**Table S1.** Summary of the analysis of deviance (GLM) for the effects of incubation temperature (*Temp*), light regime (*Light*), and origin population (*Pop*) on the germination probability. Results of GLMM analysis considering *Temp* and *Light* as fixed factors and *Pop* as the random factor are also presented. Degrees of freedom (*df*), deviance (for GLM), chi-square (for GLMM), and significance (*P* value) are given. Significant *P* values at α = 0.05 level are given in bold.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  |  | GLM | |  | GLMM | |
| Factor | df | Deviance | P |  | χ2 | P |
| Temp | 9 | 1488.7 | **< 0.0001** |  | 1464.1 | **< 0.0001** |
| Light | 1 | 742.6 | **< 0.0001** |  | 776.5 | **< 0.0001** |
| Pop | 2 | 169.0 | **< 0.0001** |  | - |  |
| Temp × Light | 19 | 2686.8 | **< 0.0001** |  | 825.5 | **< 0.0001** |
| Temp × Pop | 29 | 1704.3 | **< 0.0001** |  | - | - |
| Light × Pop | 5 | 954.3 | **< 0.0001** |  | - | - |
| Temp × Light × Pop | 59 | 3019.9 | **< 0.0001** |  | - | - |
| Residual | 239 | 3265.8 |  |  |  |  |

**Table S2.** Results of the analysis of deviance for the difference in germination probability between light regimes (dark vs. light) under different incubation temperatures (*Temp*) in different populations (degrees of freedom are 1). Results of overall GLMM analysis (*Overall*) considering temperature and population as the fixed and random factors, respectively, are also presented. Deviance (*Dev.*; for GLM), chi-square values (for GLMM), and significance (*P* value) are given. Significant *P* values at α = 0.05 level are given in bold.

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | P1 | |  | P2 | |  | P3 | |  | Overall | |
| Temp | Dev. | P |  | Dev. | P |  | Dev. | P |  | χ2 | P |
| 5 | 35.2 | **< 0.0001** |  | 69.6 | **< 0.0001** |  | 55.8 | **< 0.0001** |  | 163.9 | **< 0.0001** |
| 10 | 31.0 | **< 0.0001** |  | 48.7 | **< 0.0001** |  | 50.4 | **< 0.0001** |  | 128.3 | **< 0.0001** |
| 15 | 5.1 | **0.023** |  | 0.1 | 0.700 |  | 6.6 | **0.010** |  | 7.2 | **0.007** |
| 20 | 55.4 | **< 0.0001** |  | 126.9 | **< 0.0001** |  | 97.3 | **< 0.0001** |  | 273.9 | **< 0.0001** |
| 25 | 20.5 | **< 0.0001** |  | 122.7 | **< 0.0001** |  | 95.4 | **< 0.0001** |  | 223.1 | **< 0.0001** |
| 30 | 0 | 1 |  | 0 | 1 |  | 0 | 1 |  | 0 | 1 |
| 5/15 | 29.6 | **< 0.0001** |  | 1.8 | 0.176 |  | 33.9 | **< 0.0001** |  | 59.1 | **< 0.0001** |
| 10/20 | 46.3 | **< 0.0001** |  | 100.0 | **< 0.0001** |  | 37.4 | **< 0.0001** |  | 176.1 | **< 0.0001** |
| 15/25 | 43.8 | **< 0.0001** |  | 9.4 | **0.004** |  | 42.3 | **< 0.0001** |  | 88.7 | **< 0.0001** |
| 15/30 | 46.8 | **< 0.0001** |  | 78.8 | **< 0.0001** |  | 25.6 | **< 0.0001** |  | 143.5 | **< 0.0001** |

**Table S3.** Results of the analysis of deviance for the difference in germination probability among incubation temperatures under different light regimes (dark and light) in different populations (degrees of freedom are 9). Results of overall GLMM analysis considering light regime and population as the fixed and random factors, respectively, are also presented. Deviance (for GLM), chi-square (for GLMM), and significance (*P* value) are given. Significant *P* values at α = 0.05 level are given in bold.

