

BeSTMod2_CRDDesign.R

agmmortl

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#####  
## BeSTMod2_CRDDesign.R  
## Author: Miranda Mortlock  
##  
## You need R and RStudio installed on your computer  
## Start an R Project or go into the project that  
## you have set up for this Module  
##  
## This program is code to assist you randomise a CRD  
## Run through to understand  
## Resave as a new program name and customise  
## Customise for your experiment  
## Completely Randomised Design (CRD)  
## For a number of treatments (more than 2)  
## and completely randomised experimental  
## units across the site  
##  
## Randomising using R code  
##  
#####  
  
## Remember all lines with a hash (in green)  
## are comments to help you  
  
## firstly you need this package  
  
library(agricolae)  
  
## Warning: package 'agricolae' was built under R version 3.2.1  
  
## We use a function in this package called design.crd  
  
#str(design.crd)  
  
## This command 'structure' or 'str( )'  
## it gives us a look at the function:  
## It will be displayed in the Console  
## It is commented out as you don't need to run this unless  
## you really want to.  
  
## I have copied it here for you to see,  
## and the hash has made it into a comment  
  
#function (trt, r, serie = 2, seed = 0, kinds = "Super-Duper")
```

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## To run this you put in your "treatments" called trt
## You need to decide on what plot numbering to use
## serie =2   or serie =1 (plot number style)
## you can give a seed number for the random number generator
## you specify teh number of replication
## the package was written with this called repeticion.

#####
### To change for your own design - CHANGE these two lines
## trt is the names of your treatments
## the repeticion is the number in each sample
## In this example it is 4 reps

trt <- c("N1", "N2", "N3")

repeticion <- c(4, 4, 4)

outdesign <- design.crd(trt,r=repeticion,seed=789,serie=0)

CRDbook1 <- outdesign$book
head(CRDbook1) ## this just gives the top 6 lines, for checking

```

```

##   plots r trt
## 1     1 1 N3
## 2     2 1 N1
## 3     3 2 N1
## 4     4 3 N1
## 5     5 2 N3
## 6     6 3 N3

```

```
CRDbook1 # prints the book called CRDbook1 to screen
```

```

##   plots r trt
## 1     1 1 N3
## 2     2 1 N1
## 3     3 2 N1
## 4     4 3 N1
## 5     5 2 N3
## 6     6 3 N3
## 7     7 1 N2
## 8     8 4 N1
## 9     9 4 N3
## 10    10 2 N2
## 11    11 3 N2
## 12    12 4 N2

```

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## the following saves it to a csv file,
## which you can open in Excel.

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```
write.csv(CRDbook1, "CRDbook1.csv", row.names=FALSE)

#####saved as a csv file

## Remember each time you run an experiment you need
## a fresh randomisation

## Next steps, make an Excel file with Worksheets for
##
## 1 the randomisation (eg from this output)
## 2 the plot layout as in the glass house or lab
## 3 your data sheet in a separate worksheet
## 4 Metadata -the description of your variables and treatments
## save this file and back it up too
```