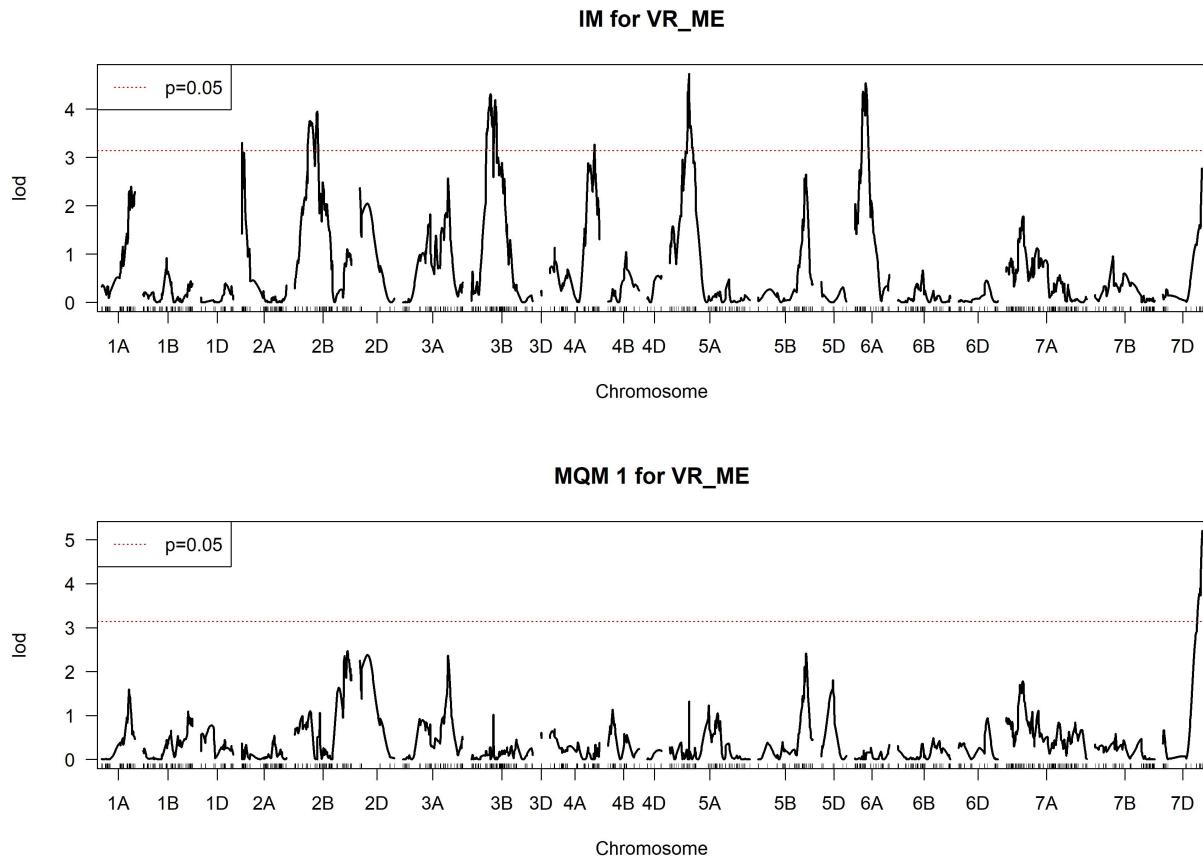


Supplemental Information 1

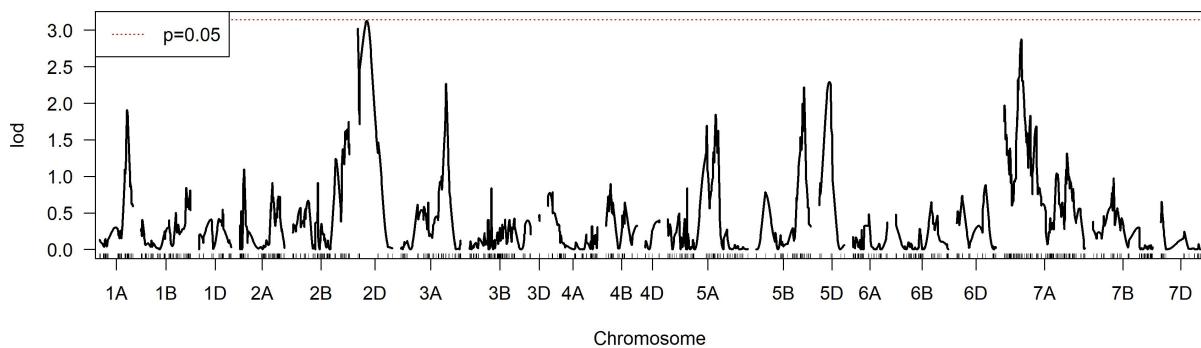
Description

Interval mapping (IM) and multiple-quantitative-trait-locus mapping (MQM) scans for heading date (HD) and plant height (PH), Fusarium head blight (FHB) visual ratings (VR), Fusarium damaged kernels (FDK), and deoxynivalenol (DON) content quantitative trait loci (QTL). Presented are the results of scans performed without heading date and plant height marker covariates. 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 significance threshold at alpha equals 0.05. 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.

