 for DON\_KIN20



MQM 2 for DON\_KIN20

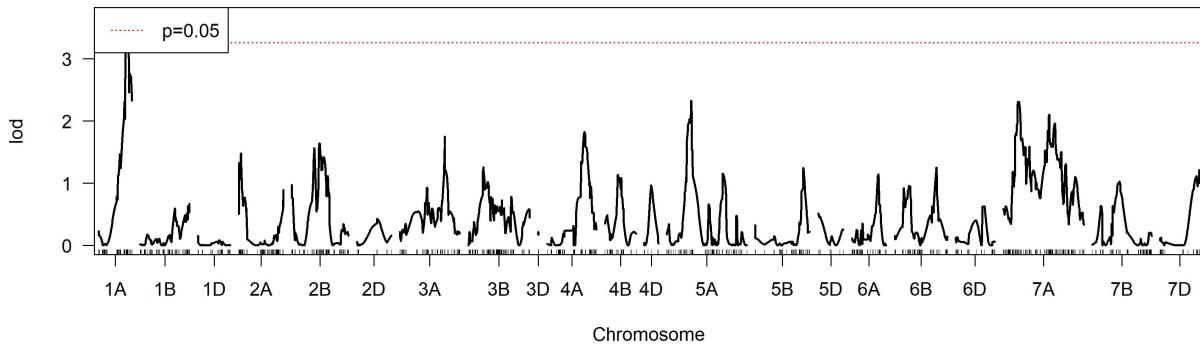


### MQM 3 for DON\_KIN20

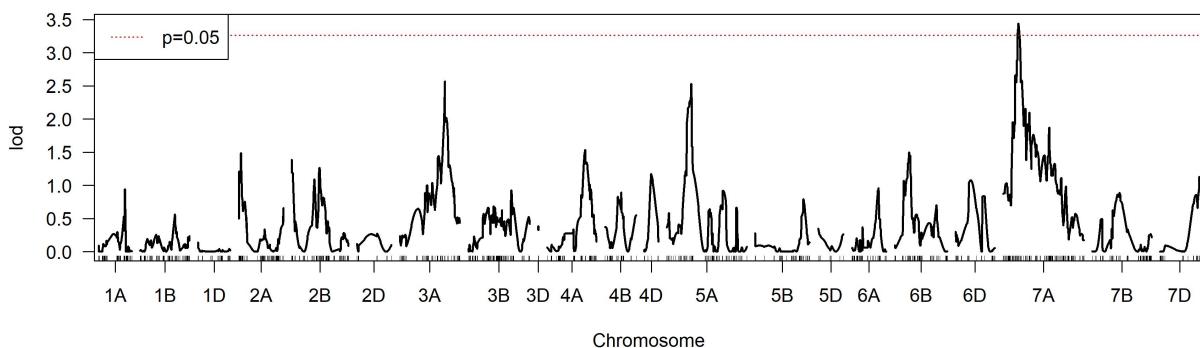


## Deoxynivalenol Content in Raleigh, NC - 2019

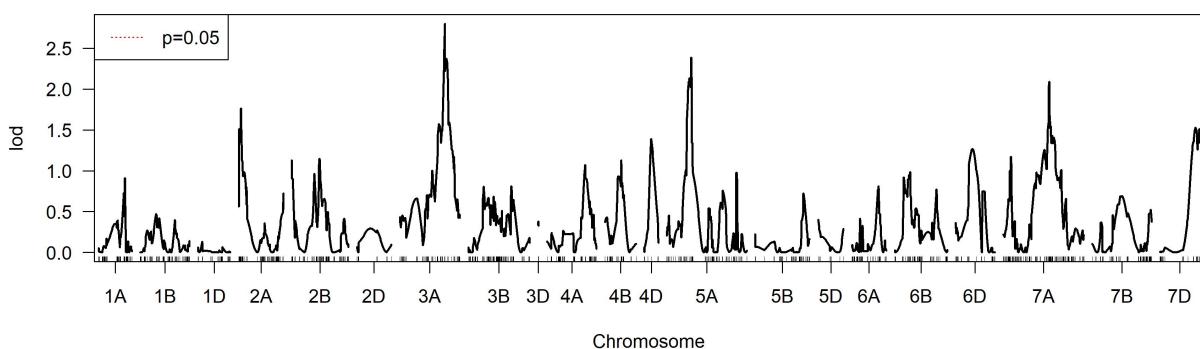
IM for DON\_RAL19



MQM 1 for DON\_RAL19

