**S2 Table. Formulation of climate-dependent parameters in the MPAD model, sourced from Jia et al. [24].**

|  |  |
| --- | --- |
| Parameter | Equation |
| *f*E |  |
| *f*dia |  |
| *f*L |  |
| *f*P |  |
| *m*L |  |
| *m­*p |  |
| *m*A |  |
| *β* |  |
| *f*Ag |  |
| *k*L |  |
| *k*P |  |
| *z*1 |  |
| *z2* |  |
| *z*dia |  |

*Abbreviations*: *T* - daily mean temperature, *PP*norm - rainfall (precipitation, normalized between 0 and 1) over a 2-week period, *T*ave - 7-day averaged daily mean temperature, *SD*ave - 7-day averaged daily sunlight hour (photoperiod), *t*eggBegin - the emergence time of diapause eggs, *t*eggEnd - the time when diapause eggs finish hatching, *t*diaBegin - the onset of diapause period, *t*diaEnd - the ending time of diapause period.