

# Package ‘huito’

January 24, 2023

**Type** Package

**Version** 0.2.2

**Title** Reproducible and Flexible Label Design

**Description** An open-source R package to deploys reproducible and flexible labels using layers. The 'huito' package is part of the 'inkaverse' project for developing different procedures and tools used in plant science and experimental designs. Learn more about the 'inkaverse' project at <<https://inkaverse.com/>>.

**Date** 2023-01-24

**URL** <https://huito.inkaverse.com/>, <https://github.com/flavjack/huito>

**BugReports** <https://github.com/flavjack/huito/issues/>

**Depends** magick, cowplot, ggplot2, dplyr, R (>= 2.10)

**Imports** tidyr, tibble, purrr, sysfonts, showtext, qrcode, pdftools

**Suggests** knitr, rmarkdown, bookdown, gsheets, inti

**VignetteBuilder** knitr

**License** GPL-3 | file LICENSE

**Encoding** UTF-8

**RoxygenNote** 7.2.3

**LazyData** true

**NeedsCompilation** no

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barcode_qr	<i>Barcode generator</i>
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### Description

Generate bar codes using QR codes

### Usage

```
barcode_qr(text, color = "black", alpha = 1, ecl = "H")
```

### Arguments

text	text to convert to QR bar code
color	Bar code color
alpha	Intensity of the bar code color
ecl	Error correction level (percentage). "L" (7), "M" (15), "Q" (25) and "H" (30). Defaults to "H"

### Value

plot

### Examples

```
library(huito)

barcode_qr("LIMA-2021-11-03_15_3_4")
```

---

`fieldbook`*Fieldbook experimental design*

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**Description**

The dataset were obtained using inti package. The data set is a randomize complete block design (RCBD) with three replications.

**Usage**

```
fieldbook
```

**Format**

A data frame with 24 rows and 5 variables:

**barcode** barcode for each experimental unit

**plots** Plot number

**block** Blocks (3): number of replication in the design

**condition** Factor with two levels: irrigated and drought

**genotypes** Factor with four levels: choclito, salcedo, pandela, puno

---

`huito_fonts`*Fonts import*

---

**Description**

Import fonts from Google fonts

**Usage**

```
huito_fonts(fonts = NA)
```

**Arguments**

`fonts` fonts names

**Details**

For more fonts visit: <https://fonts.google.com/>

**Value**

fonts

---

image_import	<i>Image import</i>
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**Description**

Import images and include R magick options

**Usage**

```
image_import(image, opts = NA)
```

**Arguments**

image	path or url
opts	R magick functions by layers

**Value**

image

---

include_barcode	<i>Barcode layer</i>
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---

**Description**

Insert barcode in label

**Usage**

```
include_barcode(  
  label,  
  value,  
  size,  
  position = NA,  
  type = "static",  
  color = "auto",  
  units = "cm"  
)
```

**Arguments**

label	label output
value	column or path
size	image size
position	position coordinate
type	type of entry: dynamic or static
color	image color
units	units for the label options

**Value**

data frame

---

include_image	<i>Image layer</i>
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**Description**

Insert image in label

**Usage**

```
include_image(
  label,
  value,
  size,
  position = NA,
  type = "static",
  units = "cm",
  opts = NA
)
```

**Arguments**

label	label output
value	column or path
size	image size
position	position coordinate
type	type of entry: dynamic or static
units	units for the label options
opts	R magick funtions

**Value**

data frame

---

include_shape	<i>Shape layer</i>
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### Description

Insert shape in label

### Usage

```
include_shape(
  label,
  value = "hexagon",
  size = 5.08,
  position = NA,
  border_color = "black",
  border_width = 1,
  background = NA,
  units = "cm",
  panel_color = NA,
  panel_size = NA
)
```

### Arguments

label	label output (table)
value	type of shape (string: "hexagon")
size	shape size (numeric: 5.08)
position	position coordinate (numeric: NA)
border_color	image color (string: "black")
border_width	shape line width (numeric: 1)
background	background color (string: "red")
units	units for shape (string: "cm")
panel_color	panel color (string: NA)
panel_size	panel size (numeric: NA)