|  |  |  |  |
| --- | --- | --- | --- |
| Population | Light regime | Deviance | P |
| GLM |  |  |  |
| P1 | Light | 338.8 | **< 0.0001** |
|  | Dark | 205.4 | **< 0.0001** |
|  |  |  |  |
| P2 | Light | 523.7 | **< 0.0001** |
|  | Dark | 507.5 | **< 0.0001** |
|  |  |  |  |
| P3 | Light | 312.4 | **< 0.0001** |
|  | Dark | 177.8 | **< 0.0001** |
|  |  |  |  |
|  | Light regime | χ2 | P |
| GLMM |  |  |  |
|  | Light | 1114.5 | **< 0.0001** |
|  | Dark | 858.5 | **< 0.0001** |

**Table S4.** Pairwise comparisons of germination probability between temperature treatments under light and dark conditions in population 1 (based on results of post-hoc tests for the analysis of deviance). Significant *P* values at α = 0.05 level are given in bold.

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Light | | | |  | Dark | | | |
| contrast | estimate | SE | z ratio | P |  | estimate | SE | z ratio | P |
| (10-20)-(15-25) | -1.387 | 0.37 | -3.766 | **0.0064** |  | -1.606 | 0.50 | -3.23 | **0.0408** |
| (10-20)-(15-30) | -3.133 | 0.75 | -4.183 | **0.0012** |  | -1.679 | 0.60 | -2.952 | 0.0917 |
| (10-20)-(5-15) | -21.064 | 3608.6 | -0.006 | 1 |  | -3.040 | 0.50 | -6.089 | **<.0001** |
| (10-20)-10 | -3.094 | 1.04 | -2.974 | 0.0863 |  | -1.781 | 0.54 | -3.285 | **0.0344** |
| (10-20)-15 | -0.909 | 0.36 | -2.555 | 0.2394 |  | -2.695 | 0.49 | -5.486 | **<.0001** |
| (10-20)-20 | -1.351 | 0.44 | -3.056 | 0.0687 |  | -0.114 | 0.67 | -0.17 | 1 |
| (10-20)-25 | -0.696 | 0.42 | -1.674 | 0.8103 |  | -0.566 | 0.75 | -0.756 | 0.9991 |
| (10-20)-30 | 22.088 | 3564.2 | 0.006 | 1 |  | 19.450 | 3564.2 | 0.005 | 1 |
| (10-20)-5 | 0.983 | 0.38 | 2.593 | 0.2205 |  | 19.450 | 3564.2 | 0.005 | 1 |
| (15-25)-(15-30) | -1.746 | 0.78 | -2.229 | 0.4364 |  | -0.074 | 0.46 | -0.161 | 1 |
| (15-25)-(5-15) | -19.676 | 3608.6 | -0.005 | 1 |  | -1.435 | 0.37 | -3.891 | **0.0040** |
| (15-25)-10 | -1.706 | 1.07 | -1.602 | 0.8475 |  | -0.176 | 0.42 | -0.414 | 1 |
| (15-25)-15 | 0.478 | 0.42 | 1.132 | 0.9815 |  | -1.089 | 0.36 | -3.044 | 0.0709 |
| (15-25)-20 | 0.037 | 0.50 | 0.074 | 1 |  | 1.491 | 0.58 | 2.559 | 0.2374 |
| (15-25)-25 | 0.692 | 0.47 | 1.459 | 0.9082 |  | 1.039 | 0.67 | 1.553 | 0.8705 |
| (15-25)-30 | 23.475 | 3564.2 | 0.007 | 1 |  | 21.056 | 3564.2 | 0.006 | 1 |
| (15-25)-5 | 2.370 | 0.44 | 5.359 | **<.0001** |  | 21.056 | 3564.2 | 0.006 | 1 |
| (15-30)-(5-15) | -17.931 | 3608.6 | -0.005 | 1 |  | -1.361 | 0.46 | -2.952 | 0.0918 |
