Package 'PUPMCR'

January 20, 2025

Title Image-Based Identification of Color Based on Rayner (1970) Terminology and Known Fungal Pigments

Version 0.2.0

Description Image-based color matching using the ``Mycological Colour Chart'' by Rayner (1970, ISBN:9780851980263) and its associated fungal pigments. This package will assist mycologists in identifying color during morphological analysis.

License GPL-2

Encoding UTF-8

Imports colordistance, readxl

RoxygenNote 7.2.3

Maintainer Chester Deocaris <ccdeocaris@pup.edu.ph>

Repository CRAN

NeedsCompilation no

Author Niña Rose Zapanta [aut] (<https://orcid.org/0009-0004-2575-4340>), Rhenz Hannah Santos [aut] (<https://orcid.org/0009-0004-2783-1792>), Jericho Ivan Pineda [aut] (<https://orcid.org/0009-0009-7393-1328>), Lourdes Alvarez [aut, ths] (<https://orcid.org/0000-0002-2686-6262>), Chester Deocaris [aut, ths, cre] (<https://orcid.org/0000-0003-4504-160X>)

Suggests testthat (>= 3.0.0)

Config/testthat/edition 3

Date/Publication 2024-01-09 14:00:05 UTC

Contents

fungalpigments.LAB 2
fungalpigments.RGB 3
hue.LAB 4
hue.RGB 5
raynercolor.LAB 6
raynercolor.RGB 7

Index **8**

`fungalpigments.LAB` *fungalpigments.LAB*

Description

Generates results for associated fungal pigments / class of compounds based on the CIELAB color matches

Usage

```
fungalpigments.LAB(fungi, distance.method = "euclidean")
```

Arguments

`fungi`	Image of fungi in transparent background
`distance.method`	Metrics for color-matching ("euclidean", or "chisq")

Value

Fungal pigments, 3D LAB plot, color histogram

Author(s)

Niña Rose E. Zapanta

Jericho Ivan Pineda

Rhenz Hannah R. Santos

Lourdes V. Alvarez

Chester C. Deocaris

References

Rayner, R. (1970, ISBN:9780851980263). Mycological Colour Chart. UK: Commonwealth Mycological Insitute and British Mycological Society.

Conlan, X. A., Kalra. R., and Goel M. (2020) <doi:10.3389/fchem.2020.00369> Fungi as a Potential Source of Pigments: Harnessing Filamentous Fungi. Front. Chem, 8:369.

Cejpek, K. and Valisek, J. (2011) <doi:10.17221/524/2010-cjfs> Pigments of Higher Fungi: A review. Czech J. Food Sci., 29:87-102.

Examples

```
fungalpigments.LAB(system.file("fungi.png", package = "PUPMCR"))
## Not run: fungalpigments.LAB("fungi_image_format")
```

fungalpigments.RGB *fungalpigments.RGB*

Description

Generates results for associated fungal pigments / class of compounds based on the RGB color matches

Usage

```
fungalpigments.RGB(fungi, distance.method = "euclidean")
```

Arguments

fungi	Image of fungi in transparent background
distance.method	Metrics for color-matching ("euclidean", or "chisq")

Value

Fungal pigments, 3D RGB plot, color histogram

Author(s)

Niña Rose E. Zapanta

Jericho Ivan Pineda

Rhenz Hannah R. Santos

Lourdes V. Alvarez

Chester C. Deocaris

References

Rayner, R. (1970, ISBN:9780851980263). Mycological Colour Chart. UK: Commonwealth Mycological Insitute and British Mycological Society.

Conlan, X. A., Kalra. R., and Goel M. (2020) <doi:10.3389/fchem.2020.00369> Fungi as a Potential Source of Pigments: Harnessing Filamentous Fungi. Front. Chem, 8:369.

Cejpek, K. and Valisek, J. (2011) <doi:10.17221/524/2010-cjfs> Pigments of Higher Fungi: A review. Czech J. Food Sci., 29:87-102.

Examples

```
fungalpigments.RGB(system.file("fungi.png", package = "PUPMCR"))
## Not run: fungalpigments.RGB("fungi_image_format")
```

hue.LAB *hue.LAB*

Description

Generates results for hue groups based on the CIELAB color matches

Usage

```
hue.LAB(fungi, distance.method = "euclidean")
```

Arguments

`fungi`	Image of fungi in transparent background
`distance.method`	Metrics for color-matching ("euclidean", or "chisq")

Value

Hue groups, 3D LAB plot, color histogram

Author(s)

Niña Rose E. Zapanta

Jericho Ivan Pineda

Rhenz Hannah R. Santos

Lourdes V. Alvarez

Chester C. Deocaris

References

Rayner, R. (1970, ISBN:9780851980263). Mycological Colour Chart. UK: Commonwealth Mycological Insitute and British Mycological Society.

