

**Supplementary Table S1.** Information of QTLs associated with Hunter a in the linkage group 8 of ‘Whangkeumbae’ × ‘Minibae’.

| Locus        | Map position (cM) | Segregation type | Hunter a in 2019 |                     | Hunter a in 2020 |        | Russet coverage |        |
|--------------|-------------------|------------------|------------------|---------------------|------------------|--------|-----------------|--------|
|              |                   |                  | LOD <sup>1</sup> | %Expl. <sup>2</sup> | LOD              | %Expl. | LOD             | %Expl. |
| AX-172457336 | 71.19             | <nn × np>        | 1.59             | 5.6                 | 1.94             | 7.7    | 4.4             | 11.8   |
| AX-171872225 | 82.34             | <nn × np>        | 3.13             | 10.6                | 3.85             | 14.7   | 6.52            | 17     |
| AX-171975485 | 83.09             | <nn × np>        | 3.06             | 10.4                | 4.10             | 15.7   | 6.42            | 16.8   |
| AX-172010268 | 83.94             | <nn × np>        | 2.3              | 8.0                 | 2.99             | 11.7   | 5.37            | 14.2   |
| AX-171782752 | 84.82             | <nn × np>        | 2.49             | 8.6                 | 3.20             | 12.4   | 5.58            | 14.8   |
| AX-171911034 | 86.35             | <nn × np>        | 2.09             | 7.2                 | 2.71             | 10.6   | 4.35            | 11.7   |
| AX-172005411 | 90.25             | <nn × np>        | 2.17             | 7.5                 | 2.77             | 10.9   | 6.15            | 16.1   |
| AX-172005400 | 90.27             | <nn × np>        | 2.17             | 7.5                 | 2.77             | 10.9   | 6.15            | 16.1   |
| AX-171901693 | 93.01             | <nn × np>        | 2.46             | 8.5                 | 3.07             | 11.9   | 5.1             | 13.6   |
| AX-172147987 | 94.07             | <nn × np>        | 2.45             | 8.4                 | 2.99             | 11.7   | 5.56            | 14.7   |
| AX-172418048 | 94.08             | <nn × np>        | 2.45             | 8.4                 | 2.99             | 11.7   | 5.58            | 14.7   |
| AX-172005475 | 94.57             | <nn × np>        | 2.77             | 9.5                 | 3.28             | 12.7   | 6.59            | 17.2   |
| AX-172005493 | 94.60             | <nn × np>        | 2.77             | 9.5                 | 3.28             | 12.7   | 6.6             | 17.2   |
| AX-172005376 | 94.89             | <nn × np>        | 2.59             | 8.9                 | 2.92             | 11.4   | 6.11            | 16     |
| AX-171941690 | 98.83             | <nn × np>        | 4.09             | 13.7                | 4.10             | 15.6   | 9.58            | 24     |
| AX-171921664 | 105.23            | <nn × np>        | 6.71             | 21.5                | 5.99             | 22.0   | 9.66            | 24.1   |
| AX-172108335 | 105.94            | <nn × np>        | 6.84             | 21.8                | 5.95             | 21.9   | 9.11            | 22.9   |
| AX-172108340 | 105.95            | <nn × np>        | 6.84             | 21.8                | 5.95             | 21.96  | 9.11            | 22.9   |
| AX-171888546 | 106.00            | <nn × np>        | 6.87             | 21.9                | 5.98             | 22.0   | 9.17            | 23.1   |
| AX-171803407 | 106.54            | <nn × np>        | 7.15             | 22.7                | 6.24             | 22.8   | 9.76            | 24.4   |
| AX-171803399 | 106.61            | <nn × np>        | 7.17             | 22.7                | 6.26             | 22.9   | 9.83            | 24.5   |
| AX-172419629 | 108.65            | <nn × np>        | 6.66             | 21.3                | 5.67             | 21.0   | 9.61            | 24     |
| AX-172419633 | 108.71            | <nn × np>        | 6.66             | 21.3                | 5.67             | 21.0   | 9.59            | 24     |
| AX-171921595 | 110.83            | <hk × hk>        | 7.60             | 23.9                | 6.10             | 22.3   | 11.39           | 27.8   |
| AX-172086074 | 113.02            | <nn × np>        | 7.43             | 23.4                | 5.48             | 20.3   | 10.34           | 25.6   |
| AX-171951843 | 113.48            | <nn × np>        | 7.48             | 23.6                | 5.33             | 19.8   | 9.47            | 23.7   |
| AX-171888557 | 113.72            | <nn × np>        | 7.30             | 23.1                | 5.18             | 19.3   | 9.49            | 23.8   |
| AX-172331276 | 114.71            | <hk × hk>        | 3.41             | 11.5                | 2.57             | 10.1   | 6.85            | 17.8   |
| AX-171803456 | 117.57            | <hk × hk>        | 3.27             | 11.1                | 2.15             | 8.5    | 6.05            | 15.9   |
| AX-171888658 | 117.57            | <hk × hk>        | 3.27             | 11.1                | 2.15             | 8.5    | 6.05            | 15.9   |
| AX-171775580 | 118.18            | <nn × np>        | 3.39             | 11.5                | 2.41             | 9.5    | 6.15            | 16.1   |
| AX-172331274 | 119.269           | <nn × np>        | 3.33             | 11.3                | 2.58             | 10.1   | 5.8             | 15.3   |
| AX-172180622 | 119.665           | <hk × hk>        | 2.80             | 9.6                 | 1.63             | 6.5    | 5.11            | 13.6   |
| AX-171920953 | 119.754           | <hk × hk>        | 2.75             | 9.4                 | 2.02             | 8.0    | 5.08            | 13.5   |
| AX-172225597 | 119.831           | <hk × hk>        | 2.40             | 8.3                 | 1.77             | 7.1    | 5.03            | 13.4   |
| AX-171839761 | 119.831           | <hk × hk>        | 2.44             | 8.4                 | 1.80             | 7.2    | 4.97            | 13.3   |
| AX-172119046 | 121.212           | <hk × hk>        | 3.34             | 11.3                | 2.21             | 8.8    | 5.66            | 14.9   |
| AX-172119119 | 122.761           | <hk × hk>        | 5.18             | 17.0                | 3.65             | 14.1   | 7.7             | 19.8   |
| AX-171809161 | 123.161           | <hk × hk>        | 5.03             | 16.6                | 3.61             | 13.9   | 7.48            | 19.3   |
| AX-172119167 | 124.42            | <nn × np>        | 5.83             | 18.9                | 4.25             | 16.2   | 8.97            | 22.6   |
| AX-172238829 | 124.743           | <nn × np>        | 5.96             | 19.3                | 4.39             | 16.7   | 9.33            | 23.4   |
| AX-171820480 | 125.071           | <hk × hk>        | 5.93             | 19.2                | 4.51             | 17.0   | 9.47            | 23.7   |