| (15-30)-10 | 0.039 | 1.25 | 0.031 | 1 |  | -0.102 | 0.51 | -0.201 | 1 |
| (15-30)-15 | 2.224 | 0.78 | 2.862 | 0.1165 |  | -1.015 | 0.45 | -2.245 | 0.4260 |
| (15-30)-20 | 1.782 | 0.82 | 2.173 | 0.4757 |  | 1.565 | 0.64 | 2.426 | 0.3102 |
| (15-30)-25 | 2.437 | 0.81 | 3.023 | 0.0755 |  | 1.113 | 0.72 | 1.537 | 0.8775 |
| (15-30)-30 | 25.220 | 3564.2 | 0.007 | 1 |  | 21.130 | 3564.2 | 0.006 | 1 |
| (15-30)-5 | 4.116 | 0.79 | 5.223 | **<.0001** |  | 21.130 | 3564.2 | 0.006 | 1 |
| (5-15)-10 | 17.970 | 3608.6 | 0.005 | 1 |  | 1.259 | 0.43 | 2.942 | 0.0942 |
| (5-15)-15 | 20.155 | 3608.6 | 0.006 | 1 |  | 0.346 | 0.36 | 0.958 | 0.9944 |
| (5-15)-20 | 19.713 | 3608.6 | 0.005 | 1 |  | 2.926 | 0.58 | 5.004 | **<.0001** |
| (5-15)-25 | 20.368 | 3608.6 | 0.006 | 1 |  | 2.474 | 0.67 | 3.688 | **0.0086** |
| (5-15)-30 | 43.151 | 5072.1 | 0.009 | 1 |  | 22.491 | 3564.2 | 0.006 | 1 |
| (5-15)-5 | 22.046 | 3608.6 | 0.006 | 1 |  | 22.491 | 3564.2 | 0.006 | 1 |
| 10-15 | 2.185 | 1.06 | 2.06 | 0.5560 |  | -0.913 | 0.42 | -2.183 | 0.4689 |
| 10-20 | 1.743 | 1.09 | 1.595 | 0.8509 |  | 1.667 | 0.62 | 2.681 | 0.1814 |
| 10-25 | 2.398 | 1.08 | 2.216 | 0.4456 |  | 1.215 | 0.70 | 1.727 | 0.7802 |
| 10-30 | 25.182 | 3564.2 | 0.007 | 1 |  | 21.232 | 3564.2 | 0.006 | 1 |
| 10-5 | 4.076 | 1.07 | 3.815 | **0.0053** |  | 21.232 | 3564.2 | 0.006 | 1 |
| 15-20 | -0.442 | 0.49 | -0.905 | 0.9964 |  | 2.580 | 0.58 | 4.466 | **0.0003** |
| 15-25 | 0.213 | 0.46 | 0.459 | 1 |  | 2.128 | 0.66 | 3.201 | **0.0446** |
| 15-30 | 22.997 | 3564.2 | 0.006 | 1 |  | 22.145 | 3564.2 | 0.006 | 1 |
| 15-5 | 1.892 | 0.43 | 4.381 | **0.0005** |  | 22.145 | 3564.2 | 0.006 | 1 |
| 20-25 | 0.655 | 0.53 | 1.228 | 0.9681 |  | -0.452 | 0.81 | -0.559 | 0.9999 |
| 20-30 | 23.438 | 3564.2 | 0.007 | 1 |  | 19.565 | 3564.2 | 0.005 | 1 |
| 20-5 | 2.333 | 0.50 | 4.618 | **0.0002** |  | 19.565 | 3564.2 | 0.005 | 1 |
| 25-30 | 22.784 | 3564.2 | 0.006 | 1 |  | 20.017 | 3564.2 | 0.006 | 1 |
| 25-5 | 1.678 | 0.48 | 3.480 | **0.0180** |  | 20.017 | 3564.2 | 0.006 | 1 |
| 30-5 | -21.105 | 3564.2 | -0.006 | 1 |  | 0 | 5040.6 | 0 | 1 |

**Table S5.** Pairwise comparisons of germination probability between temperature treatments under light and dark conditions in population 2 (based on results of post-hoc tests for the analysis of deviance). Significant *P* values at α = 0.05 level are given in bold.