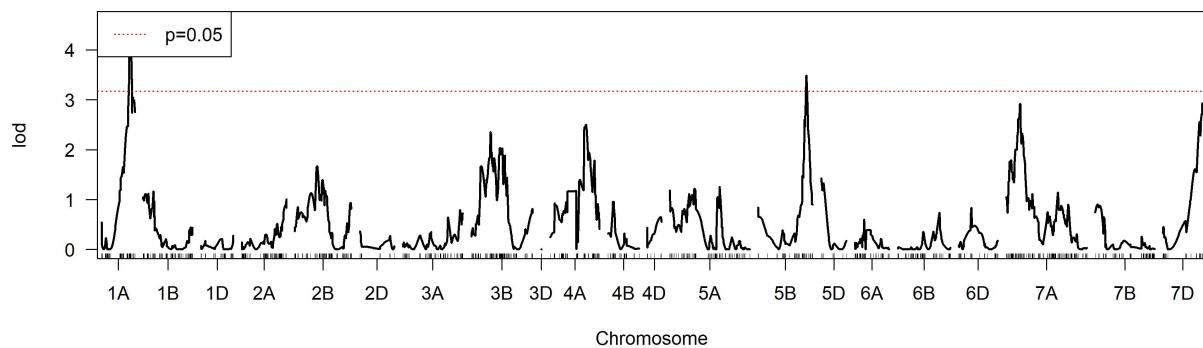


MQM 2 for DON\_RAL19

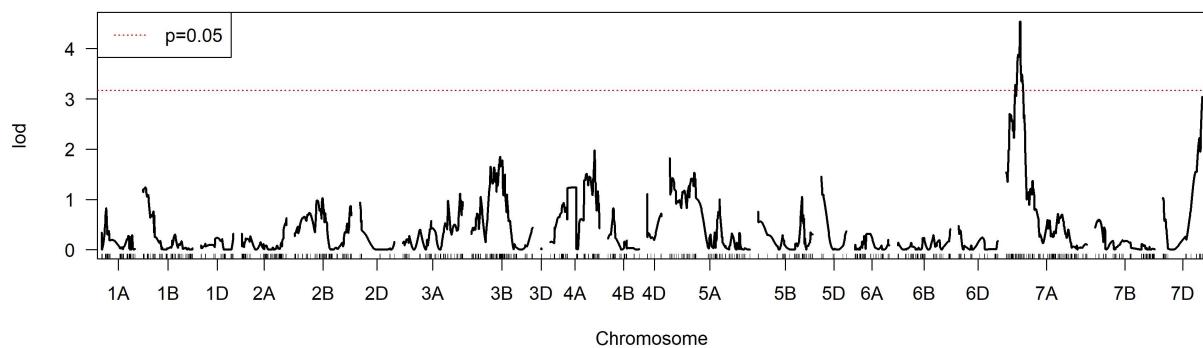


## Deoxynivalenol Content in Raleigh, NC - 2020

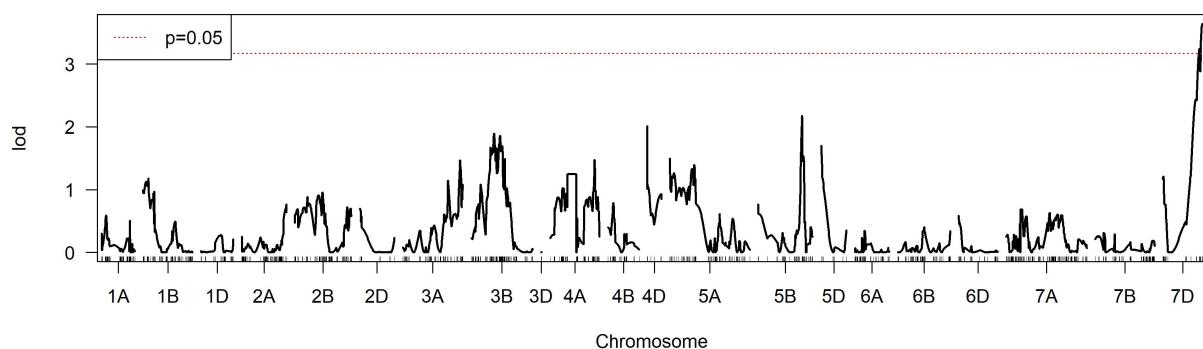
IM for DON\_RAL20



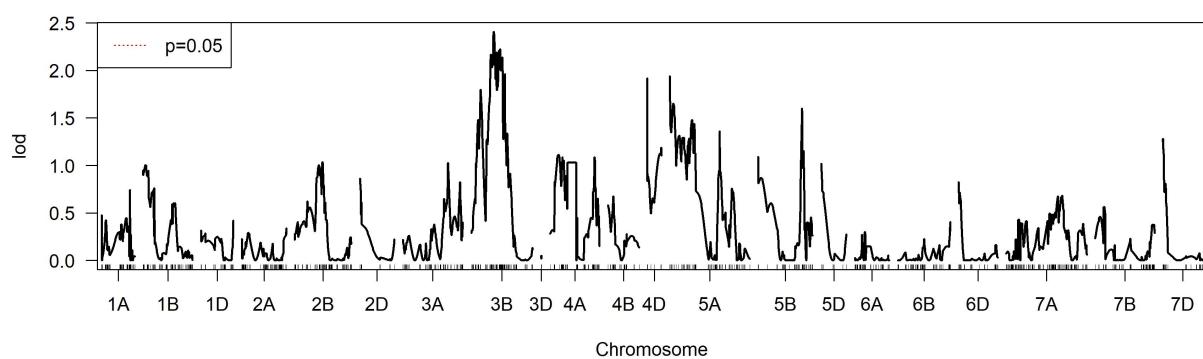
MQM 1 for DON\_RAL20



