**Appendix A** Flower traits of Dongkui (*Myrica rubra*) and its two mutants DB1 and DB2

| Cultivar | Flo              | wer              | Inflore        | escence        | Flower branch length/cm | Number of<br>Inflorescence |  |
|----------|------------------|------------------|----------------|----------------|-------------------------|----------------------------|--|
|          | Length/cm        | Width/cm         | Length/cm      | Width/cm       |                         |                            |  |
| DK       | 0.7±0.1c         | 0.2±0.1a         | 0.9±0.2b       | 1.18±0.12c     | 18.0±4.2c               | 14.8±0.8b                  |  |
| DB1      | $0.92 \pm 0.1 d$ | $0.32 \pm 0.02b$ | 1.26±0.24c     | 1.24±0.34c     | 13.8±2.8ab              | 6.6±2.6a                   |  |
| DB2      | $0.58 \pm 0.08b$ | $0.24 \pm 0.04a$ | $0.64\pm0.14a$ | $0.48\pm0.28a$ | 11.5±1.5a               | 7.2±2.0a                   |  |

Note: The different small letters indicate the significant differences at p<0.05. The same as below.

**Appendix B** Cytological morphology, anthocyanin content ,polyphenols, total flavonoids, soluble sugar, total acidity, TSS content of Dongkui (Myrica rubra) and its two mutants DB1 and DB2

| Cultiv | Cytological morphology (μm) Anthocya |             | Anthocyanin o | n content (mg/100 g) |             |             | Polyphenols | Total      | Soluble sugar    | Total acidity | Total soluble |
|--------|--------------------------------------|-------------|---------------|----------------------|-------------|-------------|-------------|------------|------------------|---------------|---------------|
| ar     | Leaf thickness                       | Palisade    | Young fruit   | Stone                | Color       | Ripening    | (mg/100 g)  | flavonoids | (g/100 g)        | (g/100 g)     | solid (%)     |
|        |                                      | thickness   |               | hardening            | turning     |             |             | (mg/100 g) |                  |               |               |
| DK     | 122.5±9.87a                          | 47.74±3.31a | 25.82±0.03b   | 13.28±0.02a          | 12.89±0.03a | 40.19±0.70a | 0.19±0.01a  | 0.44±0.01a | $7.78 \pm 0.07a$ | 9.69±0.14a    | 11.70±1.15ab  |
| DB1    | 202.2±6.69c                          | 79.17±4.79c | 25.04±0.22b   | 14.53±0.20a          | 24.37±0.30c | 51.38±1.10b | 0.24±0.04c  | 0.55±0.02b | $7.72 \pm 0.05a$ | 10.80±0.13bc  | 12.60±1.03bc  |
| DB2    | 169.0±10.49b                         | 54.15±7.59b | 16.56±0.20a   | 18.68±0.20b          | 22.34±0.50b | 49.64±1.00b | 0.20±0.02b  | 0.66±0.03c | $7.49 \pm 0.12b$ | 10.44±0.03ab  | 11.30±0.98a   |

Appendix C Gene mapping results at two fruit stages of Dongkui (Myrica rubra) and its two mutants DB1 and DB2