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Light | | | |  | Dark | | | |
| contrast | estimate | SE | z ratio | P |  | estimate | SE | z ratio | P |
| (10-20)-(15-25) | 0.565 | 0.58 | 0.979 | 0.9935 |  | -2.078 | 0.33 | -6.366 | **<.0001** |
| (10-20)-(15-30) | 0.303 | 0.60 | 0.501 | 1 |  | -0.209 | 0.33 | -0.64 | 0.9998 |
| (10-20)-(5-15) | -0.858 | 0.85 | -1.009 | 0.9918 |  | -3.612 | 0.48 | -7.537 | **<.0001** |
| (10-20)-10 | -1.489 | 1.12 | -1.346 | 0.9430 |  | -1.271 | 0.31 | -4.087 | **0.0018** |
| (10-20)-15 | 1.150 | 0.54 | 2.116 | 0.5163 |  | -2.816 | 0.37 | -7.52 | **<.0001** |
| (10-20)-20 | -0.928 | 0.85 | -1.091 | 0.9857 |  | 0.217 | 0.33 | 0.657 | 0.9997 |
| (10-20)-25 | -0.972 | 0.85 | -1.143 | 0.9802 |  | 0.131 | 0.33 | 0.395 | 1 |
| (10-20)-30 | 23.830 | 2161.8 | 0.011 | 1 |  | 21.024 | 3564.2 | 0.006 | 1 |
| (10-20)-5 | 3.122 | 0.51 | 6.146 | **<.0001** |  | 21.024 | 3564.2 | 0.006 | 1 |
| (15-25)-(15-30) | -0.262 | 0.52 | -0.499 | 1 |  | 1.869 | 0.33 | 5.638 | **<.0001** |
| (15-25)-(5-15) | -1.423 | 0.80 | -1.787 | 0.7438 |  | -1.535 | 0.48 | -3.178 | **0.0478** |
| (15-25)-10 | -2.054 | 1.06 | -1.928 | 0.6498 |  | 0.807 | 0.32 | 2.549 | 0.2426 |
| (15-25)-15 | 0.585 | 0.45 | 1.287 | 0.9567 |  | -0.738 | 0.38 | -1.948 | 0.6361 |
| (15-25)-20 | -1.493 | 0.80 | -1.876 | 0.6857 |  | 2.294 | 0.34 | 6.85 | **<.0001** |
| (15-25)-25 | -1.537 | 0.80 | -1.932 | 0.6472 |  | 2.209 | 0.34 | 6.559 | **<.0001** |
| (15-25)-30 | 23.265 | 2161.8 | 0.011 | 1 |  | 23.102 | 3564.2 | 0.006 | 1 |
| (15-25)-5 | 2.557 | 0.41 | 6.221 | **<.0001** |  | 23.102 | 3564.2 | 0.006 | 1 |
| (15-30)-(5-15) | -1.161 | 0.82 | -1.422 | 0.9206 |  | -3.404 | 0.48 | -7.05 | **<.0001** |
| (15-30)-10 | -1.792 | 1.08 | -1.659 | 0.8186 |  | -1.062 | 0.32 | -3.358 | **0.0272** |
| (15-30)-15 | 0.847 | 0.49 | 1.736 | 0.7747 |  | -2.607 | 0.38 | -6.881 | **<.0001** |
| (15-30)-20 | -1.230 | 0.82 | -1.509 | 0.8891 |  | 0.425 | 0.34 | 1.271 | 0.9601 |
| (15-30)-25 | -1.274 | 0.82 | -1.563 | 0.8658 |  | 0.340 | 0.34 | 1.009 | 0.9918 |
| (15-30)-30 | 23.528 | 2161.8 | 0.011 | 1 |  | 21.233 | 3564.2 | 0.006 | 1 |
| (15-30)-5 | 2.819 | 0.45 | 6.295 | **<.0001** |  | 21.233 | 3564.2 | 0.006 | 1 |
| (5-15)-10 | -0.631 | 1.24 | -0.511 | 1 |  | 2.341 | 0.47 | 4.954 | **<.0001** |
| (5-15)-15 | 2.008 | 0.77 | 2.6 | 0.2172 |  | 0.796 | 0.52 | 1.542 | 0.8754 |
| (5-15)-20 | -0.070 | 1.01 | -0.069 | 1 |  | 3.829 | 0.48 | 7.893 | **<.0001** |
| (5-15)-25 | -0.114 | 1.01 | -0.112 | 1 |  | 3.743 | 0.49 | 7.696 | **<.0001** |
| (5-15)-30 | 24.688 | 2161.8 | 0.011 | 1 |  | 24.637 | 3564.2 | 0.007 | 1 |
| (5-15)-5 | 3.980 | 0.75 | 5.324 | **<.0001** |  | 24.637 | 3564.2 | 0.007 | 1 |
| 10-15 | 2.639 | 1.05 | 2.52 | 0.2577 |  | -1.545 | 0.37 | -4.223 | **0.0010** |
| 10-20 | 0.561 | 1.23 | 0.455 | 1 |  | 1.488 | 0.32 | 4.65 | **0.0001** |
| 10-25 | 0.517 | 1.23 | 0.419 | 1 |  | 1.402 | 0.32 | 4.356 | **0.0006** |
| 10-30 | 25.319 | 2161.8 | 0.012 | 1 |  | 22.295 | 3564.2 | 0.006 | 1 |
| 10-5 | 4.611 | 1.03 | 4.480 | **0.0003** |  | 22.295 | 3564.2 | 0.006 | 1 |
| 15-20 | -2.078 | 0.77 | -2.693 | 0.1764 |  | 3.033 | 0.38 | 7.941 | **<.0001** |
| 15-25 | -2.122 | 0.77 | -2.751 | 0.1537 |  | 2.947 | 0.38 | 7.684 | **<.0001** |
| 15-30 | 22.680 | 2161.8 | 0.010 | 1 |  | 23.840 | 3564.2 | 0.007 | 1 |
| 15-5 | 1.972 | 0.36 | 5.449 | **<.0001** |  | 23.840 | 3564.2 | 0.007 | 1 |
| 20-25 | -0.044 | 1.01 | -0.043 | 1 |  | -0.086 | 0.34 | -0.252 | 1 |
| 20-30 | 24.758 | 2161.8 | 0.011 | 1 |  | 20.808 | 3564.2 | 0.006 | 1 |
| 20-5 | 4.050 | 0.75 | 5.422 | **<.0001** |  | 20.808 | 3564.2 | 0.006 | 1 |
| 25-30 | 24.802 | 2161.8 | 0.011 | 1 |  | 20.893 | 3564.2 | 0.006 | 1 |
| 25-5 | 4.094 | 0.75 | 5.483 | **<.0001** |  | 20.893 | 3564.2 | 0.006 | 1 |
| 30-5 | -20.708 | 2161.8 | -0.01 | 1 |  | 0 | 5040.6 | 0 | 1 |

