

Package ‘DegreeDayCalc’

May 7, 2026

Type Package

Title Degree-Day Phenology Calculator ('shiny' Application)

Version 0.1.0

Description Provides a 'shiny' application to compute daily and cumulative degree-days from minimum and maximum temperatures using average, single triangle, and single sine methods, with optional upper temperature thresholds. The application maps cumulative thermal accumulation to user-defined developmental stage thresholds and supports exporting tabular and graphical outputs. The degree-day approach follows assumptions described by Higley et al. (1986) <[doi:10.1093/ee/15.5.999](https://doi.org/10.1093/ee/15.5.999)>.

License MIT + file LICENSE

Encoding UTF-8

RoxygenNote 7.3.3

Depends R (>= 4.1)

Imports shiny, DT, ggplot2

Suggests testthat (>= 3.0.0)

Config/testthat/edition 3

URL <https://github.com/almarazkrae-4081/DegreeDayCalc>

BugReports <https://github.com/almarazkrae-4081/DegreeDayCalc/issues>

NeedsCompilation no

Author Victor Manuel Almaraz Valle [aut, cre] (ORCID:
<<https://orcid.org/0000-0002-3673-8002>>),
J. Concepción Rodríguez Maciel [aut],
Gustavo Ramírez Valverde [aut],
Jaime Alfredo Urzua Gutierrez [aut],
Manuel Alejandro Tejada Reyes [aut]

Maintainer Victor Manuel Almaraz Valle <almarazkrae@gmail.com>

Repository CRAN

Date/Publication 2026-02-17 21:40:14 UTC

Contents

DegreeDayCalc	2
degree_days	2

Index	4
--------------	----------

DegreeDayCalc	<i>DegreeDayCalc</i>
---------------	----------------------

Description

Launch the DegreeDayCalc Shiny application for degree-day phenology calculations and visualization of cumulative thermal requirements across life stages.

Usage

```
DegreeDayCalc()
```

Value

Runs a Shiny application in the default browser (or viewer).

Examples

```
if (interactive()) {
  DegreeDayCalc()
}
```

degree_days	<i>Compute degree-days from daily minimum and maximum temperatures</i>
-------------	--

Description

Calculates daily degree-days (thermal units) from Tmin and Tmax using several common methods (average, triangular, sine). Optionally, an upper threshold (Tupper) can be applied in methods supporting it.

Usage

```
degree_days(
  Tmin,
  Tmax,
  Tbase,
  Tupper = NULL,
  method = c("average", "average_cut", "triangle", "triangle_upper", "sine",
             "sine_upper")
)
```

Arguments

Tmin	Daily minimum temperature (°C).
Tmax	Daily maximum temperature (°C).
Tbase	Base (lower developmental threshold) temperature (°C).
Tupper	Optional upper temperature threshold (°C). Required for "triangle_upper" and "sine_upper" methods.
method	Degree-day method. One of "average", "average_cut", "triangle", "triangle_upper", "sine", "sine_upper".

Value

A numeric value (degree-days) rounded to 3 decimals.

Index

[degree_days, 2](#)
[DegreeDayCalc, 2](#)