

Package ‘DegreeDayCalc’

July 2, 2026

Type Package

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

Version 0.1.1

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)>.

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RoxygenNote 7.3.3

Depends R (>= 4.1)

Imports shiny, DT, ggplot2, readxl

Suggests testthat (>= 3.0.0)

Config/testthat/edition 3

NeedsCompilation no

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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>
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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.

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