**Table S6.** Pairwise comparisons of germination probability between temperature treatments under light and dark conditions in population 3 (based on results of post-hoc tests for the analysis of deviance). Significant *P* values at α = 0.05 level are given in bold.

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Light | | | |  | Dark | | | |
| contrast | estimate | SE | z ratio | P |  | estimate | SE | z ratio | P |
| (10-20)-(15-25) | -0.616 | 0.36 | -1.733 | 0.7770 |  | -0.652 | 0.44 | -1.491 | 0.8961 |
| (10-20)-(15-30) | 0.234 | 0.36 | 0.66 | 0.9997 |  | -0.067 | 0.48 | -0.14 | 1 |
| (10-20)-(5-15) | -2.042 | 0.76 | -2.69 | 0.1775 |  | -1.141 | 0.43 | -2.651 | 0.1942 |
| (10-20)-10 | -1.459 | 0.52 | -2.813 | 0.1320 |  | -0.421 | 0.48 | -0.877 | 0.9971 |
| (10-20)-15 | -0.014 | 0.36 | -0.04 | 1 |  | -1.379 | 0.43 | -3.182 | **0.0473** |
| (10-20)-20 | -1.020 | 0.49 | -2.076 | 0.5443 |  | 2.666 | 1.07 | 2.496 | 0.2704 |
| (10-20)-25 | -1.178 | 0.49 | -2.415 | 0.3165 |  | 19.717 | 3623.5 | 0.005 | 1 |
| (10-20)-30 | 21.864 | 2161.8 | 0.01 | 1 |  | 20.552 | 3564.2 | 0.006 | 1 |
| (10-20)-5 | 1.294 | 0.34 | 3.779 | **0.0061** |  | 20.552 | 3564.2 | 0.006 | 1 |
| (15-25)-(15-30) | 0.850 | 0.39 | 2.181 | 0.4696 |  | 0.585 | 0.41 | 1.41 | 0.9244 |
| (15-25)-(5-15) | -1.427 | 0.78 | -1.838 | 0.7110 |  | -0.489 | 0.36 | -1.369 | 0.9367 |
| (15-25)-10 | -0.843 | 0.54 | -1.552 | 0.8709 |  | 0.231 | 0.42 | 0.557 | 0.9999 |
| (15-25)-15 | 0.602 | 0.39 | 1.533 | 0.8791 |  | -0.727 | 0.36 | -2.015 | 0.5880 |
| (15-25)-20 | -0.404 | 0.52 | -0.781 | 0.9988 |  | 3.318 | 1.04 | 3.188 | **0.0465** |
| (15-25)-25 | -0.562 | 0.51 | -1.094 | 0.9854 |  | 20.369 | 3623.5 | 0.006 | 1 |
| (15-25)-30 | 22.480 | 2161.8 | 0.01 | 1 |  | 21.204 | 3564.2 | 0.006 | 1 |
| (15-25)-5 | 1.910 | 0.39 | 5.047 | **<.0001** |  | 21.204 | 3564.2 | 0.006 | 1 |
| (15-30)-(5-15) | -2.277 | 0.78 | -2.934 | 0.0962 |  | -1.073 | 0.41 | -2.636 | 0.2009 |
| (15-30)-10 | -1.693 | 0.54 | -3.12 | 0.0570 |  | -0.353 | 0.46 | -0.77 | 0.9990 |