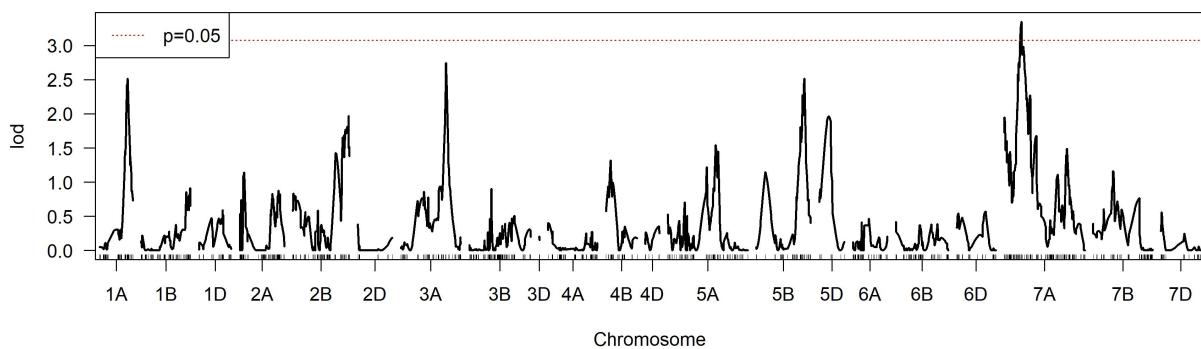
Visual Ratings Across All Environments



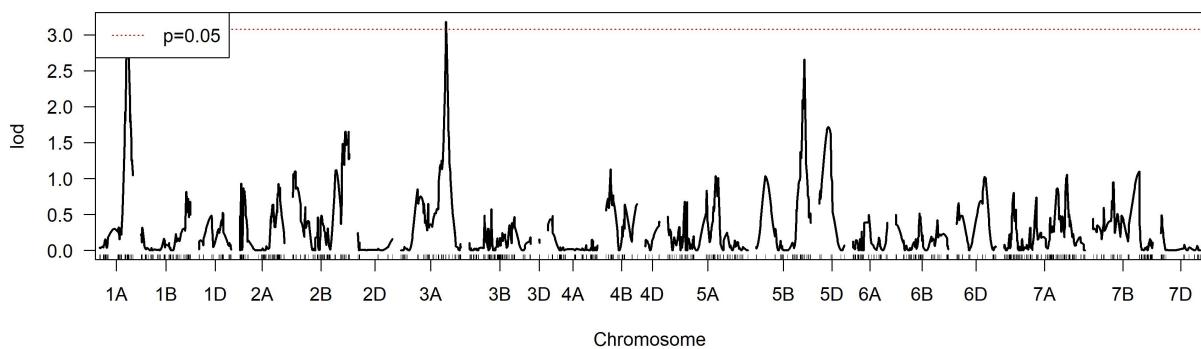
MQM 2 for VR_ME



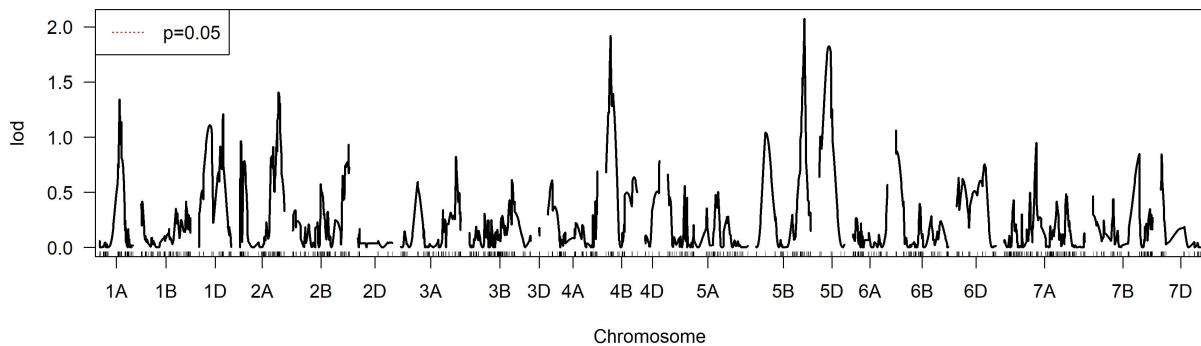
MQM 3 for VR_ME



MQM 4 for VR_ME

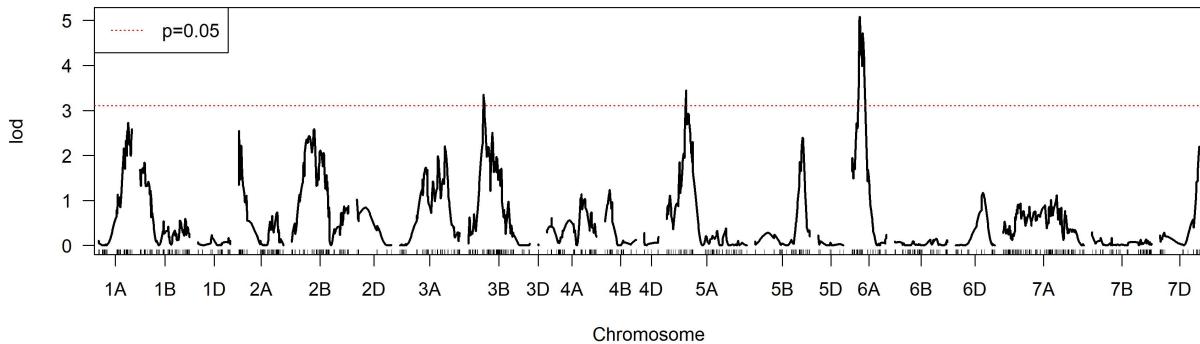


MQM 5 for VR_ME

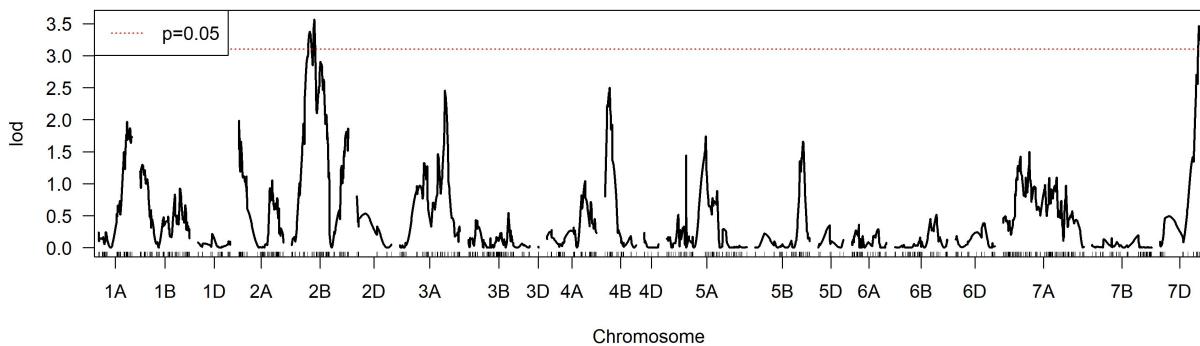


Visual Ratings in Kinston, NC - 2019

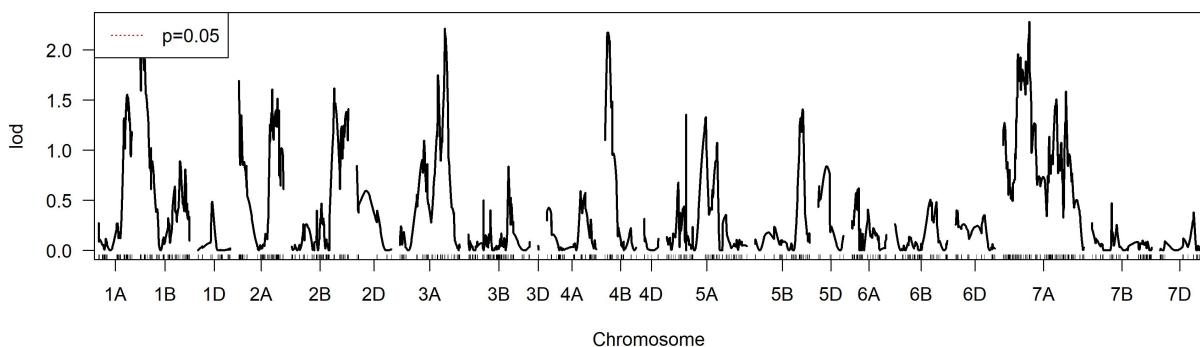
IM for VR_KIN19



MQM 1 for VR_KIN19

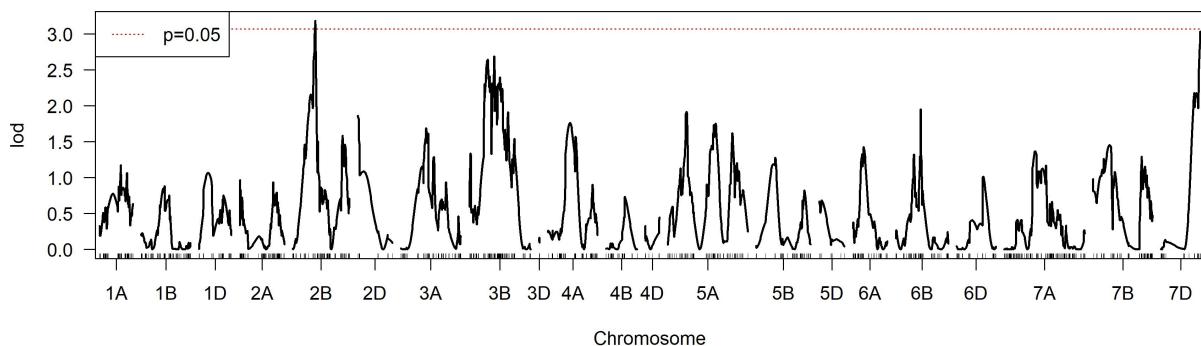


MQM 2 for VR_KIN19

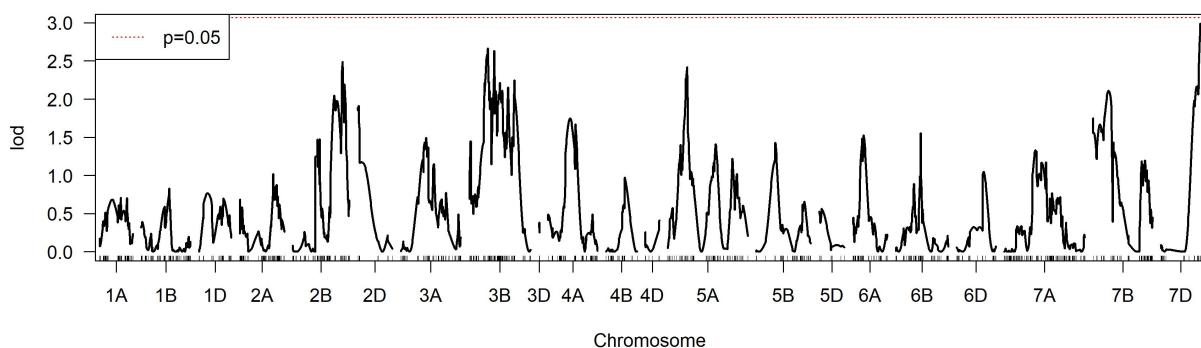


Visual Ratings in Kinston, NC - 2020

