**Supplementary Table 4** Summary of SNP marker associations for heading date (HD) and plant height (PH). SNP markers have moderate to high level of significance based on threshold values of *p* < 7.65x10-5 (-log10(*p*) > 4.12).

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Environment** | **Trait** | **QTL** | **Chromosome** | **SNP id** | **SNP name** | **SNPa** | **IWGSC-bp** | **R2** | **MAFc** | **Allele effect estimate %d** | ***p*-value** | **-log10(*p*)** |
| Manjimup 2018 | HD | *QHd.MJ18.daw-1B* | 1B | IWB72443 | Tdurum\_contig55429\_116 | [T/C] | 664,302,556 | 0.10 | 0.05 | 12.35 | 6.47E-06 | 5.19 |
| Manjimup 2019 | HD | NA |  |  |  |  |  |  |  |  |  |  |
| Manjimup 2020 | HD | *QHd.MJ20.daw-2D* | 2D | IWA6302 | wsnp\_JD\_rep\_c63957\_40798121 | [T/C] | 20,768,520 | 0.09 | 0.44 | -4.61 | 1.61E-05 | 4.79 |
|  |  | *QHd.MJ20.daw-5B* | 5B | IWB36002 | IACX5702 | [A/G] | 577,227,941 | 0.09 | 0.22 | -5.63 | 6.23E-05 | 4.21 |
| South Perth 2020 | HD | *QHd.SP20.daw-1B* | 1B | IWB68743 | Tdurum\_contig18557\_228 | [A/G] | 664,285,795 | 0.08 | 0.05 | 7.79 | 6.14E-05 | 4.21 |
|  |  |  | 1B | IWB72443 | Tdurum\_contig55429\_116 | [T/C] | 664,302,556 | 0.11 | 0.05 | 9.56 | 3.93E-06 | 5.41 |
|  |  | *QHd.SP20.daw-3D* | 3D | IWA153 | wsnp\_BE444579D\_Ta\_2\_3 | [A/G] | 604,366,294 | 0.09 | 0.06 | 7.80 | 3.85E-05 | 4.41 |
| Manjimup 2018 | PH | *QHt.MJ18.daw-4B* | 4B | IWB6961 | BS00022194\_51 | [T/C] | 475,806,782 | 0.09 | 0.05 | -10.75 | 1.18E-05 | 4.93 |
|  |  |  | 4B | IWB72211 | Tdurum\_contig51818\_145 | [A/G] | 475,806,882 | 0.09 | 0.06 | -10.74 | 8.29E-06 | 5.08 |
|  |  |  | 4B | IWB26339 | Excalibur\_c42450\_727 | [T/C] | 479,154,233 | 0.08 | 0.07 | -9.30 | 6.24E-05 | 4.21 |
| Manjimup 2019 | PH | *QHt.MJ19.daw-1B* | 1B | IWB65905 | TA004946-0577 | [T/C] | 640,560,372 | 0.09 | 0.07 | -8.77 | 2.27E-05 | 4.64 |
|  |  | *QHt.MJ19.daw-2A* | 2A | IWB40126 | Ku\_c8927\_2075 | [A/G] | 691,217,702 | 0.09 | 0.23 | -6.02 | 7.06E-05 | 4.15 |
|  |  | *QHt.MJ19.daw-3A* | 3A | IWB64831 | RFL\_Contig4921\_2352 | [T/C] | 564,944,064 | 0.08 | 0.38 | 4.67 | 3.04E-05 | 4.52 |
| Manjimup 2020 | PH | NA |  |  |  |  |  |  |  |  |  |  |
| South Perth 2020 | PH | *QHt.SP20.daw-5D* | 5D | IWB54648 | RAC875\_c18322\_670 | [A/G] | 31,273,513 | 0.09 | 0.06 | -7.46 | 9.66E-06 | 5.01 |
|  |  |  | 5D | IWB42322 | Kukri\_c20444\_677 | [T/C] | 31,273,805 | 0.08 | 0.06 | -7.24 | 6.10E-05 | 4.21 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |

aIWGSC: IWGSC RefSeq v1.0, bp: base pairs.

bMAF: minor allele frequency.

cThe effect estimates the difference between the average phenotypic values of the homozygous A genotype relative to the homozygous B genotype.

NA: No associations detected at -log10(*p*) > 4.12.