Package 'ezec'

March 10, 2026

Title Easy Interface to Effective Concentration Calculations

Version 1.0.2

Maintainer Zhian N. Kamvar <zkamvar@gmail.com>

Description Because fungicide resistance is an important phenotypic trait for fungi and oomycetes, it is necessary to have a standardized method of statistically analyzing the Effective Concentration (EC) values. This package is designed for those who are not terribly familiar with R to be able to analyze and plot an entire set of isolates using the 'drc' package.

Depends R (>= 3.2.0)

Imports drc, dplyr

License GPL-3

Encoding UTF-8

URL https://github.com/grunwaldlab/ezec

BugReports https://github.com/grunwaldlab/ezec/issues

LazyData true

Suggests testthat, readxl, knitr, rmarkdown

RoxygenNote 7.3.3

VignetteBuilder knitr

NeedsCompilation no

Author Zhian N. Kamvar [cre, aut],
Niklaus J. Grunwald [ths, ctb]

Repository CRAN

Date/Publication 2026-03-09 23:00:02 UTC

Contents

`dummydata` *dummydata*

Description

dummydata

Usage

```
data(dummydata)
```

Format

a data frame with 96 rows and 7 columns representing two isolates tested for Metalaxyl resistance over 6 concentrations with 8 replicates per concentration. Each rep number were conducted in separate weeks. The First sample is real and the second is fake.

`EC_table` *Function to generate a table of EC values from a data frame of multiple isolates.*

Description

Function to generate a table of EC values from a data frame of multiple isolates.

Usage

```
EC_table(
  x,
  form = NULL,
  model = "LL.3",
  response = c(10, 50, 90),
  idcol = "ID",
  result = "df",
  plot = TRUE,
  ...
)
```

Arguments

`x`	a data frame that has at least the columns listed in the `form` argument (e.g. "response" and "dose", see examples).
`form`	a formula specifying the column names for the response and dose. Defaults to NULL.
`model`	one of 4 options:

- LL.3 = Log Logistic 3 parameter with a lower limit of 0.
- LL.4 = Log Logistic 4 parameter with lower limit estimated.
- W1.4 = Weibul 4 parameter type 1.
- W2.4 = Weibul 4 parameter type 2.

response	a numeric vector specifying what EC values you want to calculate.
idcol	the name of the column that identifies the samples (case sensitive).
result	What result do you want returned? Default is "df" for a data frame of summary values. If you want the models returned, choose "model". If you want the summary output of the model, choose "summary".
plot	if TRUE, a curve will be plotted for each sample.
...	parameters passed on to read.table if x is a file name.

Value

a data frame that contains EC estimates and standard errors in columns and samples in rows.

Author(s)

Zhian N. Kamvar

Examples

```
data(dummydata)
# Using 3 parameter Log-Logistic Model (default)
EC_table(dummydata, form = response ~ dose)

# Using 4 parameter Weibull Model.
EC_table(dummydata, form = response ~ dose, model = "W2.4")

# This function really only needs three columns.
newdat <- dummydata[c("ID", "dose", "response")]
EC_table(newdat, form = response ~ dose)

# We can rename them, too.
colnames(newdat) <- c("identity", "dosage", "growth")
EC_table(newdat, form = growth ~ dosage, idcol = "identity")
```

---

ezec *The* **ezec** *package for easy EC calculation.*

Description

Because fungicide resistance is an important phenotypic trait for fungi and oomycetes, it is necessary to have a standardized method of statistically analyzing the Effective Concentration (EC) values. This package is designed for those who are not terribly familiar with R to be able to analyze and plot an entire set of isolates using the 'drc' package.

Introduction

The package **ezec** is not a revolutionary work. It simply is a wrapper for the **drc** package that makes life a little easier when it comes to calculating a simple EC 50. The main function of the package is `EC_table`. This function will do as it says and automatically produce a table to EC values for each isolate in your sample.

Data format

Data is expected to exist in a table with at least three columns:

- Sample ID
- Dosage
- Response value (Growth)

Any other columns in your data are optional. An example data set is `dummydata`.

Author(s)

Maintainer: Zhian N. Kamvar <zkamvar@gmail.com>

Other contributors:

- Niklaus J. Grunwald <grunwaln@science.oregonstate.edu> [thesis advisor, contributor]

See Also

Useful links:

- https://github.com/grunwaldlab/ezec
- Report bugs at https://github.com/grunwaldlab/ezec/issues

Index