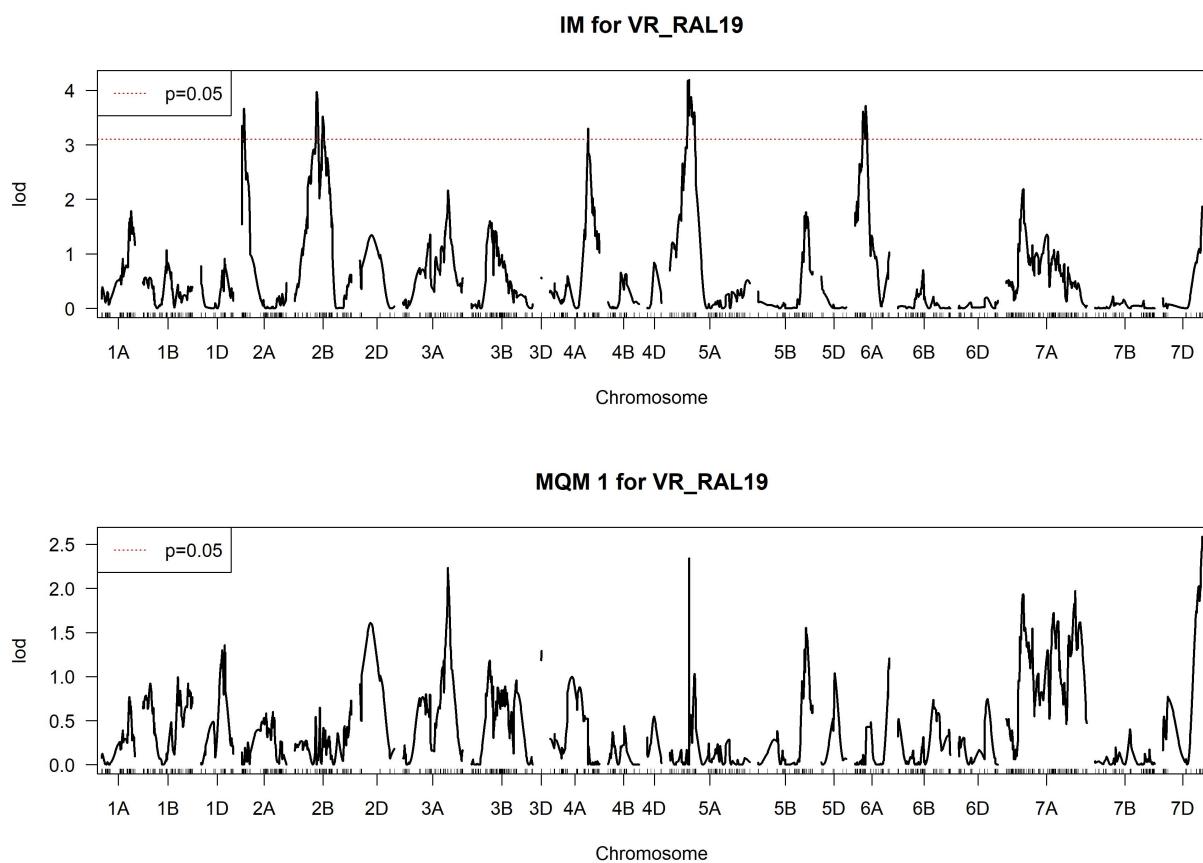
IM for VR_KIN20



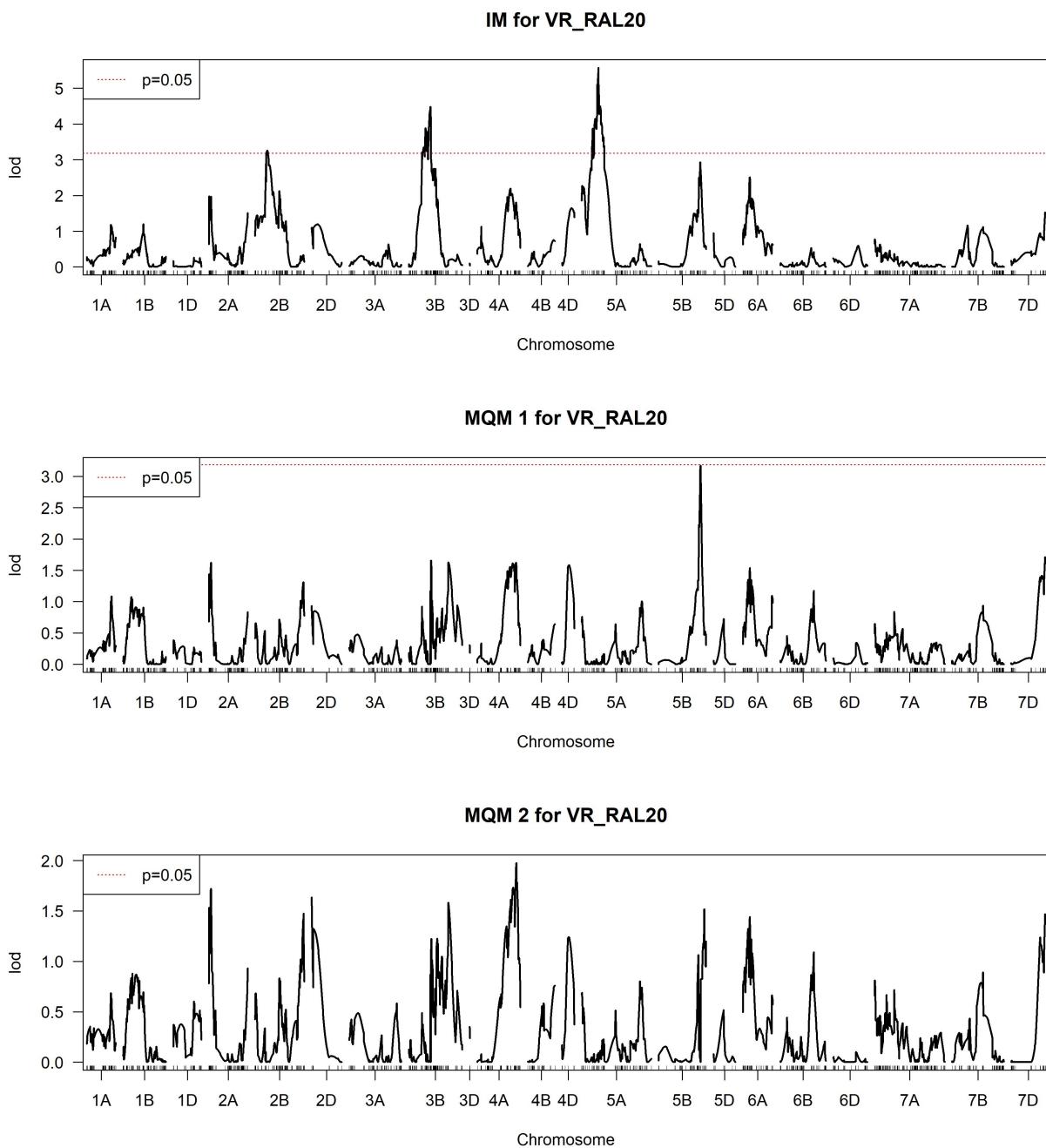
MQM 1 for VR_KIN20



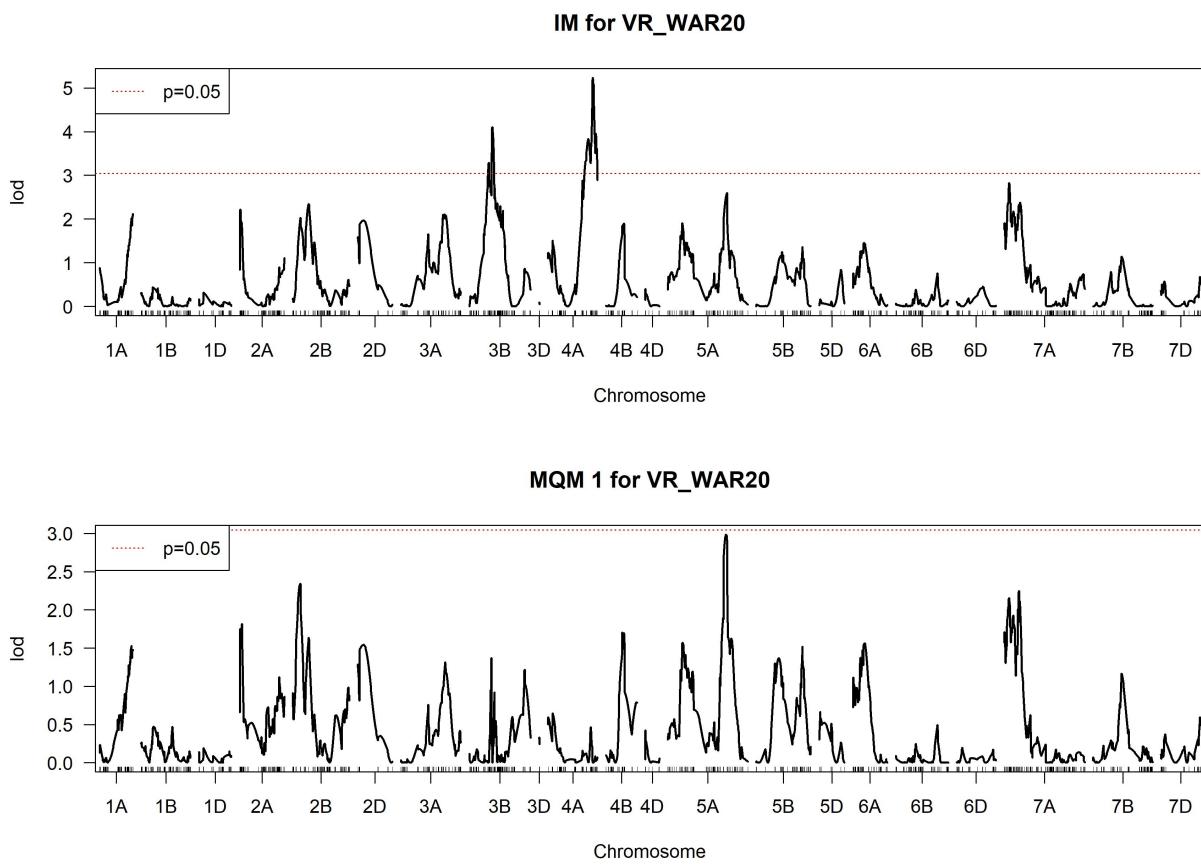
Visual Ratings in Raleigh, NC - 2019



Visual Ratings in Raleigh, NC - 2020

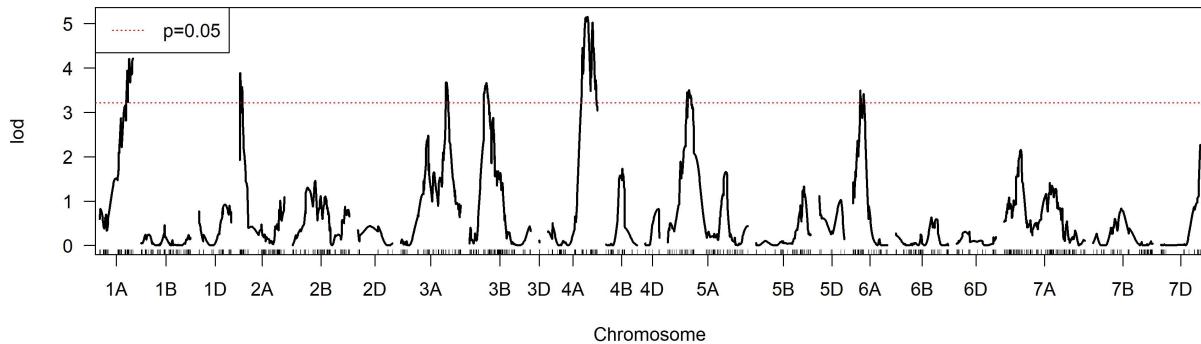


Visual Ratings in Warsaw, VA - 2020

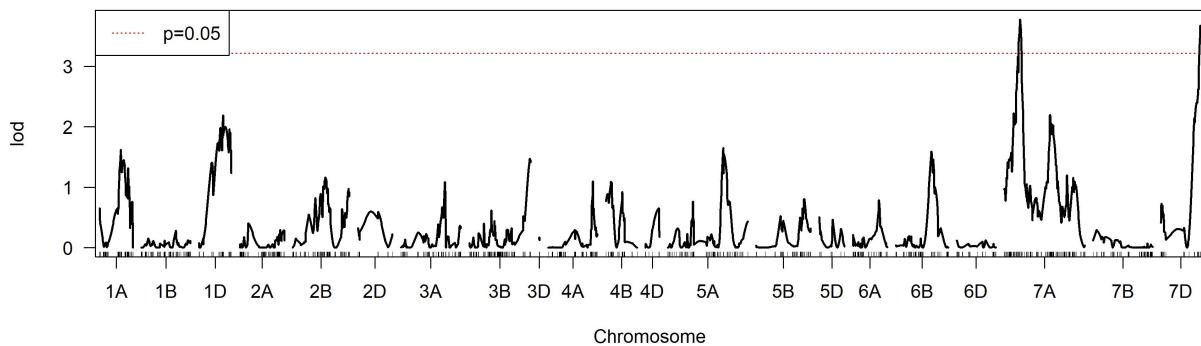


Fusarium Damaged Kernels Across All Environments

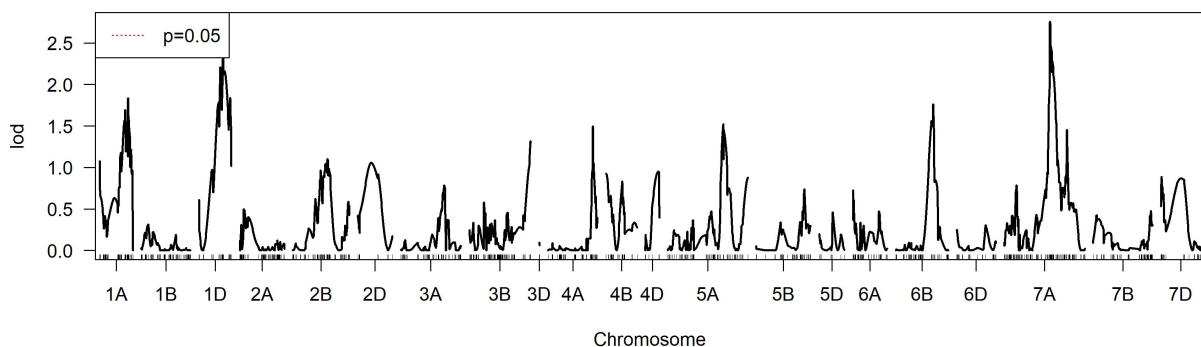
IM for FDK_ME



MQM 1 for FDK_ME

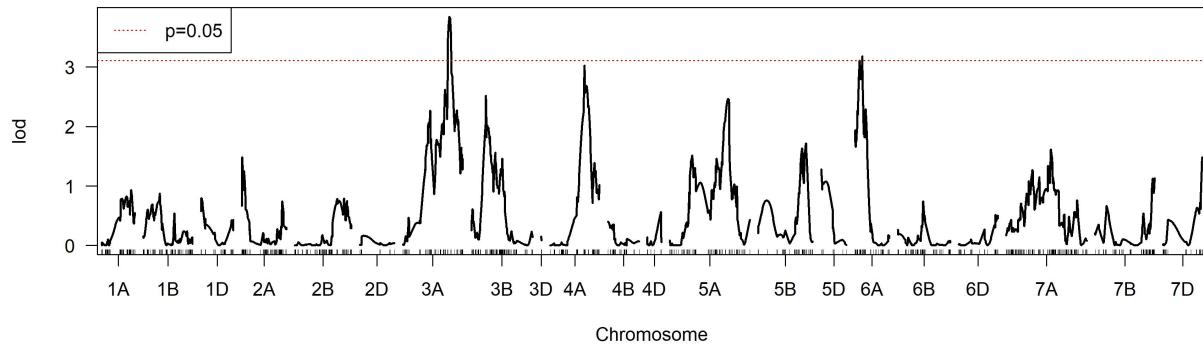


MQM 2 for FDK_ME

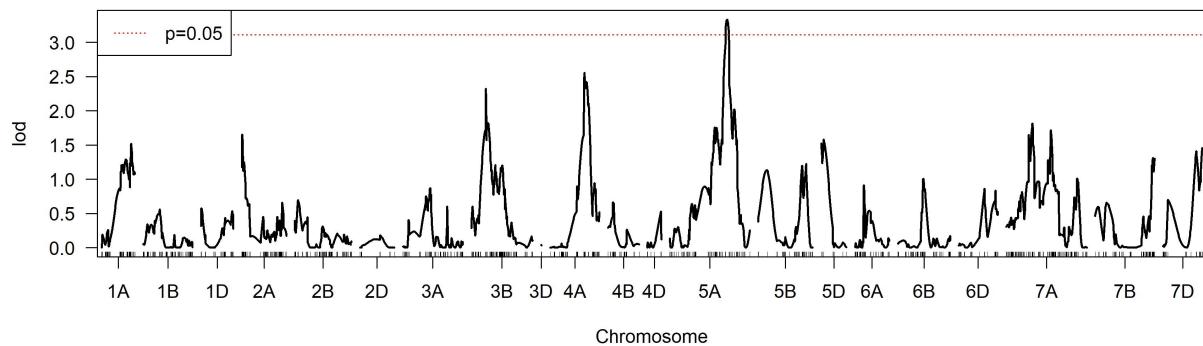