| (15-30)-15 | -0.248 | 0.39 | -0.634 | 0.9998 |  | -1.312 | 0.41 | -3.195 | **0.0454** |
| (15-30)-20 | -1.254 | 0.52 | -2.428 | 0.3088 |  | 2.734 | 1.06 | 2.581 | 0.2266 |
| (15-30)-25 | -1.412 | 0.51 | -2.752 | 0.1533 |  | 19.784 | 3623.5 | 0.005 | 1 |
| (15-30)-30 | 21.630 | 2161.8 | 0.01 | 1 |  | 20.619 | 3564.2 | 0.006 | 1 |
| (15-30)-5 | 1.060 | 0.38 | 2.806 | 0.1342 |  | 20.619 | 3564.2 | 0.006 | 1 |
| (5-15)-10 | 0.584 | 0.86 | 0.676 | 0.9996 |  | 0.720 | 0.41 | 1.766 | 0.7569 |
| (5-15)-15 | 2.028 | 0.78 | 2.609 | 0.2129 |  | -0.238 | 0.35 | -0.677 | 0.9996 |
| (5-15)-20 | 1.023 | 0.85 | 1.207 | 0.9714 |  | 3.807 | 1.04 | 3.667 | **0.0093** |
| (5-15)-25 | 0.865 | 0.84 | 1.024 | 0.9909 |  | 20.858 | 3623.5 | 0.006 | 1 |
| (5-15)-30 | 23.907 | 2161.8 | 0.011 | 1 |  | 21.692 | 3564.2 | 0.006 | 1 |
| (5-15)-5 | 3.336 | 0.77 | 4.331 | **0.0006** |  | 21.692 | 3564.2 | 0.006 | 1 |
| 10-15 | 1.445 | 0.54 | 2.652 | 0.1935 |  | -0.959 | 0.41 | -2.332 | 0.3681 |
| 10-20 | 0.439 | 0.64 | 0.686 | 0.9996 |  | 3.087 | 1.06 | 2.914 | 0.1016 |
| 10-25 | 0.281 | 0.64 | 0.441 | 1 |  | 20.138 | 3623.5 | 0.006 | 1 |
| 10-30 | 23.323 | 2161.8 | 0.011 | 1 |  | 20.972 | 3564.2 | 0.006 | 1 |
| 10-5 | 2.753 | 0.54 | 5.149 | **<.0001** |  | 20.972 | 3564.2 | 0.006 | 1 |
| 15-20 | -1.006 | 0.52 | -1.939 | 0.6419 |  | 4.046 | 1.04 | 3.892 | **0.0039** |
| 15-25 | -1.163 | 0.52 | -2.258 | 0.4166 |  | 21.096 | 3623.5 | 0.006 | 1 |
| 15-30 | 21.879 | 2161.8 | 0.01 | 1 |  | 21.931 | 3564.2 | 0.006 | 1 |
| 15-5 | 1.308 | 0.38 | 3.438 | **0.0208** |  | 21.931 | 3564.2 | 0.006 | 1 |
| 20-25 | -0.158 | 0.62 | -0.256 | 1 |  | 17.050 | 3623.5 | 0.005 | 1 |
| 20-30 | 22.884 | 2161.8 | 0.011 | 1 |  | 17.885 | 3564.2 | 0.005 | 1 |
| 20-5 | 2.314 | 0.51 | 4.555 | **0.0002** |  | 17.885 | 3564.2 | 0.005 | 1 |
| 25-30 | 23.042 | 2161.8 | 0.011 | 1 |  | 0.834 | 5082.7 | 0 | 1 |
| 25-5 | 2.472 | 0.50 | 4.899 | **<.0001** |  | 0.834 | 5082.7 | 0 | 1 |
| 30-5 | -20.570 | 2161.8 | -0.01 | 1 |  | 0 | 5040.6 | 0 | 1 |