MQM 2 for DON\_RAL20

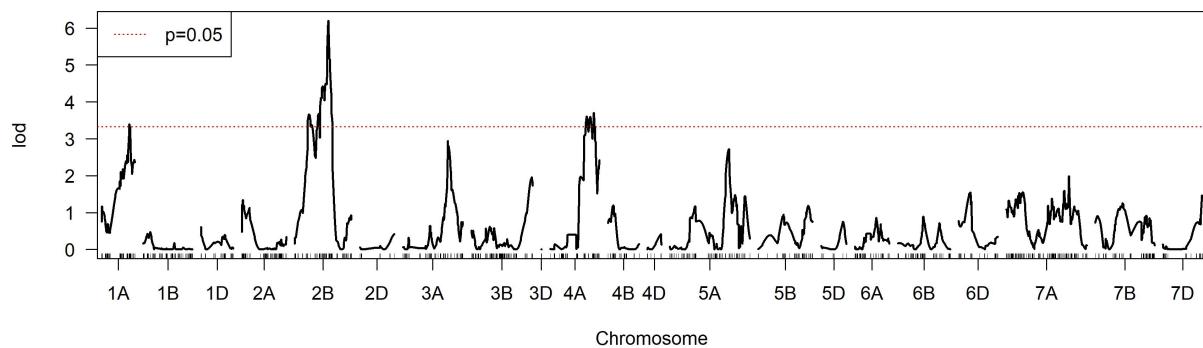


### MQM 3 for DON\_RAL20

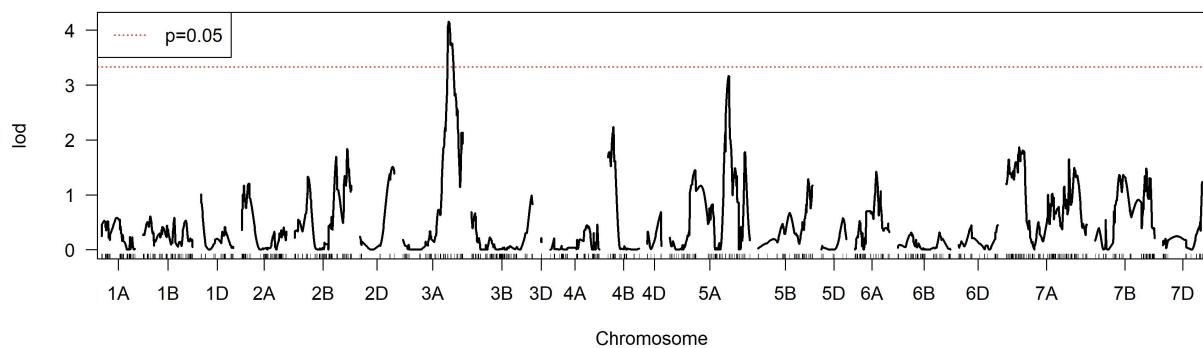


## Deoxynivalenol Content in Warsaw, VA - 2019

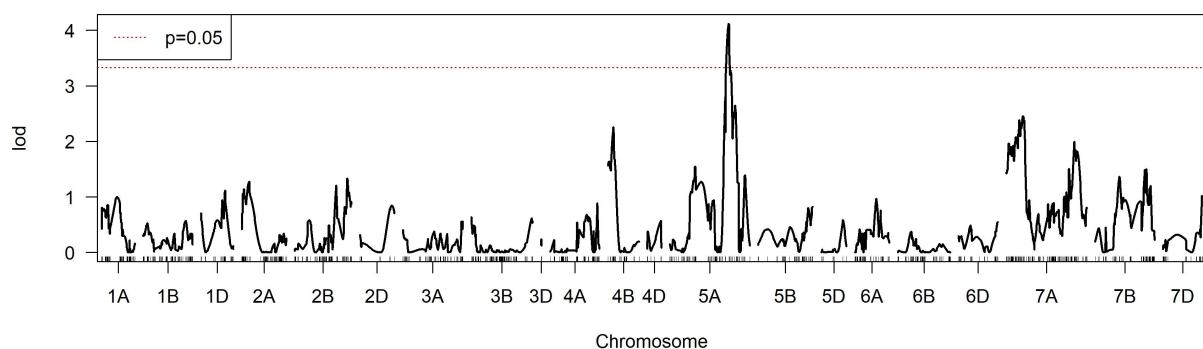
IM for DON\_WAR19



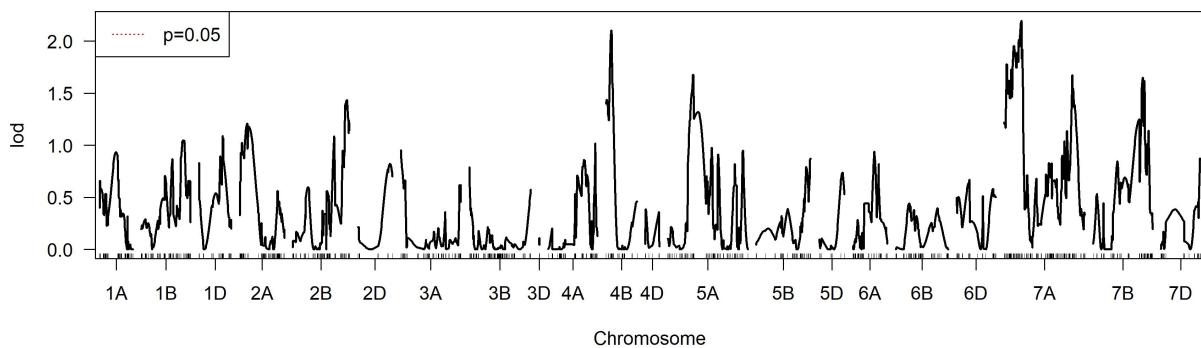
