Supplementary materials

Equation 1.

 *CDD =*

Where:

*t* = temperature in degrees C

And:

*x* = upper temperature for chilling effect

 *y =* base temperature for chilling effect

 *N =* number of days

Where *1* is an indicator function that takes a value of 1 when the condition inside the parentheses is met, and a value of zero when this condition is not met. Thus, when the temperature, *t* is within the suitable temperatures to achieve cold treatment ( the *(x - t)* part of the equation turns on and accumulates CDD. When the temperature *t* , is outside this range, the indicator function turns to zero and no cold treatment is accumulated CDD =

Logit expression (Hua et al. 2021)

Equation 2

The logistic regression equation for the probability of flowering is presented in Equation 3 (University of California, Los Angeles, Statistical Consulting Group, 2021).

Equation 3.

 = *y* + *m* . CDD

*P* = probability of flowering

*y* = y intercept

*m* = slope

CDD = chilling degree days

The probability of flowering at different CDD was calculated with Equation 4, using the “Predict” command in Stata.

Equation 4.

*P* = probability of flowering

*exp* = exponential function (value of 2.72)

*a* = intercept

*b* = coefficient or slope (log odds ratio or logit units)

*x = CDD*

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| Table 1. Goodness-of-fit tests for binary logistic regressions for *Alliaria petiolata* vernalization to determine base and maximum temperatures |
| Fitness test |
| Cragg & Huller’s R2 |
| Efron’s R2 |
| McFadden’s R2 |
| Maximum Likelihood R2 |
| McKelvey and Zavoina’s R2 |
| Akaike’s Information Criterion (AIC) |
| Bayesian Information Criterion (BIC) |

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| Table 2. Binary logistic regression equations for flowering in *Alliaria petiolata* rosettes as a function of chilling degree days (CDD). Rosettes were grown from seeds collected from different locations and grown in a common garden in St. Paul, MN. 2019 and 2020. |
| Locations | Logistic regression equation | P value |
| All locations combined |  = -6.530 + 0.096 \* CDD | < 0.001 |
| Minnesota |  = -9.309 + 0.142 \* CDD | < 0.001 |
| Croatia |  = -6.084 + 0.109 \* CDD | < 0.001 |
| Ohio |  = -6.396 + 0.086 \* CDD | < 0.001 |
| Scotland |  = -16.500 + 0.188 \* CDD | 0.005 |
| Arkansas |  = -22.556 + 0.393 \* CDD | 0.031 |