Table S1. Mean monthly temperature (ºC) for the different experimental sites. Mean temperature during the emergence period from September to April is also provided. COR, Córdoba; LLE, Lleida; MAD, Madrid; BAR, Barcelona; FTS, Sevilla FTS; GAR, Sevilla Garden; 2H, Sevilla 2H; ETSIA, Sevilla ETSIA; TOL, Toledo, VLL, Valladolid; ZAR, Zaragoza.

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|  | COR | LLE | MAD | BAR | FTS | GAR | 2H | ETSIA | TOL | VLL | ZAR |
| Sep 16 | 24.9 | 22.9 | 22.1 | 23.5 | 24.9 | 25.2 | 31.1 | 31.1 | 23.9 | 20.1 | 23.3 |
| Oct 16 | 20.4 | 17.0 | 16.4 | 18.9 | 20.5 | 20.8 | 23.9 | 23.9 | 18.0 | 14.7 | 16.9 |
| Nov 16 | 13.2 | 9.8 | 8.9 | 14.3 | 13.4 | 13.9 | 15.4 | 15.4 | 10.3 | 7.4 | 10.4 |
| Dec 16 | 11.4 | 4.9 | 7.5 | 11.3 | 11.8 | 12.4 | 12.5 | 12.5 | 8.6 | 5.1 | 6.2 |
| Jan 17 | 8.7 | 4.4 | 4.8 | 8.9 | 9.4 | 9.5 | 10.2 | 10.2 | 6.7 | 4.1 | 6.5 |
| Feb 17 | 12.2 | 9.3 | 8.5 | 12.5 | 12.7 | 13.1 | 13.9 | 13.9 | 9.6 | 8.0 | 10.2 |
| Mar 17 | 13.8 | 12.6 | 10.9 | 13.7 | 14.6 | 15.1 | 17.8 | 17.8 | 11.8 | 10.4 | 13.7 |
| April 17 | 16.8 | 15.1 | 14.8 | 14.8 | 18.3 | 19.3 | 25.0 | 25.0 | 16.4 | 13.5 | 15.4 |
| Mean 16-17 | 15.2 | 12.0 | 11.8 | 14.7 | 15.7 | 16.2 | 18.7 | 18.7 | 13.2 | 10.4 | 12.8 |
| Sep 17 | 23.9 | 19.9 | 20.8 | 21.7 | 24.3 | 24.5 | 31.1 | 31.1 | 22.8 | 18.7 | 20.1 |
| Oct 17 | 21.9 | 17.8 | 17.6 | 19.9 | 22.6 | 22.8 | 26.2 | 26.2 | 20.2 | 16.6 | 18.6 |
| Nov 17 | 13.4 | 9.0 | 9.4 | 13.3 | 14.4 | 14.4 | 15.8 | 15.8 | 11.3 | 7.8 | 10.5 |
| Dec 17 | 8.8 | 4.0 | 6.1 | 9.8 | 10.4 | 10.5 | 10.2 | 10.2 | 7.3 | 4.8 | 7.2 |
| Jan 18 | 9.1 | 7.9 | 6.8 | 12.2 | 10.1 | 10.6 | 11.1 | 11.1 | 7.5 | 5.2 | 8.7 |
| Feb 18 | 9.0 | 5.9 | 5.5 | 8.5 | 10.0 | 10.6 | 13.4 | 13.4 | 6.8 | 4.5 | 6.8 |
| Mar 18 | 11.9 | 10.5 | 8.6 | 12.3 | 13.1 | 13.2 | 15.1 | 15.1 | 8.8 | 7.3 | 10.9 |
| April 18 | 15.7 | 14.7 | 12.5 | 16.0 | 15.9 | 16.1 | 19.3 | 19.3 | 13.0 | 11.9 | 14.8 |
| Mean 17-18 | 14.2 | 11.2 | 10.9 | 14.2 | 15.1 | 15.3 | 17.8 | 17.8 | 12.2 | 9.6 | 12.2 |

**Table S2.** Total monthly precipitation (mm) for the different experimental sites. Total precipitation during the emergence period from September to April is also provided. COR, Córdoba; LLE, Lleida; MAD, Madrid; BAR, Barcelona; FTS, Sevilla FTS; GAR, Sevilla Garden; 2H, Sevilla 2H; ETSIA, Sevilla ETSIA; TOL, Toledo, VLL, Valladolid; ZAR, Zaragoza.