MQM 1 for DON\_WAR19



MQM 2 for DON\_WAR19

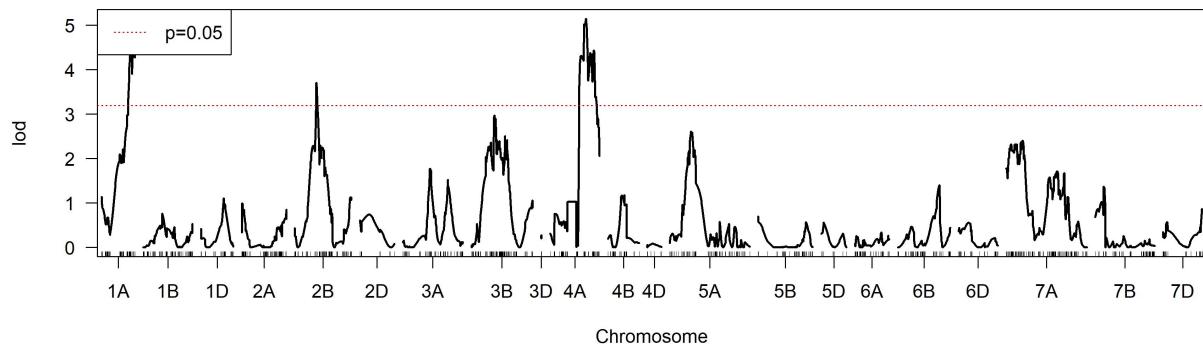


### MQM 3 for DON\_WAR19

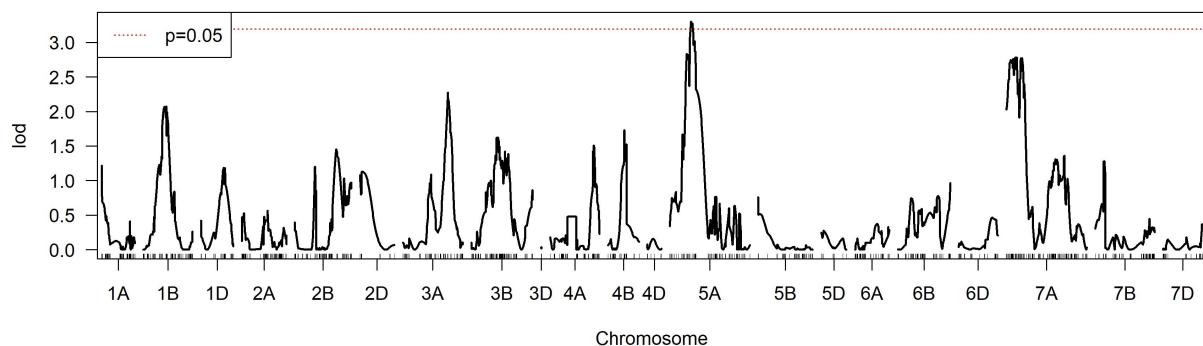


## Deoxynivalenol Content in Warsaw, VA - 2020

IM for DON\_WAR20



MQM 1 for DON\_WAR20



MQM 2 for DON\_WAR20