**Supplementary Table S1.** Continued.

| Locus        | Map position (cM) | Segregation type | Hunter a in 2019 |                     | Hunter a in 2020 |        | Russet coverage |        |
|--------------|-------------------|------------------|------------------|---------------------|------------------|--------|-----------------|--------|
|              |                   |                  | LOD <sup>z</sup> | %Expl. <sup>y</sup> | LOD              | %Expl. | LOD             | %Expl. |
| AX-171809207 | 126.405           | <nn × np>        | 6.40             | 20.6                | 5.20             | 19.4   | 10.48           | 25.9   |
| AX-172118874 | 127.041           | <nn × np>        | 6.62             | 21.2                | 5.39             | 20.0   | 11.03           | 27.1   |
| S8_16087172  | 133.983           | <hk × hk>        | 6.56             | 21.0                | 7.59             | 27.0   | 11.05           | 27.1   |
| S8_16154759  | 137.151           | <nn × np>        | 4.81             | 15.9                | 5.59             | 20.7   | 9.57            | 24     |
| S8_16142431  | 138.077           | <hk × hk>        | 4.35             | 14.5                | 4.83             | 18.2   | 8.85            | 22.4   |

<sup>1</sup>Logarithm of odds.

<sup>2</sup>Percentage of phenotype variance explained by QTL.