| Total     | Total base pairs  | Total mapped     | Perfect match                                   | ≤2-bp     | Unique match   | Multi-position  | Total unmapped  |
|-----------|---|------------------|---|-----------|--|---|---|
| reads     |   | reads            |   | mismatch  |  | match   | reads   |
| 3,708,809 | 181,731,641   | 3,174,544        | 2,565,364                                       | 609,180   | 2,873,118  | 301,426   | 534,265   |
| (100.00%) | (100.00%)   | (85.59%)         | (69.17%)  | (16.43%)  | (77.47%)   | (8.13%)   | (14.41%)  |
| 3,606,358 | 176,711,542   | 3,117,364        | 2,525,756                                       | 591,608   | 2,819,792  | 297,572   | 488,994   |
| (100.00%) | (100.00%)   | (86.44%)         | (70.04%)  | (16.40%)  | (78.19%)   | (8.25%)   | (13.56%)  |
| 3,575,119 | 175,180,831   | 3,130,386        | 2,520,306                                       | 610,080   | 2,846,377  | 284,009   | 444,733   |
| (100.00%) | (100.00%)   | (87.56%)         | (70.50%)  | (17.06%)  | (79.62%)   | (7.94%)   | (12.44%)  |
| 3,787,895 | 185,606,855   | 3,325,509        | 2,649,375                                       | 676,134   | 3,110,396  | 215,113   | 462,386   |
| (100.00%) | (100.00%)   | (87.79%)         | (69.94%)  | (17.85%)  | (82.11%)   | (5.68%)   | (12.21%)  |
| 3,610,954 | 176,936,746   | 2,537,553        | 2,059,232                                       | 478,321   | 2,314,240  | 223,313   | 1,073,401   |
| (100.00%) | (100.00%)   | (70.27%)         | (57.03%)  | (13.25%)  | (64.09%)   | (6.18%)   | (29.73%)  |
| 3,594,742 | 176,142,358   | 3,149,334        | 2,581,484                                       | 567,850   | 2,853,553  | 295,781   | 445,408   |
| (100.00%) | (100.00%)   | (87.61%)         | (71.81%)  | (15.80%)  | (79.38%)   | (8.23%)   | (12.39%)  |
|           | reads  3,708,809 (100.00%)  3,606,358 (100.00%)  3,575,119 (100.00%)  3,787,895 (100.00%)  3,610,954 (100.00%)  3,594,742 | reads  3,708,809 | reads  7. 7. 7. 7. 7. 7. 7. 7. 7. 7. 7. 7. 7. 7 | reads  7. | reads reads mismatch  3,708,809 181,731,641 3,174,544 2,565,364 609,180  (100.00%) (100.00%) (85.59%) (69.17%) (16.43%)  3,606,358 176,711,542 3,117,364 2,525,756 591,608  (100.00%) (100.00%) (86.44%) (70.04%) (16.40%)  3,575,119 175,180,831 3,130,386 2,520,306 610,080  (100.00%) (100.00%) (87.56%) (70.50%) (17.06%)  3,787,895 185,606,855 3,325,509 2,649,375 676,134  (100.00%) (100.00%) (87.79%) (69.94%) (17.85%)  3,610,954 176,936,746 2,537,553 2,059,232 478,321  (100.00%) (100.00%) (70.27%) (57.03%) (13.25%)  3,594,742 176,142,358 3,149,334 2,581,484 567,850 | reads reads mismatch  3,708,809 181,731,641 3,174,544 2,565,364 609,180 2,873,118  (100.00%) (100.00%) (85.59%) (69.17%) (16.43%) (77.47%)  3,606,358 176,711,542 3,117,364 2,525,756 591,608 2,819,792  (100.00%) (100.00%) (86.44%) (70.04%) (16.40%) (78.19%)  3,575,119 175,180,831 3,130,386 2,520,306 610,080 2,846,377  (100.00%) (100.00%) (87.56%) (70.50%) (17.06%) (79.62%)  3,787,895 185,606,855 3,325,509 2,649,375 676,134 3,110,396  (100.00%) (100.00%) (87.79%) (69.94%) (17.85%) (82.11%)  3,610,954 176,936,746 2,537,553 2,059,232 478,321 2,314,240  (100.00%) (100.00%) (70.27%) (57.03%) (13.25%) (64.09%)  3,594,742 176,142,358 3,149,334 2,581,484 567,850 2,853,553 | reads reads mismatch match  3,708,809 181,731,641 3,174,544 2,565,364 609,180 2,873,118 301,426  (100.00%) (100.00%) (85.59%) (69.17%) (16.43%) (77.47%) (8.13%)  3,606,358 176,711,542 3,117,364 2,525,756 591,608 2,819,792 297,572  (100.00%) (100.00%) (86.44%) (70.04%) (16.40%) (78.19%) (8.25%)  3,575,119 175,180,831 3,130,386 2,520,306 610,080 2,846,377 284,009  (100.00%) (100.00%) (87.56%) (70.50%) (17.06%) (79.62%) (7.94%)  3,787,895 185,606,855 3,325,509 2,649,375 676,134 3,110,396 215,113  (100.00%) (100.00%) (87.79%) (69.94%) (17.85%) (82.11%) (5.68%)  3,610,954 176,936,746 2,537,553 2,059,232 478,321 2,314,240 223,313  (100.00%) (100.00%) (70.27%) (57.03%) (13.25%) (64.09%) (6.18%)  3,594,742 176,142,358 3,149,334 2,581,484 567,850 2,853,553 295,781 |

<sup>\*</sup> Mature late