**Supplemental**

**Table S1.** Changes in embryo length, seed length, embryo length : seed length ratio at 2-week intervals as seeds of *Ilex formosana* were incubated at 20/10°C. Means (*n* = 10) ± SE within a column followed by different letters differ significantly (Sidak test, α = 0.05)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Species | Incubation time  (weeks) | Embryo length (E)  (mm) | Seed length (S)  (mm) | E:S ratio |
| *Ilex formosana*  20/10°C | 0 | 0.27±0.04b | 3.09±0.13b | 0.09±0.01c |
| 2 | 0.35±0.03b | 3.24±0.21ab | 0.11±0.01c |
| 4 | 0.34±0.04b | 3.26±0.12ab | 0.10±0.01c |
| 6 | 0.31±0.03b | 3.21±0.13ab | 0.10±0.01c |
| 8 | 0.32±0.03b | 3.24±0.13ab | 0.10±0.01c |
| 10 | 0.36±0.03b | 3.09±0.12ab | 0.12±0.01c |
| 12 | 0.36±0.04b | 3.19±0.23ab | 0.11±0.01c |
| 14 | 1.15±0.52a | 3.36±0.26a | 0.34±0.14ab |
| 16 | 1.01±0.44a | 3.24±0.15ab | 0.31±0.13b |
| 18  20 | 1.45±0.52a  1.30±0.38a | 3.32±0.11ab  3.26±0.14ab | 0.44±0.15ab |
| 0.40±0.10ab |
| 22 | 1.50±0.46a | 3.26±0.26ab | 0.46±0.12a |

**Table S2.** Changes in embryo length, seed length, embryo length : seed length ratio at 2-week intervals as seeds of *Ilex rotunda* from subtropical Taiwan were incubated at 20/10°C. Means (*n* = 10) ± SE within a column followed by different letters differ significantly (Sidak test, α = 0.05)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Species | Incubation time  (weeks) | Embryo length (E)  (mm) | Seed length (S)  (mm) | E:S ratio |
| *Ilex rotunda* (north-subtropical)  20/10°C | 0 | 0.27±0.02f | 3.87±0.20ab | 0.07±0.01e |
| 2 | 0.34±0.06f | 3.99±0.26ab | 0.09±0.02de |
| 4 | 0.36±0.04ef | 4.15±0.13a | 0.09±0.01de |
| 6 | 0.32±0.02f | 4.11±0.19a | 0.08±0.01e |
| 8 | 0.35±0.03ef | 3.88±0.20ab | 0.09±0.01de |
| 10 | 0.40±0.07ef | 3.87±0.19ab | 0.10±0.01cde |
| 12 | 0.37±0.07ef | 3.94±0.18ab | 0.09±0.02de |
| 14 | 0.48±0.11def | 4.03±0.22a | 0.12±0.03bcde |
| 16 | 0.54±0.11cdef | 3.93±0.14ab | 0.14±0.03bcde |
| 18  20 | 0.57±0.10cdef  0.79±0.20bc | 4.06±0.27a  3.96±0.22ab | 0.14±0.03bcde |
| 0.20±0.06b |
| 22 | 0.72±0.29cd | 3.95±0.16ab | 0.18±0.07bc |
| 24 | 1.05±0.39b | 3.65±0.26b | 0.29±0.12a |
| 26 | 0.65±0.21cde | 3.88±0.21ab | 0.17±0.05bcd |
| 28 | 1.38±0.35a | 3.98±0.21ab | 0.35±0.10a |
| 30 | 1.40±0.30a | 3.91±0.32ab | 0.36±0.09a |

**Table S3.** Changes in embryo length, seed length, embryo length : seed length ratio at 2-week intervals as seeds of *Ilex rotunda* from tropical Taiwan were incubated at 30/20°C. Means (*n* = 10) ± SE within a column followed by different letters differ significantly (Sidak test, α = 0.05)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Species | Incubation time  (weeks) | Embryo length (E)  (mm) | Seed length (S)  (mm) | E:S ratio |
| *Ilex rotunda* (south-tropical)  30/20°C | 0 | 0.27±0.04c | 4.45±0.19ab | 0.06±0.01c |
| 2 | 0.30±0.04c | 4.44±0.29ab | 0.07±0.01c |
| 4 | 0.33±0.03c | 4.68±0.19a | 0.07±0.01c |
| 6 | 0.34±0.05c | 4.42±0.17ab | 0.08±0.01c |
| 8 | 0.34±0.06c | 4.66±0.16a | 0.07±0.02c |
| 10 | 0.54±0.26c | 4.59±0.17ab | 0.12±0.06c |
| 12 | 0.94±0.51b | 4.24±0.46b | 0.22±0.11b |
| 14 | 1.10±0.48b | 4.49±0.36ab | 0.25±0.11b |
| 16 | 2.17±0.33a | 4.49±0.46ab | 0.48±0.09a |