**Table S1.** The results of fitting models; viability equation (Ellis and Roberts, 1980) with/without the mortality parameter (Mead and Grey, 1999) or the combined loss in dormancy and loss in viability (Kebreab and Murdoch, 1999) to quantify changes in ability to germinate during hermetic storage at 45°C and 60% relative humidity for accession 76080. Seeds grown in each of the four regeneration environments (glasshouse, big igloo, green igloo and cage) were harvested at different stages during development, between 21 and 130 days after 50% anthesis (DAA) before being dried to equilibrium in a dryroom maintained at 15°C and 15% relative humidity. The parameters shown are for the simplest model (fewest parameters) that could be fitted without a significant increase in the residual deviance compared to the best-fit model (*P*>0.05). The estimated moisture content (eMC) was determined, from the equilibrium relative humidity (eRH) status of the seeds, and using Cromarty’s equation executed in the Seed Information Database (Royal Botanic Gardens Kew, 2021).

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  |  |  | **Loss in dormancy** | **Loss in viability** |  |
| **Maturity** | **Model** | **eMC** | ***K*d (s.e.)** | ***Β*1 (s.e.)** | ***K*i (s.e.)** | **σ-1 (s.e.)** | ***p*50** |
| **(DAA)** |  | **(%)** | **(NED)** | **(days)** | **(NED)** | **(days)** | **(days)** |
|  |  |  |  |  |  |  |  |
| **Glasshouse** |
| 70 | *K*d, *Β*1, *K*i, σ-1 constrained within 70, 84, 91, 105 and 130 DAA& *K*i, σ-1 constrained within 112 and 124DAA | 13.5 | 1.442 (0.192) | 0.091 (0.051) | 2.368 (0.194) | 0.011 (0.002) | 213.8 |
| 84 | 12.9 | 1.442 (0.192) | 0.091 (0.051) | 2.368 (0.194) | 0.011 (0.002) | 213.8 |
| 91 | 13.2 | 1.442 (0.192) | 0.091 (0.051) | 2.368 (0.194) | 0.011 (0.002) | 213.8 |
| 105 | 13.1 | 1.442 (0.192) | 0.091 (0.051) | 2.368 (0.194) | 0.011 (0.002) | 213.8 |
| 112 | 13.2 | - | - | 3.028 (0.214) | 0.028 (0.003) | 108.7 |
| 124 | 13.2 | - | - | 3.028 (0.214) | 0.028 (0.003) | 108.7 |
| 130 | 13.2 | 1.442 (0.192) | 0.091 (0.051) | 2.368 (0.194) | 0.011 (0.002) | 213.8 |
| **Big igloo** |
| 63 | *K*d, *Β*1, *K*i, σ-1 constrained within 63 and 70DAA& *K*i, σ-1 constrained within 84, 91, 105, 112, 124 and 130DAA | 12.9 | 1.340 (0.182) | 0.132 (0.055) | 3.200 (0.354) | 0.018 (0.003) | 178.5 |
| 70 | 13 | 1.340 (0.182) | 0.132 (0.055) | 3.200 (0.354) | 0.018 (0.003) | 178.5 |
| 84 | 13 | - | - | 2.588 (0.104) | 0.011 (0.001) | 234.3 |
| 91 | 12.7 | - | - | 2.588 (0.104 | 0.011 (0.001) | 234.3 |
| 105 | 13.2 | - | - | 2.588 (0.104 | 0.011 (0.001) | 234.3 |
| 112 | 12.8 | - | - | 2.588 (0.104 | 0.011 (0.001) | 234.3 |
| 124 | 12.9 | - | - | 2.588 (0.104 | 0.011 (0.001) | 234.3 |
| 130 | 12.9 | - | - | 2.588 (0.104 | 0.011 (0.001) | 234.3 |
| **Green igloo** |
| 63 | *K*i, σ-1 constrained within 63 and 70DAA &*K*i, σ-1 constrained within 84 and 91DAA&*K*i, σ-1 constrained within 105 and 112DAA | 13 | - | - | 1.917 (0.114) | 0.012 (0.002) | 161.5 |
| 70 | 13 | - | - | 1.917 (0.114) | 0.012 (0.002) | 161.5 |
| 84 | 12.9 | - | - | 1.844 (0.117) | 0.004 (0.002) | 427.6 |
| 91 | 12.9 | - | - | 1.844 (0.117) | 0.004 (0.002) | 427.6 |
| 105 | 12.9 | - | - | 3.880 (0.559)\* | 0.033 (0.005) | 117.1 |
| 112 | 12.9 | - | - | 3.880 (0.559)\* | 0.033 (0.005) | 117.1 |
| 118 | 13.1 | - | - | 1.432 (0.123) | 0.006 (0.002) | 249.8 |
| **Cage** |
| 63 | *K*i, σ-1 constrained within 63, 70, 85 and 112DAA | 13.2 | - | - | 2.263 (0.130) | 0.006 (0.002) | 405.1 |
| 70 | 13 | - | - | 2.263 (0.130) | 0.006 (0.002) | 405.1 |
| 84 | 12.9 | - | - | 2.263 (0.130) | 0.006 (0.002) | 405.1 |
| 91 | 12.8 | - | - | 1.980 (0.173) | 0.013 (0.003) | 149.7 |
| 105 | 12.8 | - | - | 1.399 (0.147) | 0.031 (0.004) | 44.8 |
| 112 | 13.3 | - | - | 2.263 (0.130) | 0.006 (0.002) | 405.1 |
|  |  |  |  |  |  |  |  |

\* Immunity value generated by GenStat was 0.0505 (0.0095) for seed lots 105 and 112DAA grown in the green igloo.