**Table S1:** Correspondence between the T50g (expressed in days) and the estimated E:E ratio on this date for the two treatments (2.5 and 5 °C) that resulted in the highest germination.

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Population | 2.5 °C | 5°C | Population | 2.5°C | 5°C | Population | 2.5 °C | 5°C |
|  |  |  |  |  |  |  |  |  |  |
| T50g | HER | 123 | 126 | SCO | 133 | 150 | LEO | 115 | 116 |
| R2 Boltzmann | 0.99 | 0.97 | 0.99 | 0.99 | 0.99 | 0.95 |
| E:E at T50g | 0.89 | 0.87 | 0.87 | 0.88 | 0.91 | 0.89 |
|  |  |  |  |  |  |  |  |  |  |
| T50g | BER | 123 | 125 | WAK | 131 | 140 | CHO | 117 | 124 |
| R2 Boltzmann | 0.99 | 0.99 | 0.98 | 0.98 | 0.99 | 0.99 |
| E:E at T50g | 0.91 | 0.90 | 0.85 | 0.87 | 0.93 | 0.93 |
|  |  |  |  |  |  |  |  |  |  |
| T50 g | FLE | 147 | 132 | BAS | 111 | 118 | TRE | 127 | 133 |
| R2 Boltzmann | 0.99 | 0.99 | 0.98 | 0.99 | 0.94 | 0.97 |
| E:E at T50g | 0.90 | 0.88 | 0.90 | 0.88 | 0.92 | 0.92 |

**Table S2:** R2 of the linear models fitted to the relationship between E:E ratio and Ɵ or log Ɵ for the suboptimal and supraoptimal regressions across the deciles from 0.2 to 0.9 E:E.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Population | ƟTb | log ƟTb | ƟTc | log ƟTc |
| HER | 0.92 | 0.94 | 0.95 | 0.99 |
| BER | 0.99 | 0.99 | 0.90 | 0.98 |
| FLE | 0.96 | 0.99 | 0.96 | 0.99 |
| SCO | 0.95 | 0.99 | 0.94 | 0.99 |
| WAK | 0.97 | 0.98 | 0.93 | 0.98 |
| BAS | 0.95 | 0.99 | 0.95 | 0.99 |
| LEO | 0.94 | 0.99 | 0.93 | 0.99 |
| CHO | 0.97 | 0.95 | 0.97 | 0.93 |
| TRE | 0.96 | 0.98 | 0.94 | 0.97 |

**Table S3:** Time, in days, estimated to reach different deciles of embryo growth in the two field locations for buried seeds of *Conopodium majus*.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | Norway (start 15th September 2016) | | |  | England (start 1st September 2016) | | |
|  |  |  |  |  |  |  |  |
| E:E ratio | BER | WAK | CHO |  | BER | WAK | CHO |
|  |  |  |  |  |  |  |  |
| 0.2 | 63 | 43 | 10 |  | 82 | 79 | 37 |
| 0.3 | 70 | 53 | 28 |  | 95 | 92 | 66 |
| 0.4 | 76 | 61 | 38 |  | 106 | 101 | 79 |
| 0.5 | 81 | 69 | 48 |  | 115 | 109 | 90 |
| 0.6 | 85 | 78 | 59 |  | 125 | 118 | 100 |
| 0.7 | 91 | 88 | 72 |  | 137 | 128 | 112 |
| 0.8 | 98 | 101 | 91 |  | 151 | 141 | 128 |
| 0.9 | 109 | 126 | 128 |  | 176 | 162 | 155 |