Fusarium Damaged Kernels in Kinston, NC - 2019

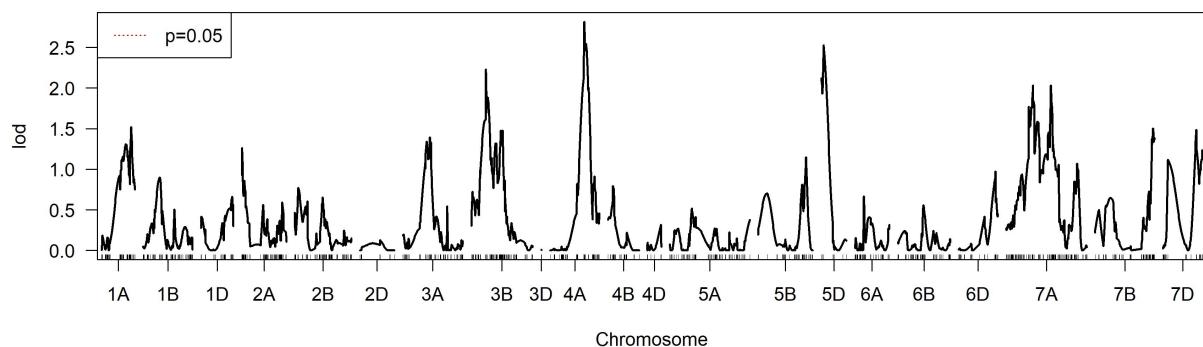
IM for FDK_KIN19



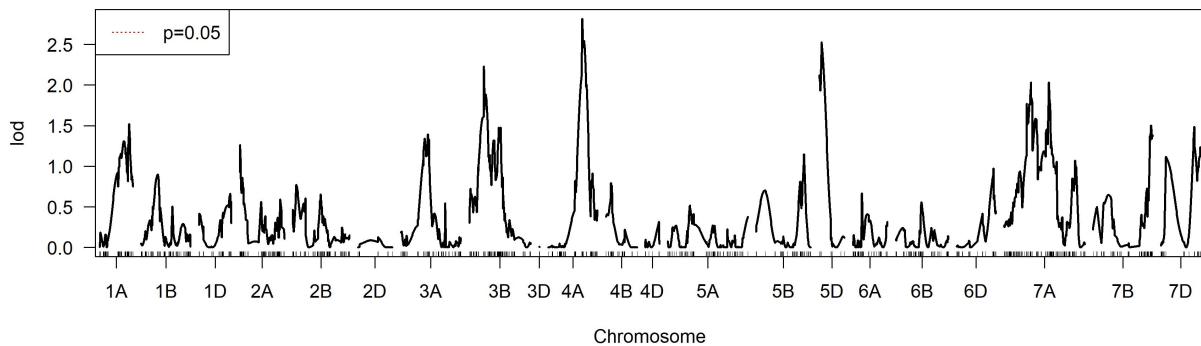
MQM 1 for FDK_KIN19



MQM 2 for FDK_KIN19

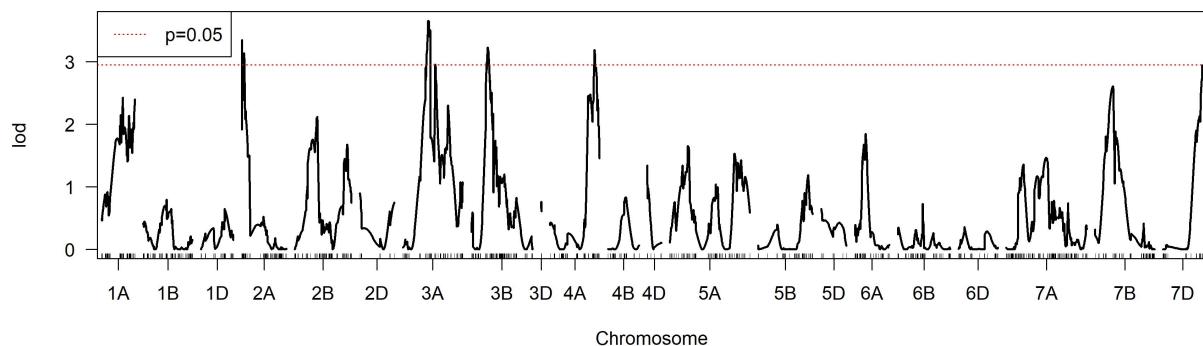


MQM 3 for FDK_KIN19

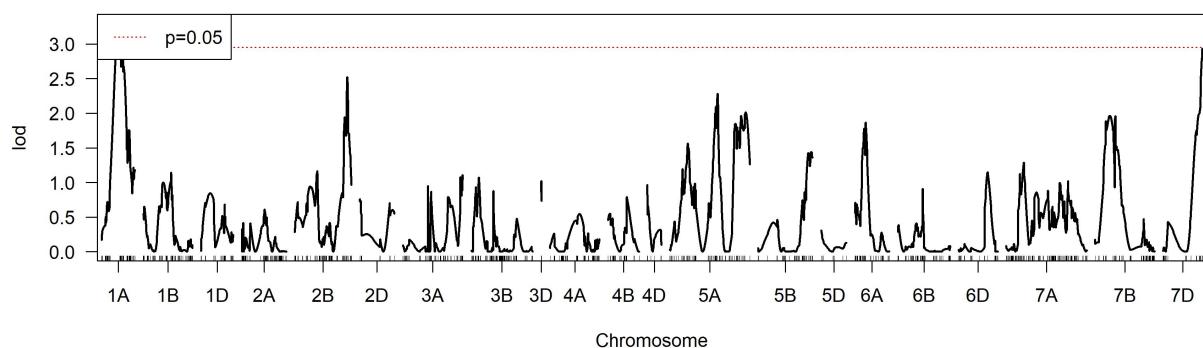


Fusarium Damaged Kernels in Kinston, NC - 2020

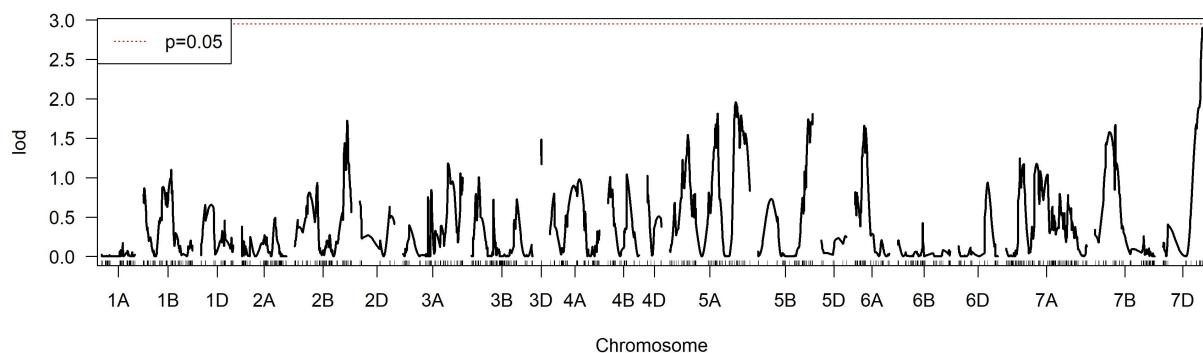
IM for FDK_KIN20



MQM 1 for FDK_KIN20

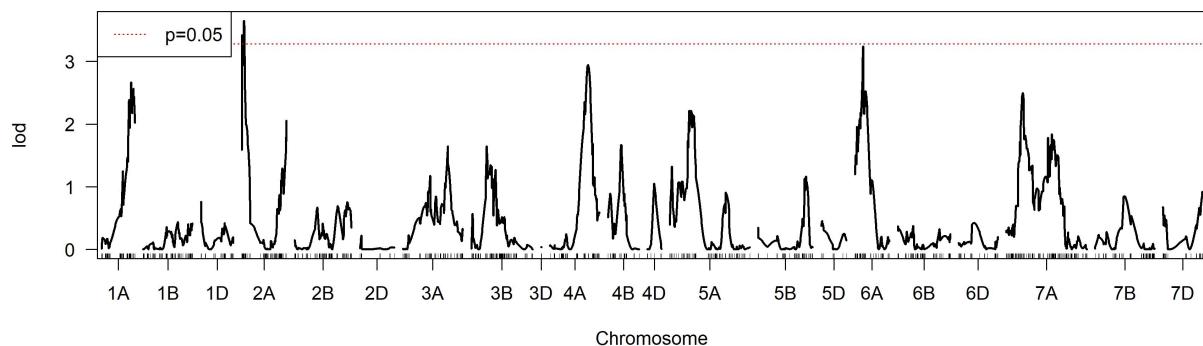


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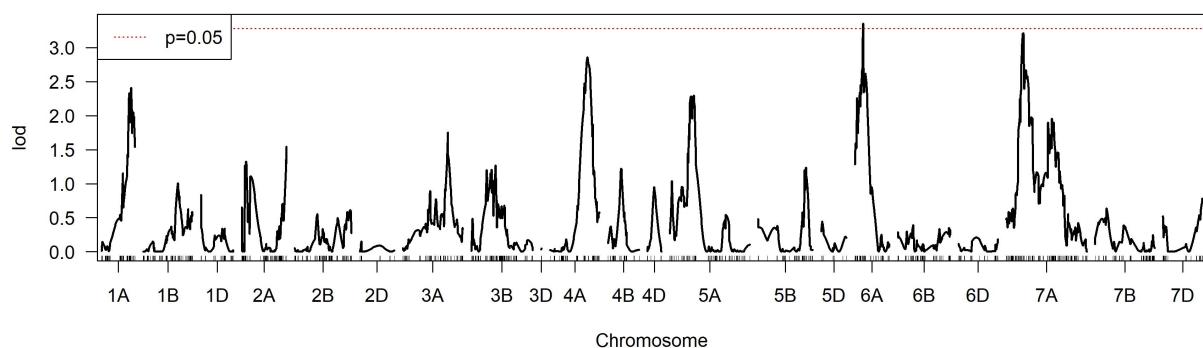