Conlan, X. A., Kalra. R., and Goel M. (2020) <doi:10.3389/fchem.2020.00369> Fungi as a Potential Source of Pigments: Harnessing Filamentous Fungi. Front. Chem, 8:369.

Cejpek, K. and Valisek, J. (2011) <doi:10.17221/524/2010-cjfs> Pigments of Higher Fungi: A review. Czech J. Food Sci., 29:87-102.

Examples

```
hue.LAB(system.file("fungi.png", package = "PUPMCR"))
## Not run: hue.LAB("fungi_image_format")
```

hue.RGB *hue.RGB*

Description

Generates results for hue groups based on the RGB color matches

Usage

```
hue.RGB(fungi, distance.method = "euclidean")
```

Arguments

fungi	Image of fungi in transparent background
distance.method	Metrics for color-matching ("euclidean", or "chisq")

Value

Hue groups, 3D RGB plot, color histogram

Author(s)

Niña Rose E. Zapanta

Jericho Ivan Pineda

Rhenz Hannah R. Santos

Lourdes V. Alvarez

Chester C. Deocaris

References

Rayner, R. (1970, ISBN:9780851980263). Mycological Colour Chart. UK: Commonwealth Mycological Insitute and British Mycological Society.

Conlan, X. A., Kalra. R., and Goel M. (2020) <doi:10.3389/fchem.2020.00369> Fungi as a Potential Source of Pigments: Harnessing Filamentous Fungi. Front. Chem, 8:369.

Cejpek, K. and Valisek, J. (2011) <doi:10.17221/524/2010-cjfs> Pigments of Higher Fungi: A review. Czech J. Food Sci., 29:87-102.

Examples

```
hue.RGB(system.file("fungi.png", package = "PUPMCR"))
## Not run: hue.RGB("fungi_image_format")
```

raynercolor.LAB *raynercolor.LAB*

Description

Generates results for color names from the CIELAB color space

Usage

```
raynercolor.LAB(fungi, distance.method = "euclidean")
```

Arguments

fungi	Image of fungi in transparent background
distance.method	Metrics for color-matching ("euclidean", or "chisq")

Value

Color names, 3D LAB plot, color histogram

Author(s)

Niña Rose E. Zapanta

Jericho Ivan Pineda

Rhenz Hannah R. Santos

Lourdes V. Alvarez

Chester C. Deocaris

References

Rayner, R. (1970, ISBN:9780851980263). Mycological Colour Chart. UK: Commonwealth Mycological Insitute and British Mycological Society.

Conlan, X. A., Kalra. R., and Goel M. (2020) <doi:10.3389/fchem.2020.00369> Fungi as a Potential Source of Pigments: Harnessing Filamentous Fungi. Front. Chem, 8:369.

Cejpek, K. and Valisek, J. (2011) <doi:10.17221/524/2010-cjfs> Pigments of Higher Fungi: A review. Czech J. Food Sci., 29:87-102.

Examples

```
raynercolor.LAB(system.file("fungi.png", package = "PUPMCR"))
## Not run: raynercolor.LAB("fungi_image_format")
```

raynercolor.RGB *raynercolor.RGB*

Description

Generates results for color names from the RGB color space

Usage

```
raynercolor.RGB(fungi, distance.method = "euclidean")
```

Arguments

fungi	Image of fungi in transparent background
distance.method	Metrics for color-matching ("euclidean", or "chisq")

Value

Color names, 3D RGB plot, color histogram

Author(s)

Niña Rose E. Zapanta

Jericho Ivan Pineda

Rhenz Hannah R. Santos

Lourdes V. Alvarez

Chester C. Deocaris

References

Rayner, R. (1970, ISBN:9780851980263). Mycological Colour Chart. UK: Commonwealth Mycological Insitute and British Mycological Society.

Conlan, X. A., Kalra. R., and Goel M. (2020) <doi:10.3389/fchem.2020.00369> Fungi as a Potential Source of Pigments: Harnessing Filamentous Fungi. Front. Chem, 8:369.

Cejpek, K. and Valisek, J. (2011) <doi:10.17221/524/2010-cjfs> Pigments of Higher Fungi: A review. Czech J. Food Sci., 29:87-102.

Examples

```
raynercolor.RGB(system.file("fungi.png", package = "PUPMCR"))
## Not run: raynercolor.RGB("fungi_image_format")
```

Index

fungalpigments.LAB, 2
fungalpigments.RGB, 3

hue.LAB, 4
hue.RGB, 5

raynercolor.LAB, 6
raynercolor.RGB, 7