# Package 'EpiLossR'

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**Type** Package

**Title** Economic Loss Estimation for Animal Disease Mortality and Morbidity

**Version** 0.1.0

**Date** 2026-08-01

**Description** Provides standardized tools for estimating direct economic losses associated with mortality and morbidity in animal diseases. The package implements reproducible methods for calculating mortality- and morbidity-related losses using a common S3 object framework with methods for summarization, visualization, and data export. It is intended for veterinary epidemiologists, animal health economists, veterinarians, researchers, and students. The methods are informed by Rushton (2009, ISBN:9781845936934) and Bennett (2003, ISBN:9780851996224).

**License** GPL (>= 3)

**Encoding** UTF-8

**Language** en-US

**ByteCompile** true

**Depends** R (>= 4.2.0)

**Suggests** knitr, rmarkdown, testthat (>= 3.0.0)

**VignetteBuilder** knitr

**Config/testthat/edition** 3

**URL** https://github.com/vinodhpmd/EpiLossR

**BugReports** https://github.com/vinodhpmd/EpiLossR/issues

**Config/roxygen2/version** 8.1.0

**NeedsCompilation** no

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**Repository** CRAN

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`as.data.frame.epi_loss` *Convert epi_loss to data.frame*

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## Description

Convert epi_loss to data.frame

## Usage

```
## S3 method for class 'epi_loss'
as.data.frame(x, ...)
```

## Arguments

| | |
|---|---|
| `x` | epi_loss object. |
| `...` | ignored. |

## Value

data.frame

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`estimate_loss` *Estimate Economic Loss Due to Animal Diseases*

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## Description

A unified interface for estimating direct economic losses due to mortality or morbidity in animal diseases.

## Usage

```
estimate_loss(type = c("mortality", "morbidity"), ...)
```

### Arguments

| | |
|---|---|
| type | Type of loss estimation. One of "mortality" or "morbidity". |
| ... | Arguments passed to the corresponding estimation function. |

### Value

An object of class epi_loss.

### Examples

```
estimate_loss(
  type = "mortality",
  animals = 100,
  mortality = 5,
  value = 10000
)

estimate_loss(
  type = "morbidity",
  affected = 20,
  duration = 10,
  daily_loss = 100,
  treatment_cost = 5000
)
```

---

## morbidity_loss *Estimate Morbidity Loss*

---

### Description

Calculates the economic loss associated with morbidity in animals.

### Usage

```
morbidity_loss(affected, duration, daily_loss, treatment_cost = 0)
```

### Arguments

| | |
|---|---|
| affected | Number of affected animals. |
| duration | Average duration of illness (days). |
| daily_loss | Average production loss per animal per day. |
| treatment_cost | Total treatment cost. |

### Value

An object of class epi_loss.

## Examples

```
morbidity_loss(
  affected = 20,
  duration = 14,
  daily_loss = 250,
  treatment_cost = 5000
)
```

---

`mortality_loss` *Estimate Mortality Loss*

---

## Description

Calculate the economic loss due to mortality in an animal population.

## Usage

```
mortality_loss(animals, mortality, value)
```

## Arguments

| | |
|---|---|
| `animals` | Total number of animals at risk. |
| `mortality` | Number of animals that died. |
| `value` | Monetary value per animal. |

## Value

An object of class `epi_loss`.

## Examples

```
mortality_loss(
  animals = 100,
  mortality = 10,
  value = 50000
)
```

## plot.epi_loss *Plot epi_loss object*

### Description

Plot epi_loss object

### Usage

```
## S3 method for class 'epi_loss'
plot(x, ...)
```

### Arguments

| | |
|---|---|
| x | epi_loss object. |
| ... | ignored. |

### Value

A bar plot.

## print.epi_loss *Print an epi_loss object*

### Description

Prints a concise summary of an object of class "epi_loss" to the console, including the loss measure, estimated value, and unit.

### Usage

```
## S3 method for class 'epi_loss'
print(x, ...)
```

### Arguments

| | |
|---|---|
| x | An object of class "epi_loss". |
| ... | Additional arguments, currently ignored. |

### Value

Returns x invisibly. This method is called primarily for the side effect of printing a summary to the console.

`summary.epi_loss` *Summarize an epi_loss object*

## Description

Summarize an epi_loss object

## Usage

```
## S3 method for class 'epi_loss'
summary(object, ...)
```

## Arguments

| | |
|---|---|
| `object` | An object of class `epi_loss`. |
| `...` | Additional arguments. |

## Value

Prints a summary.

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