Fusarium Damaged Kernels in Raleigh, NC - 2019

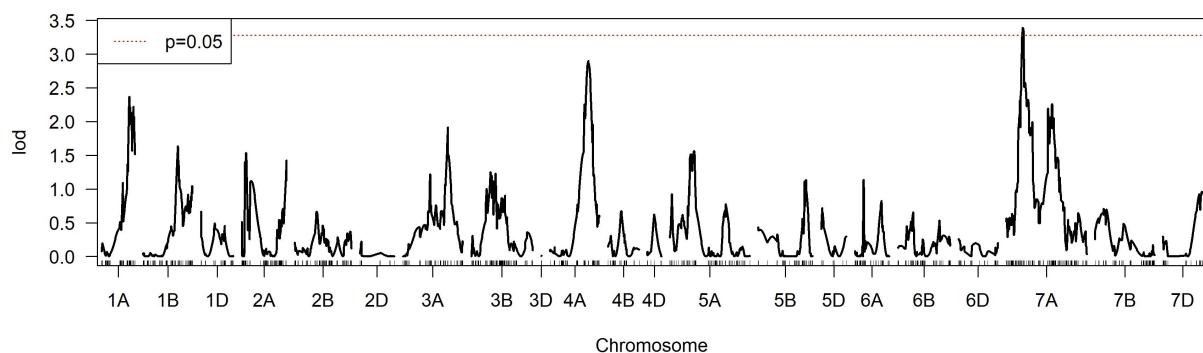
IM for FDK_RAL19



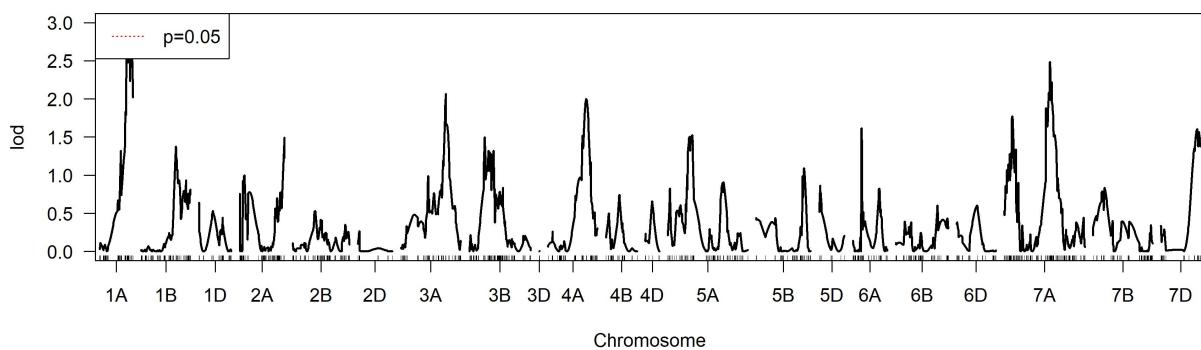
MQM 1 for FDK_RAL19



MQM 2 for FDK_RAL19

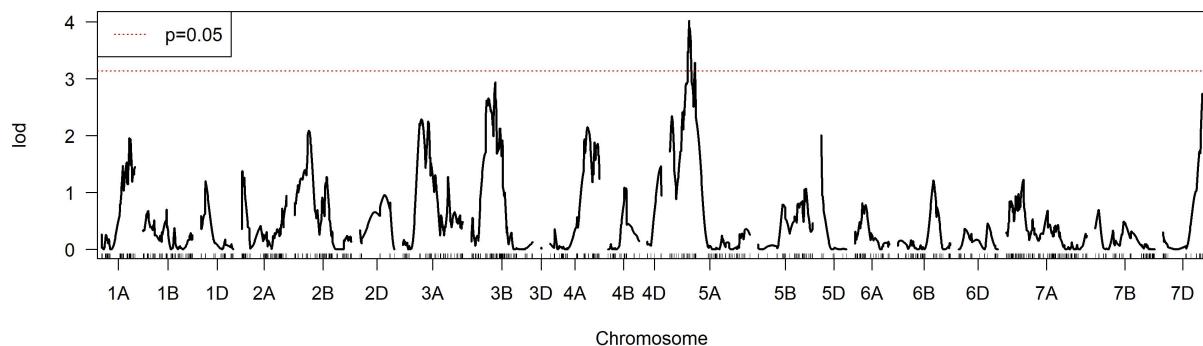


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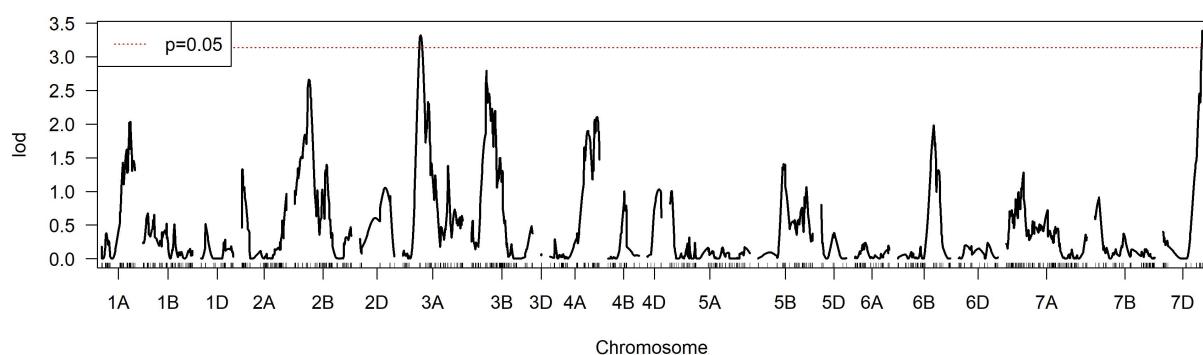


Fusarium Damaged Kernels in Raleigh, NC - 2020

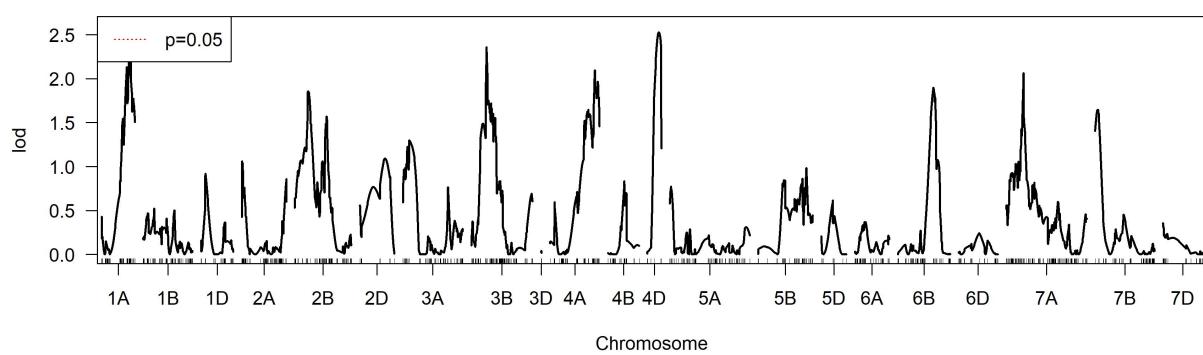
IM for FDK_RAL20



MQM 1 for FDK_RAL20

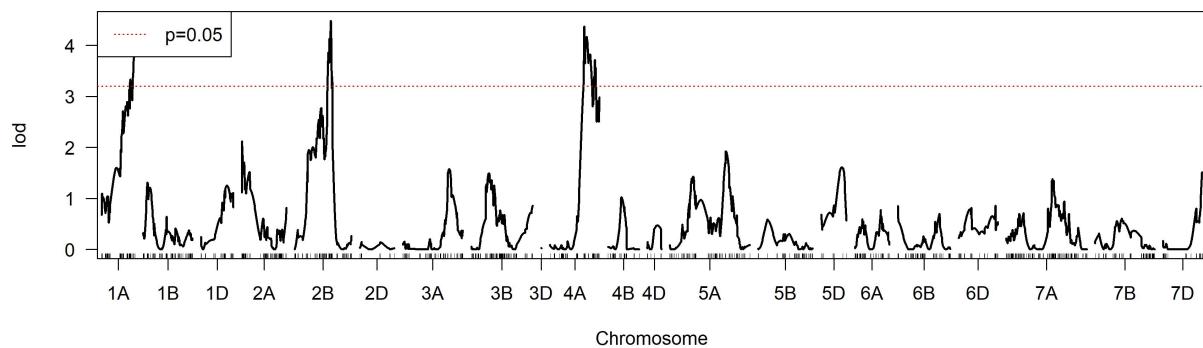


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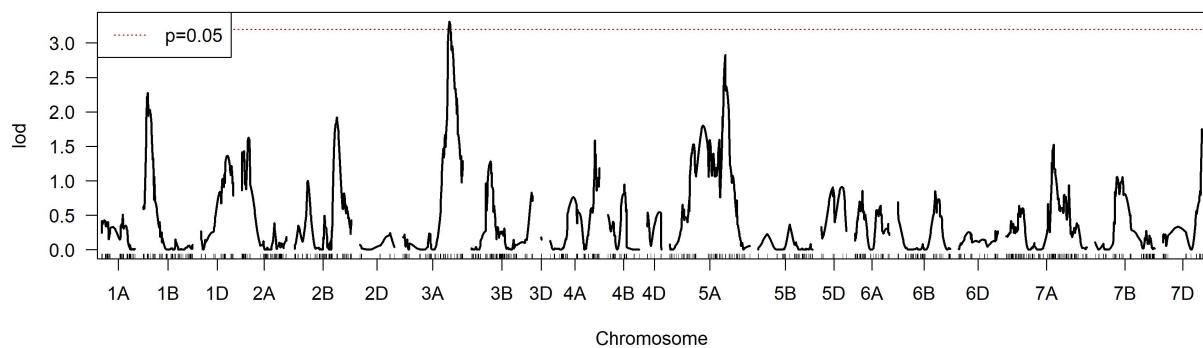


