

**Table S1** Sampling information and a summary of genetic diversity of studied *D. involucrata* populations.

| Pop.ID       | Longitude/°E | Latitude/°N | n         | $\pi (\times 10^{-4})$ | Ho/He ( $\times 10^{-2}$ ) |
|--------------|--------------|-------------|-----------|------------------------|----------------------------|
| <b>West</b>  |              |             | <b>47</b> | <b>1.40</b>            | <b>0.32/5.78</b>           |
| SCBC         | 104.32       | 31.86       | 5         | 0.92                   | 0.34/6.09                  |
| SCWC         | 103.27       | 30.88       | 8         | 1.11                   | 0.57/4.85                  |
| SCBX         | 102.64       | 30.41       | 11        | 1.04                   | 0.36/4.92                  |
| SCTQ         | 102.43       | 30.17       | 11        | 1.08                   | 0.43/4.91                  |
| SCYJ         | 102.89       | 29.63       | 14        | 1.04                   | 0.30/4.59                  |
| <b>Wmix</b>  |              |             | <b>28</b> | <b>1.51</b>            | <b>0.45/6.10</b>           |
| SCEM         | 103.35       | 29.56       | 13        | 1.16                   | 0.32/4.42                  |
| SCLB         | 103.64       | 28.38       | 15        | 1.41                   | 0.58/5.53                  |
| <b>South</b> |              |             | <b>22</b> | <b>3.42</b>            | <b>10.3/13.9</b>           |
| SCJL         | 104.76       | 27.89       | 12        | 1.28                   | 0.28/4.42                  |
| GZYS         | 104.77       | 26.5        | 5         | 3.43                   | 16.0/12.9                  |
| GZZJ         | 105.55       | 26.57       | 5         | 3.64                   | 17.8/13.7                  |
| <b>Emix</b>  |              |             | <b>26</b> | <b>1.97</b>            | <b>0.64/7.94</b>           |
| GZKK         | 107.17       | 28.23       | 15        | 1.74                   | 0.47/6.99                  |
| CQJF         | 107.05       | 28.87       | 11        | 1.75                   | 0.88/7.06                  |
| <b>East</b>  |              |             | <b>69</b> | <b>2.11</b>            | <b>0.49/8.69</b>           |
| GZFJ         | 108.77       | 27.84       | 13        | 1.66                   | 0.66/7.23                  |
| HNTF         | 110.09       | 29.78       | 14        | 1.70                   | 0.51/7.72                  |
| HNZJJ        | 110.41       | 29.33       | 6         | 0.96                   | 0.30/4.06                  |
| HBXD         | 109.11       | 30.09       | 16        | 1.66                   | 0.47/7.36                  |
| HBDLL        | 110.93       | 31.06       | 7         | 1.31                   | 0.53/5.56                  |
| HBSNJ        | 110.39       | 31.47       | 15        | 1.51                   | 0.43/6.43                  |