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|  | COR | LLE | MAD | BAR | FTS | GAR | 2H | ETSIA | TOL | VLL | ZAR |
| Sep 16 | 3.0 | 11.2 | 6.6 | 4.7 | 14.1 | 11.8 | 11.8 | 11.8 | 3.4 | 9.8 | 3.2 |
| Oct 16 | 84.0 | 44.4 | 66.7 | 92.3 | 114.6 | 117.9 | 117.9 | 117.9 | 91.4 | 49.4 | 34.6 |
| Nov 16 | 142.2 | 41.0 | 53.0 | 76.8 | 130.5 | 103.3 | 103.3 | 103.3 | 157.6 | 54.2 | 85.0 |
| Dec 16 | 45.0 | 5.2 | 35.0 | 21.8 | 94.3 | 62.8 | 62.8 | 62.8 | 62.4 | 13.4 | 3.0 |
| Jan 17 | 20.0 | 12.4 | 20.2 | 30.0 | 18.9 | 12.0 | 12.0 | 12.0 | 27.0 | 10.2 | 13.2 |
| Feb 17 | 50.8 | 13.0 | 51.0 | 27.6 | 62.0 | 48.7 | 48.7 | 48.7 | 74.4 | 33.2 | 25.0 |
| Mar 17 | 73.6 | 85.4 | 16.7 | 83.3 | 83.2 | 53.0 | 53.0 | 53.0 | 24.2 | 6.4 | 38.0 |
| April 17 | 67.4 | 15.2 | 13.2 | 41.6 | 65.5 | 48.5 | 48.5 | 48.5 | 20.4 | 7.0 | 5.8 |
| Total 16-17 | 486.0 | 227.8 | 262.4 | 378.1 | 583.1 | 458.0 | 458.0 | 458.0 | 460.8 | 183.6 | 207.8 |
| Sep 17 | 0.2 | 14.0 | 0.0 | 60.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 4.2 |
| Oct 17 | 27.4 | 19.8 | 28.7 | 44.3 | 27.9 | 12.9 | 12.9 | 12.9 | 13.8 | 4.6 | 5.0 |
| Nov 17 | 52.4 | 2.0 | 8.9 | 4.9 | 32.5 | 61.8 | 61.8 | 61.8 | 28.4 | 19.2 | 6.2 |
| Dec 17 | 36.0 | 7.6 | 19.9 | 3.0 | 26.4 | 28.1 | 28.1 | 28.1 | 104.0 | 26.6 | 7.8 |
| Jan 18 | 68.2 | 24.6 | 50.0 | 53.9 | 61.5 | 69.9 | 69.9 | 69.9 | 23.2 | 42.4 | 51.8 |
| Feb 18 | 27.6 | 30.2 | 67.2 | 109.9 | 33.9 | 16.3 | 16.3 | 16.3 | 90.0 | 41.4 | 28.4 |
| Mar 18 | 262.4 | 32.4 | 148.3 | 71.3 | 184.4 | 126.8 | 126.8 | 126.8 | 250.6 | 117.6 | 32.4 |
| April 18 | 62.6 | 69.8 | 56.4 | 46.6 | 87.9 | 77.7 | 77.7 | 77.7 | 107.0 | 66.8 | 114.2 |
| Total 17-18 | 536.8 | 200.4 | 379.4 | 394.5 | 454.6 | 393.5 | 393.5 | 393.5 | 617.0 | 318.8 | 250.0 |