Fusarium Damaged Kernels in Warsaw, VA - 2019

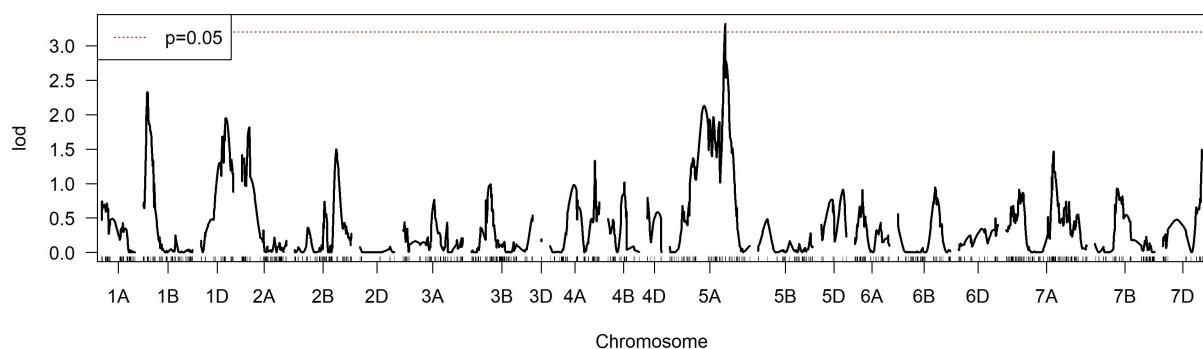
IM for FDK_WAR19



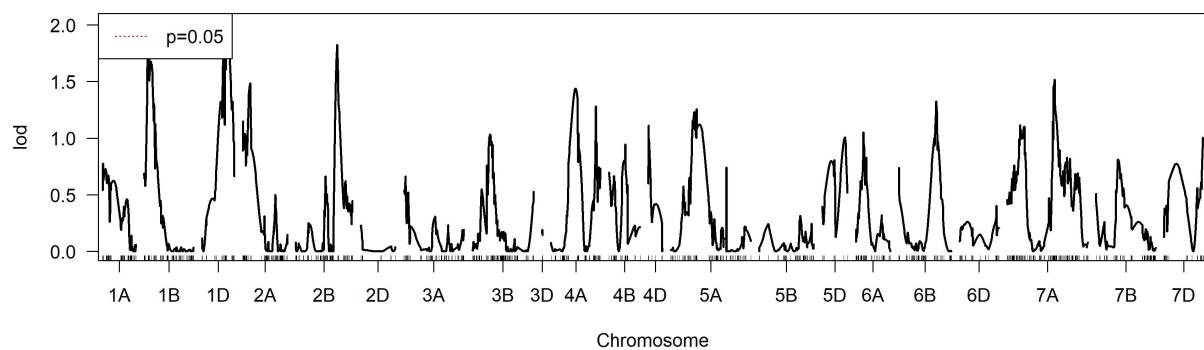
MQM 1 for FDK_WAR19



MQM 2 for FDK_WAR19

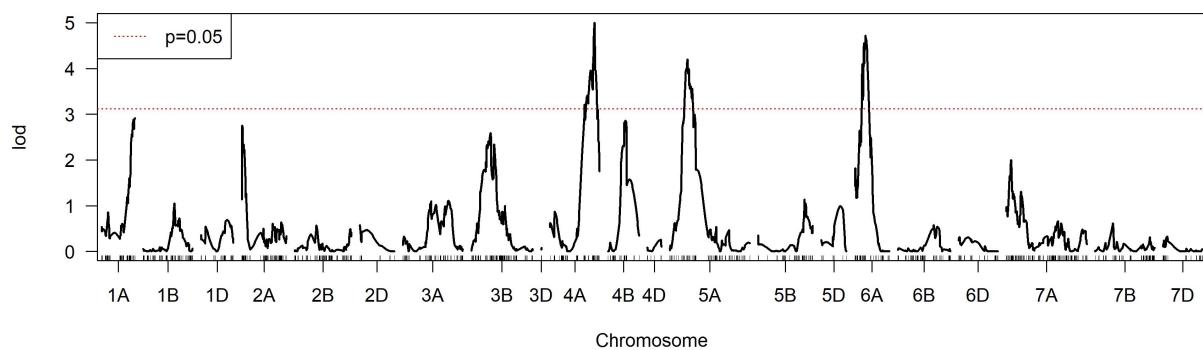


MQM 3 for FDK_WAR19

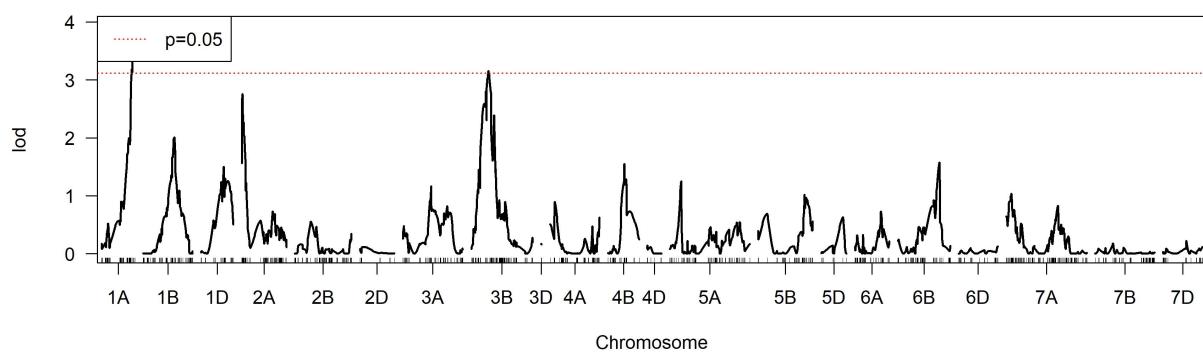


Fusarium Damaged Kernels in Warsaw, VA - 2020

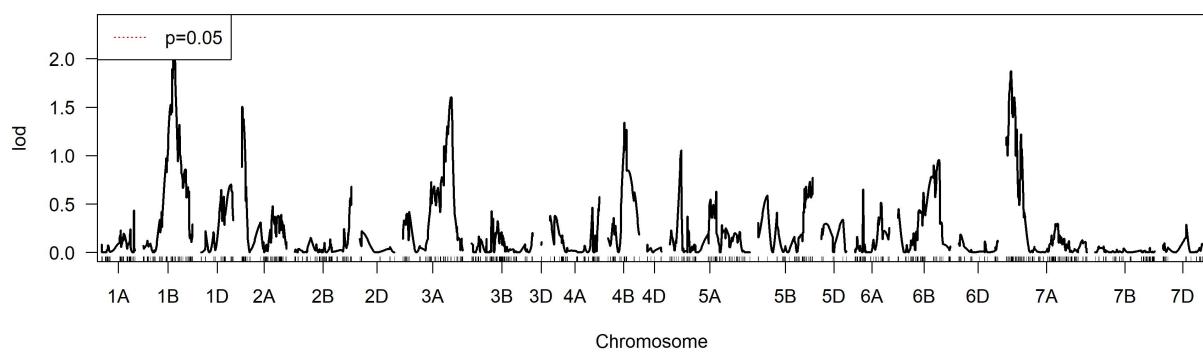
IM for FDK_WAR20



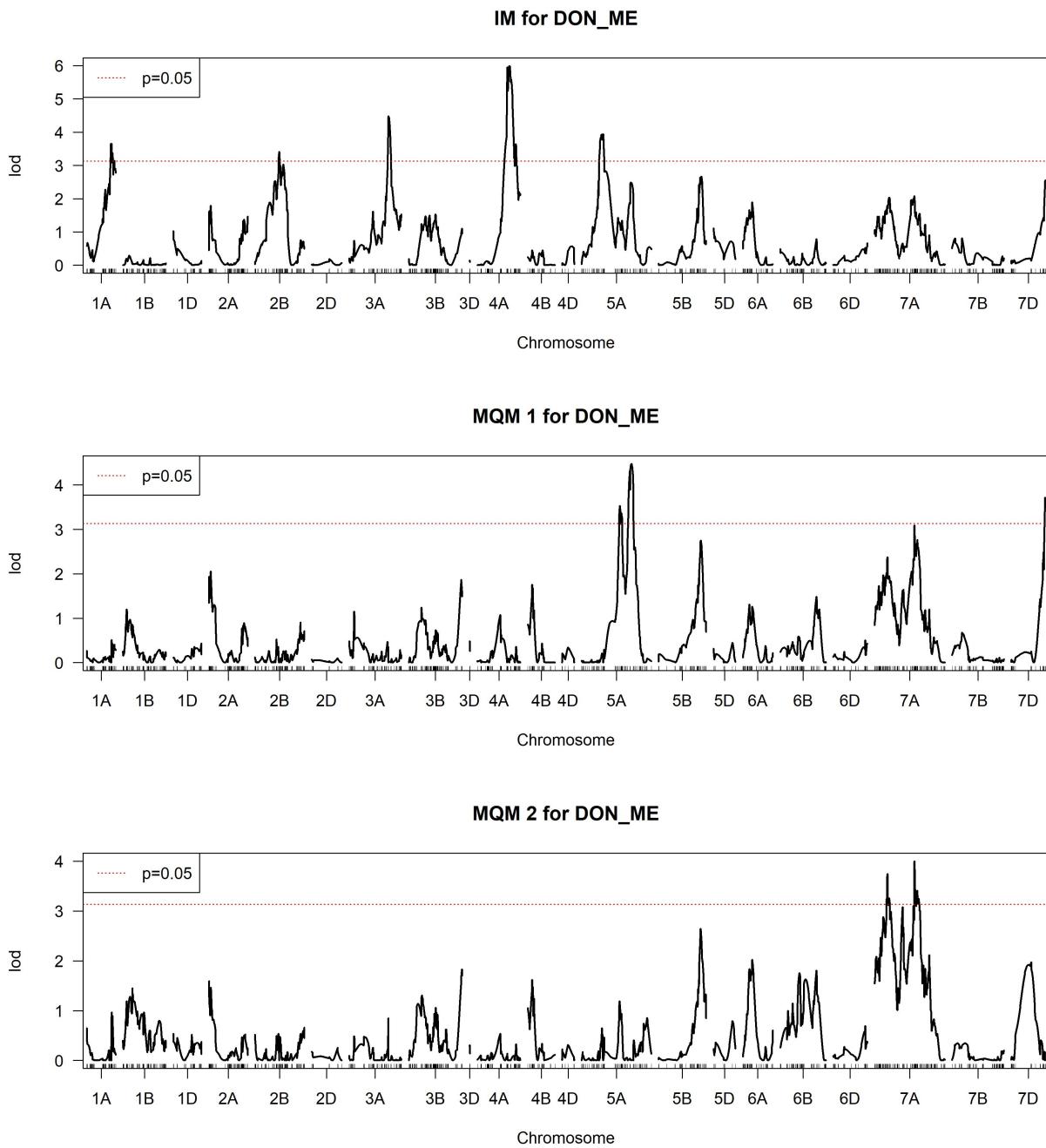
MQM 1 for FDK_WAR20



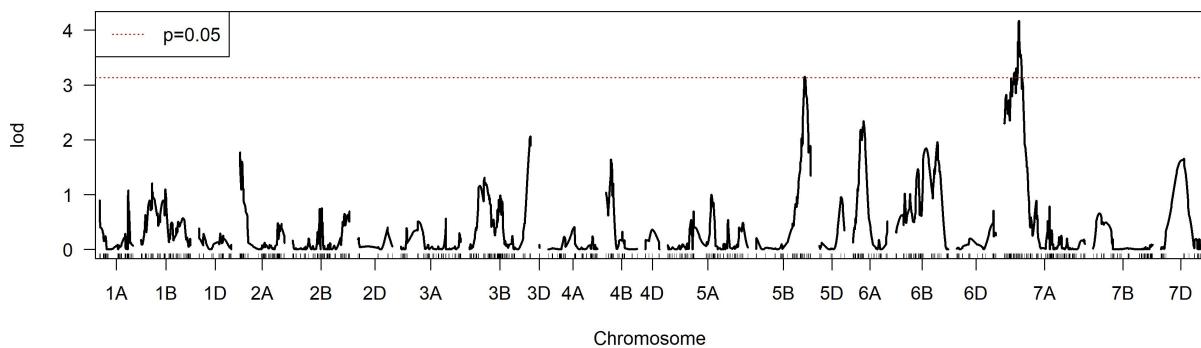
MQM 2 for FDK_WAR20



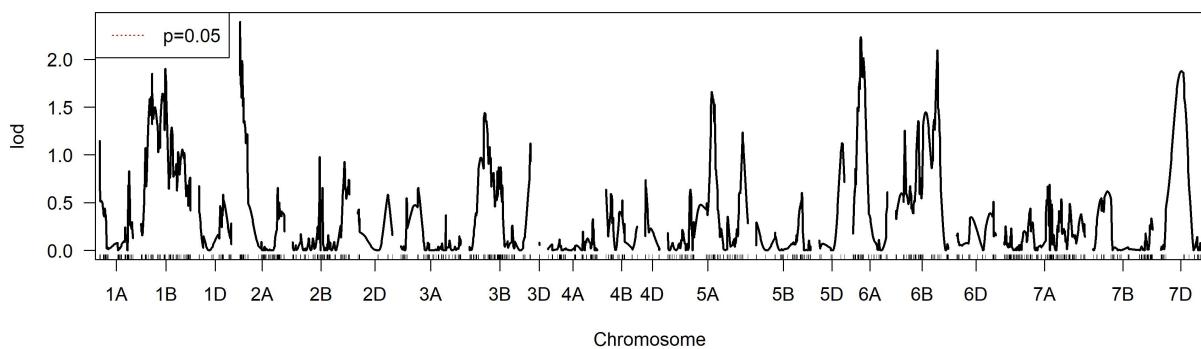
Deoxynivalenol Content Across All Environments