### Value

data frame

**Examples**

```
library(huito)

label <- label_layout(data = NA
  , size = c(10, 2.5)
  , background = "yellow"
  ) %>%
  include_shape(
    value = "hexagon"
    , position = c(1.2, 1.25)
    , background = "red"
    , border_width = 1
    , size = 2.4
    #, panel_size = 2.4*1.157175
  )

label %>% label_print("sample")

ts <- label$opts
```

---

include_text	<i>Text layer</i>
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---

**Description**

Insert text in label

**Usage**

```
include_text(
  label,
  value,
  position = NA,
  size = 11,
  font = NA,
  type = "static",
  color = NA,
  angle = 0,
  opts = NA
)
```

**Arguments**

label	label output
value	column or string
position	position coordinate

size	text size
font	font type
type	type of entry: dynamic or static
color	image color
angle	angle of the text
opts	list arguments from draw_label()

**Value**

data frame

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label_layout	<i>Label layout</i>
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**Description**

Generate labels options

**Usage**

```
label_layout(
  data = NA,
  size,
  border_width = NA,
  border_color = "black",
  background = NA,
  units = "cm"
)
```

**Arguments**

data	data frame to build the labels
size	label size (numeric: c(10, 2.5))
border_width	border width (numeric: 0.5)
border_color	border color (string: "transparent")
background	background color (string: "transparent")
units	units for the label options (string: "cm")

**Value**

data frame



## Examples

```
label <- label_layout(size = c(10, 2.5)
  , border_color = "red"
  , border_width = 1
  ) %>%
  label_print()
```

---

label_print	<i>Label print</i>
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---

## Description

Generate labels based in a data frame

## Usage

```
label_print(
  label,
  mode = "sample",
  filename = "labels",
  margin = 0.04,
  paper = c(21, 29.7),
  units = "cm",
  viewer = FALSE,
  smpres = 200,
  nlabels = NA
)
```

## Arguments

label	Data frame to build the labels or n repeated labels (table/numeric)
mode	Label generation (string: "sample/preview", "complete")
filename	Labels file name (string: "labels")
margin	Labels margins. margin(numeric vector: t = 0, r = 0, b = 0, l = 0)
paper	Paper size. Default A4 (numeric vector: 21.0 x 29.7)
units	Units for the label options (string: "cm")
viewer	Visualization of the label (logical: FALSE)
smpres	Sample resolution if viewer = TRUE (numeric: 200)
nlabels	Number of labels to generate (numeric: NA)

## Value

pdf

**Examples**

```

library(huito)

fb <- fieldbook

label <- fb %>%
label_layout(size = c(10, 2.5)
             , border_color = "blue"
             ) %>%
include_image(
  value = "https://flavjack.github.io/inti/img/inkaverse.png"
  , size = c(2.4, 2.4)
  , position = c(1.2, 1.25)
  ) %>%
include_barcode(
  value = "barcode"
  , size = c(2.5, 2.5)
  , position = c(8.2, 1.25)
  ) %>%
include_text(value = "plots"
            , position = c(9.7, 1.25)
            , angle = 90
            , size = 15
            , color = "red"
            ) %>%
include_text(value = "Inkaverse"
            , position = c(4.6, 2)
            , size = 30
            , color = "brown"
            ) %>%
include_text(value = "condition"
            , position = c(4.6, 1.2)
            , size = 13
            , color = "orange"
            ) %>%
include_text(value = "genotypes"
            , position = c(4.6, 0.5)
            , size = 13
            , color = "#009966"
            ) %>%
label_print(mode = "sample")

```

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shape\_hexagon

*Shape hexagon*


---

**Description**

Hexagon geom shape for ggplot2

**Usage**

```
shape_hexagon(  
  size = 5.08,  
  border_width = NA,  
  background = NA,  
  border_color = "black",  
  units = "cm",  
  panel_color = "green",  
  panel_size = NA  
)
```

**Arguments**

size	hexagon size (numeric: 5.08)
border_width	line width (numeric: 1)
background	background color (string: "transparent")
border_color	border color (string: "black")
units	units for shape (string: "cm")
panel_color	panel color (string: "green")
panel_size	panel size (numeric: NA)

**Value**

geom

**Examples**

```
library(huito)  
  
shape_hexagon(border_width = 1  
  , background = "red"  
  #, panel_size = 5.08  
)
```

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