**Table S7.** Summary of the analysis of variance for the effects of incubation temperature (*Temp*) and origin population (*Pop*) on the relative light germination (RLG). Degrees of freedom (*df*), the sum of squares (*SS*), *F* value, and significance (*P* value) are given. Significant *P* values at α = 0.05 level are given in bold.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Factor | Df | SS | F | P |
| Temp | 9 | 8.5 | 139.6 | **< 0.0001** |
| Pop | 2 | 0.2 | 14.6 | **< 0.0001** |
| Temp × Pop | 18 | 0.2 | 1.6 | 0.083 |
| Residual | 90 | 0.6 |  |  |

**Table S8.** Summary of the analysis of variance for the effects of incubation temperature (*Temp*), light regime (*Light*), and origin population (*Pop*) on the germination rate (1/t30). Degrees of freedom (*df*), the sum of squares (*SS*), *F* value, and significance (*P* value) are given. Significant *P* values at α = 0.05 level are given in bold.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Factor | df | SS | F | P |
| Temp | 8 | 204958 | 191.7 | **< 0.0001** |
| Light | 1 | 38425 | 287.6 | **< 0.0001** |
| Pop | 2 | 20045 | 75.0 | **< 0.0001** |
| Temp × Light | 7 | 23516 | 25.1 | **< 0.0001** |
| Temp × Pop | 16 | 8653 | 4.0 | **< 0.0001** |
| Light × Pop | 2 | 521 | 2.0 | 0.147 |
| Temp × Light × Pop | 10 | 5672 | 4.2 | **< 0.0001** |
| Residual | 109 | 14565 |  |  |

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**Fig. S1.** Cumulative germination (%) versus time (days) graphs at constant (5, 10, 15, 20, and 25°C) and alternating (5/15, 10/20, 15/25, and 15/30°C) incubation temperatures under light and dark conditions in different *L*. *stoechas* populations (P1, P2, and P3). Curves are logistic models fitted (R2 > 0.98) to each germination versus time data. Data points and germination curves were not shown when no additional germination occurs for seven consecutive days in any treatment at the end of the experiment.