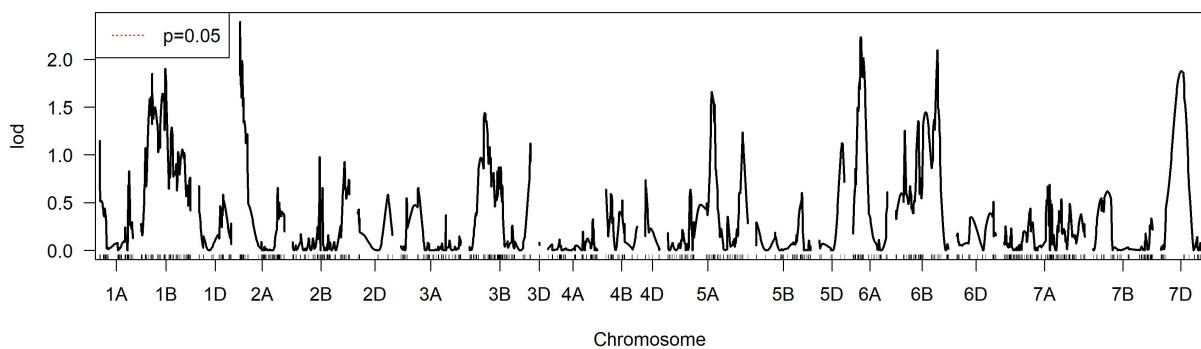
MQM 3 for DON_ME



MQM 4 for DON_ME

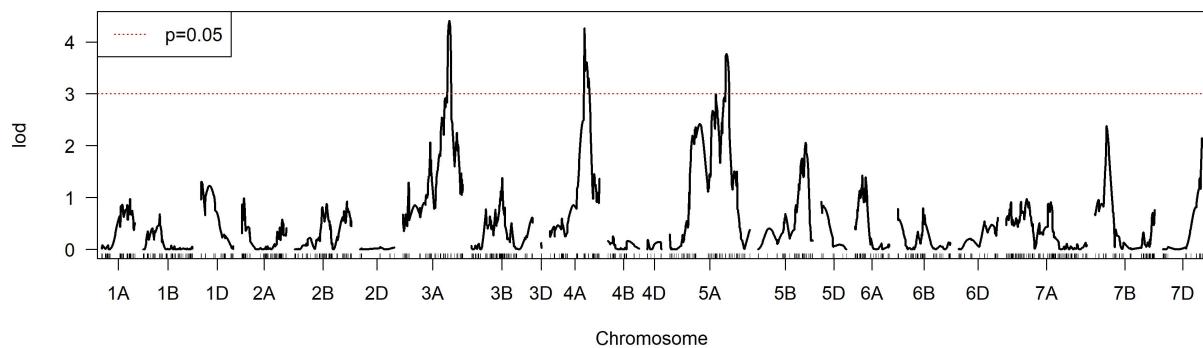


MQM 5 for DON_ME

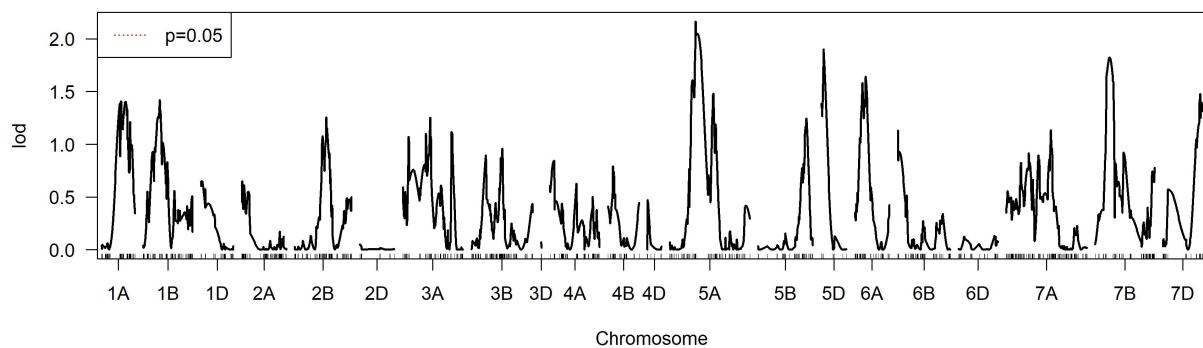


Deoxynivalenol Content in Kinston, NC - 2019

IM for DON_KIN19

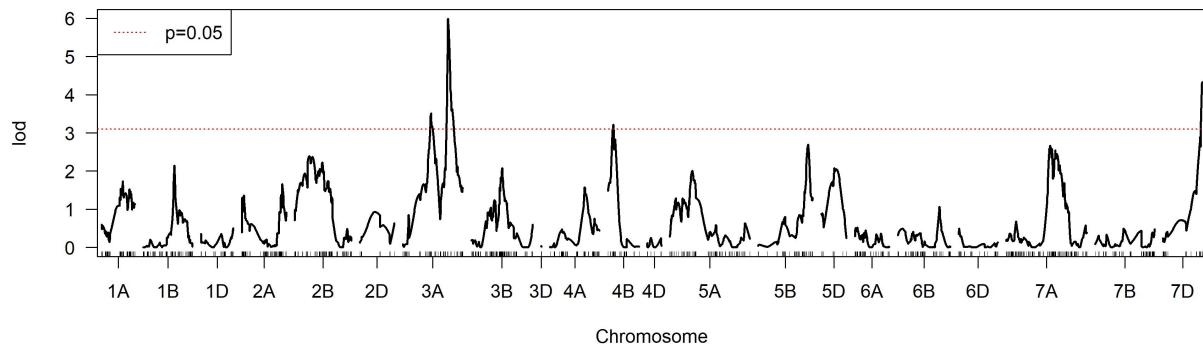


MQM 1 for DON_KIN19

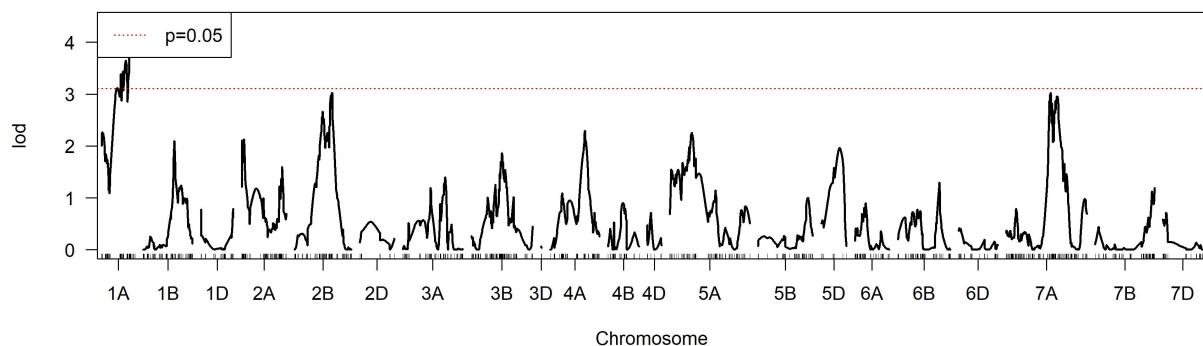


Deoxynivalenol Content in Kinston, NC - 2020

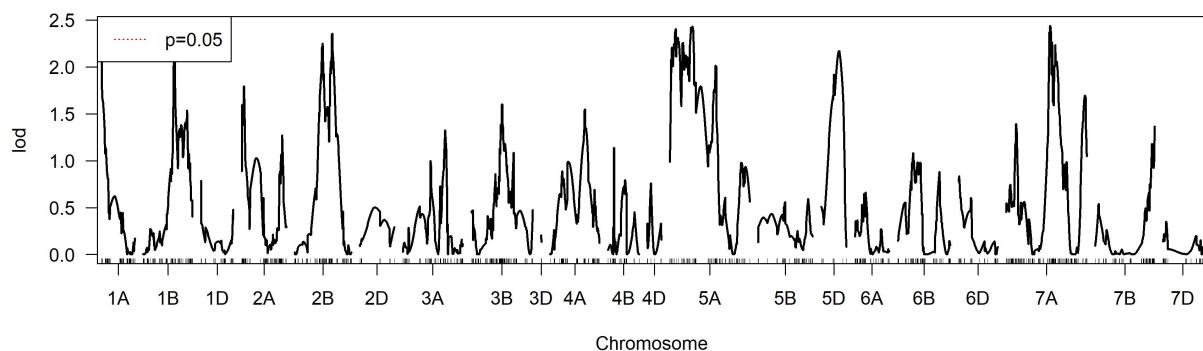
IM for DON_KIN20



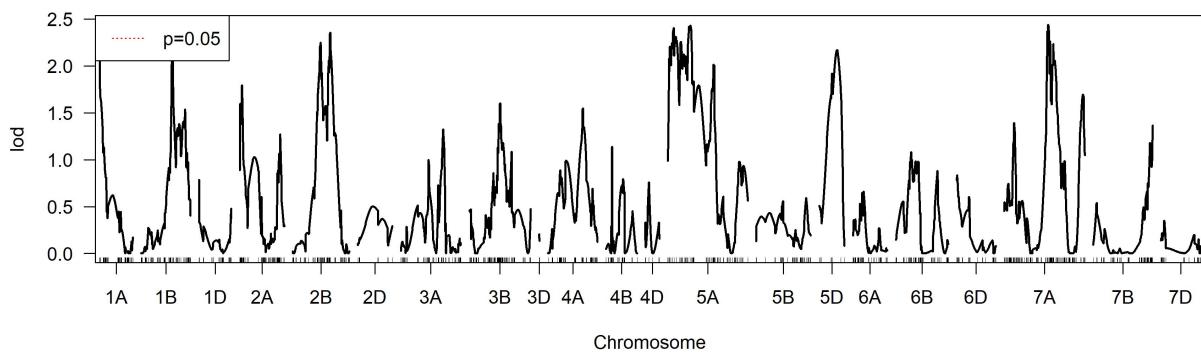
MQM 1 for DON_KIN20



MQM 2 for DON_KIN20

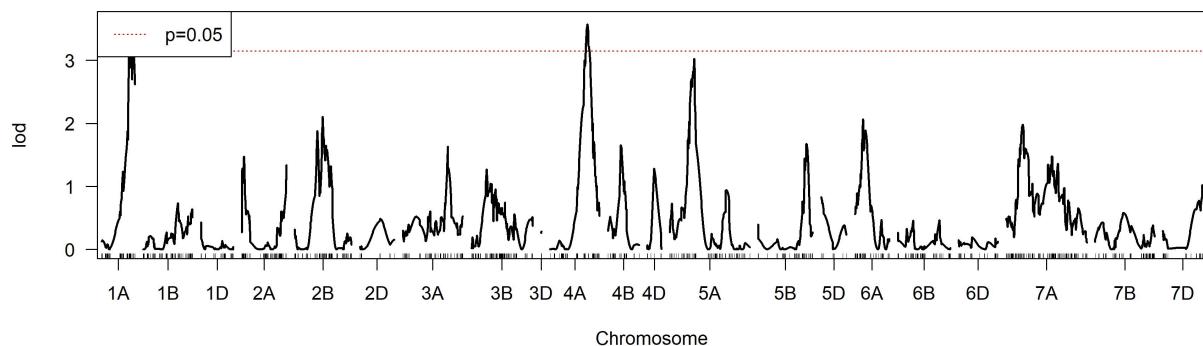


MQM 3 for DON_KIN20

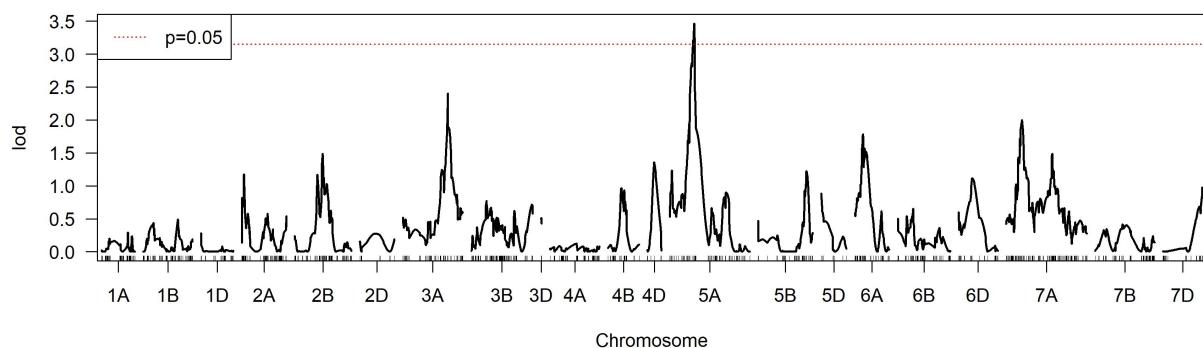


Deoxynivalenol Content in Raleigh, NC - 2019

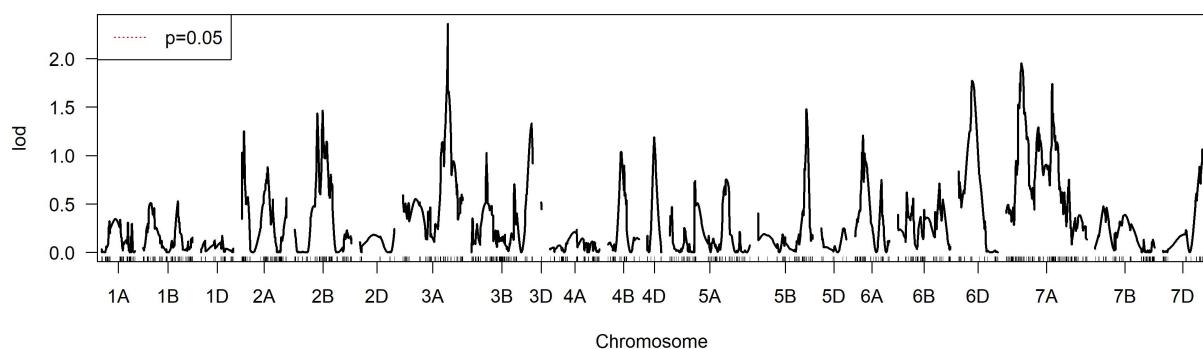
IM for DON_RAL19



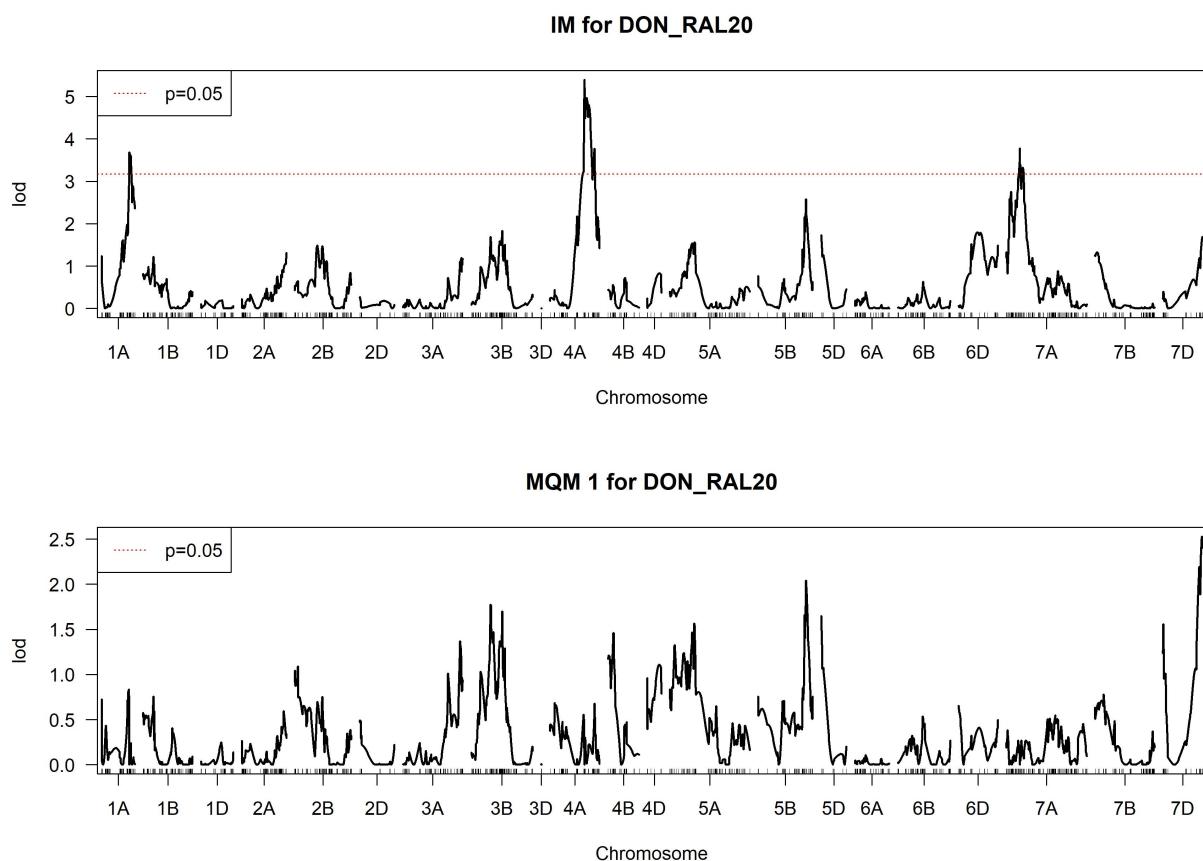
MQM 1 for DON_RAL19



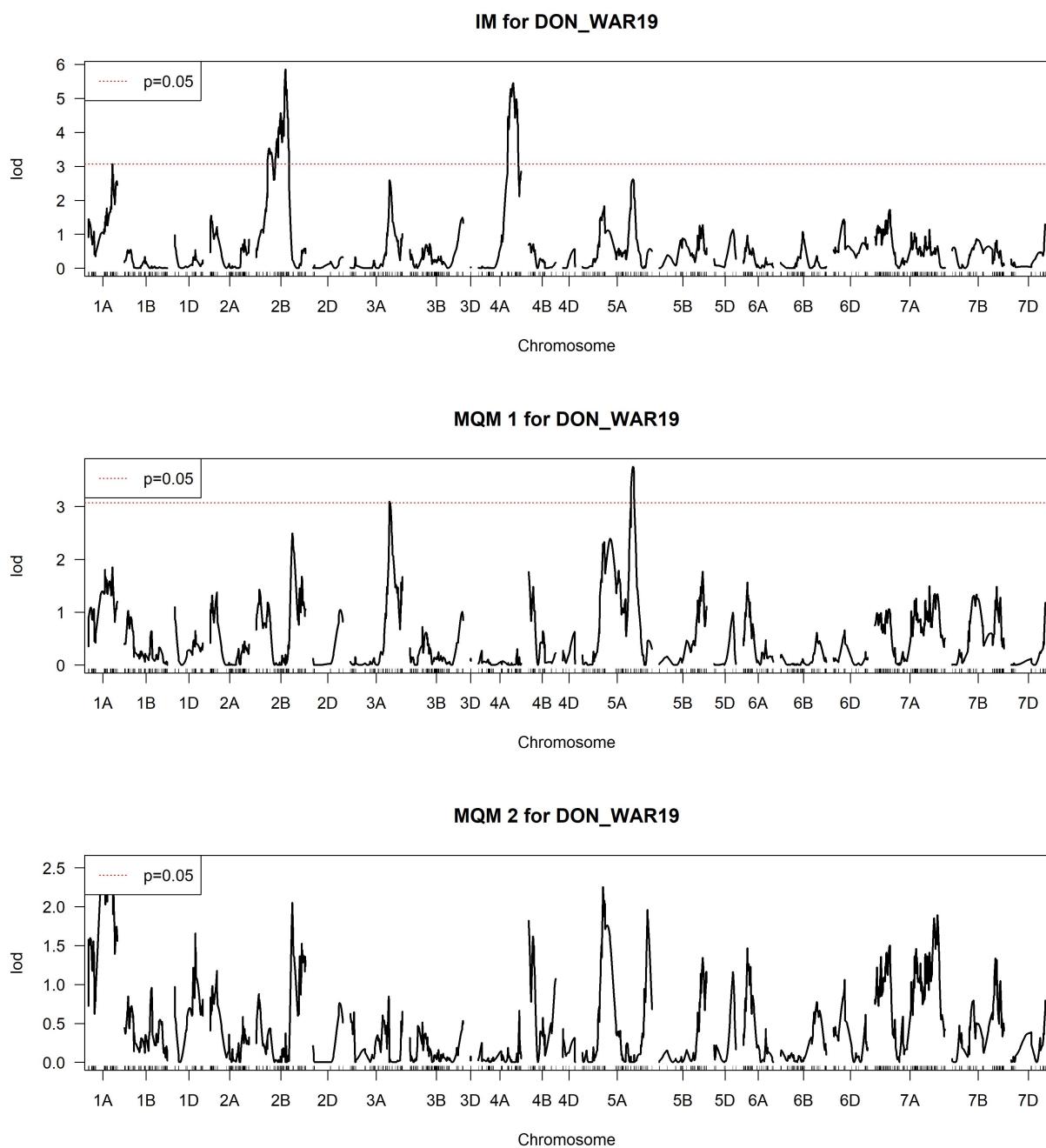
MQM 2 for DON_RAL19



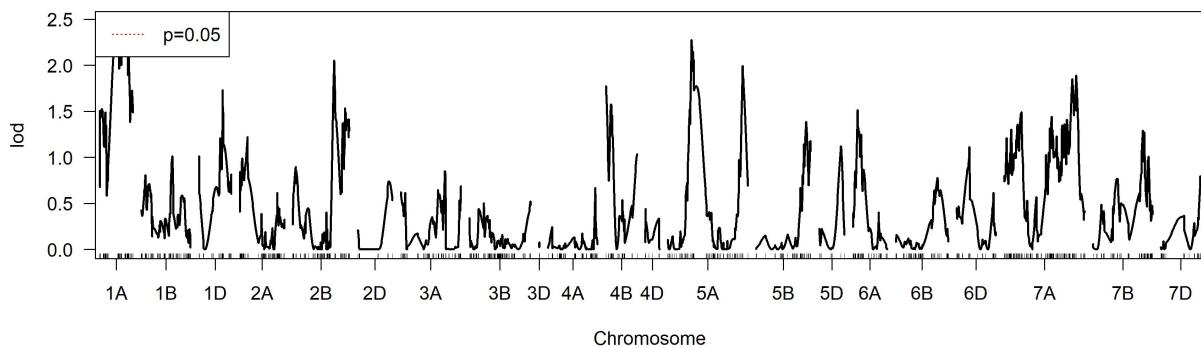
Deoxynivalenol Content in Raleigh, NC - 2020



Deoxynivalenol Content in Warsaw, VA - 2019

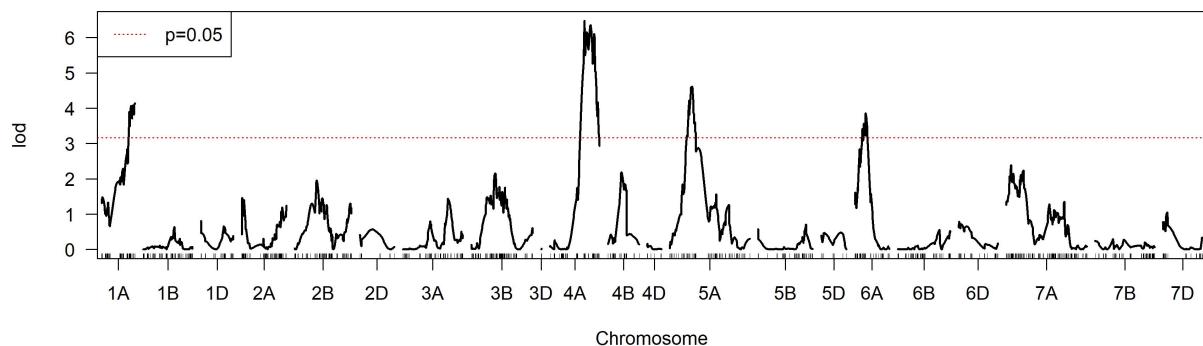


MQM 3 for DON_WAR19



Deoxynivalenol Content in Warsaw, VA - 2020

IM for DON_WAR20



MQM 1 for DON_WAR20

