Rticles: Scientific Documents with Bookdown R Package

www.lozanoisla.com

Jimmy Gomez , Flavio Lozano-Isla

Agronomist, Co-founder ww.quipo.org

Agronomist MSc, email: [flavjack@gmail.com](mailto:flavjack@gmail.com)

# Abstract

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**KeyWords:** Lorem, ipsum, dolor, sit amet, consectetur.

# Introduction

Lorem ipsum (Abbai et al., [2019](#ref-abbai2019)) dolor sit amet, consectetur adipiscing elit. Integer nec odio. Praesent libero. Sed cursus ante dapibus diam. Sed nisi. Nulla quis sem at nibh elementum imperdiet. Duis sagittis ipsum. Praesent mauris Fusce nec tellus sed augue semper porta. Mauris massa. Vestibulum lacinia arcu eget nulla Class aptent taciti sociosqu ad litora torquent per conubia nostra, per inceptos himenaeos. Curabitur sodales ligula in libero. Sed dignissim lacinia nunc (Bergström et al., [2020](#ref-bergström2020); Bhatt et al., [2019](#ref-bhatt2019)).

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# Materials and Methods

The data was analyzed in the statistical software R (R Core Team, [2020](#ref-R-base)). The germination analysis and graphics was carried out with the package GerminaR (Lozano Isla et al., [2020](#ref-R-GerminaR)). Each variable was submitted at analysis of variance (ANOVA) and the mean comparison test used was Student-Newman Keuls (P<0.05) (de Mendiburu, [2020](#ref-R-agricolae)). For the multivariate analysis, the principal components analysis (PCA) and cluster hierarchical classification analysis (HCPC) will be used .

The vertical bars represent the means (±SE). The mean differences between the groups are represented by different capital letters and into the group different lowercase letters (SNK, p = 0.05) (Husson et al., [2020](#ref-R-FactoMineR)).

More information about multivarite analysis in <http://factominer.free.fr/index.html>. Explanation for intepretation and analysis:

**PCA:** <https://www.youtube.com/watch?v=pks8m2ka7Pk&feature=youtu.be>

**HCPC:** <https://www.youtube.com/watch?v=4XrgWmN9erg>

## Data set

The data set used for this analysis is available in the following link: [DATA SET](https://docs.google.com/spreadsheets/d/1QziIXGOwb8cl3GaARJq6Ez6aU7vND_UHKJnFcAKx0VI/edit#gid=137089581)

## Nulla metus metus

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# Results

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# load data  
  
library(GerminaR)   
  
fb <- prosopis %>%   
 dplyr::mutate(across(c(rep, nacl, temp), ~ as.character(.)))  
  
# germination analysis  
  
gsm <- ger\_summary(SeedN = "seeds", evalName = "D", data = fb)  
str(gsm)  
  
# analisys of variance  
  
av <- aov(formula = grp ~ nacl\*temp + rep, data = gsm)  
summary(av)  
  
# mean comparision test  
  
mc <- ger\_testcomp(aov = av, comp = c("temp", "nacl"), type = "snk")

## Class aptent taciti

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# Discussion

Curabitur tortor (Lozano-Isla et al., [2019](#ref-GerminaR2019)), Pellentesque nibh. Aenean quam. In scelerisque sem at dolor. Maecenas mattis. Sed convallis tristique sem. Proin ut ligula vel nunc egestas porttitor. Morbi lectus risus, iaculis vel, suscipit quis, luctus non, massa. Fusce ac turpis quis ligula lacinia aliquet. Mauris ipsum. Nulla metus metus, ullamcorper vel, tincidunt sed, euismod in, nibh. Quisque volutpat condimentum velit. Class aptent taciti sociosqu ad litora torquent per conubia nostra, per inceptos himenaeos. Nam nec ante (Figure 1).

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# Conclusions

Class aptent taciti sociosqu ad litora torquent per conubia nostra, per inceptos himenaeos. Curabitur sodales ligula in libero. Sed dignissim lacinia nunc. Curabitur tortor. Pellentesque nibh. Aenean quam. In scelerisque sem at dolor. Maecenas mattis. Sed convallis tristique sem. Proin ut ligula vel nunc egestas porttitor. Morbi lectus risus, iaculis vel, suscipit quis, luctus non, massa. Fusce ac turpis quis ligula lacinia aliquet. Mauris ipsum. Nulla metus metus, ullamcorper vel, tincidunt sed, euismod in, nibh. Quisque volutpat condimentum velit. Class aptent taciti sociosqu ad litora torquent per conubia nostra, per inceptos himenaeos. Nam nec ante. Sed lacinia, urna non tincidunt mattis, tortor neque adipiscing diam, a cursus ipsum ante quis turpis. Nulla facilisi. Ut fringilla. Suspendisse potenti. Nunc feugiat mi a tellus consequat imperdiet.

# Acknowledgments

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# References

Abbai, R., Singh, V. K., Nachimuthu, V. V., Sinha, P., Selvaraj, R., Vipparla, A. K., Singh, A. K., Singh, U. M., Varshney, R. K., & Kumar, A. (2019). Haplotype analysis of key genes governing grain yield and quality traits across 3K rg panel reveals scope for the development of tailor-made rice with enhanced genetic gains. *Plant Biotechnology Journal*, *17*(8), 1612–1622. <https://doi.org/10.1111/pbi.13087>

Bergström, A., McCarthy, S. A., Hui, R., Almarri, M. A., Ayub, Q., Danecek, P., Chen, Y., Felkel, S., Hallast, P., Kamm, J., & al. (2020). Insights into human genetic variation and population history from 929 diverse genomes. *Science*, *367*(6484). <https://doi.org/10.1126/science.aay5012>

Bhatt, A., Bhat, N. R., Lozano-Isla, F., Gallacher, D., Santo, A., Batista-Silva, W., Fernandes, D., & Pompelli, M. F. (2019). Germination asynchrony is increased by dual seed bank presence in two desert perennial halophytes. *Botany*, *97*(11), 639–649. <https://doi.org/10.1139/cjb-2019-0071>

de Mendiburu, F. (2020). *Agricolae: Statistical procedures for agricultural research*. <https://CRAN.R-project.org/package=agricolae>

Donald, C. M., & Hamblin, J. (1976). The biological yield and harvest index of cereals as agronomic and plant breeding criteria. In N. C. Brady (Ed.), *Advances in agronomy* (Vol. 28, pp. 361–405). Academic Press. <http://www.sciencedirect.com/science/article/pii/S0065211308605593>

Husson, F., Josse, J., Le, S., & Mazet, J. (2020). *FactoMineR: Multivariate exploratory data analysis and data mining*. <https://CRAN.R-project.org/package=FactoMineR>

Lozano Isla, F., Benites Alfaro, O., Garcia de Santana, D., Ranal, M. A., & Pompelli, M. F. (2020). *GerminaR: Indices and graphics for assess seed germination process*. <https://flavjack.github.io/germinaquant/>

Lozano-Isla, Flavio, Benites-Alfaro, Omar Eduardo, Pompelli, & Marcelo Francisco. (2019). GerminaR: An R package for germination analysis with the interactive web application “GerminaQuant for R”. *Ecological Research*, *34*(2), 339–346. <https://doi.org/10.1111/1440-1703.1275>

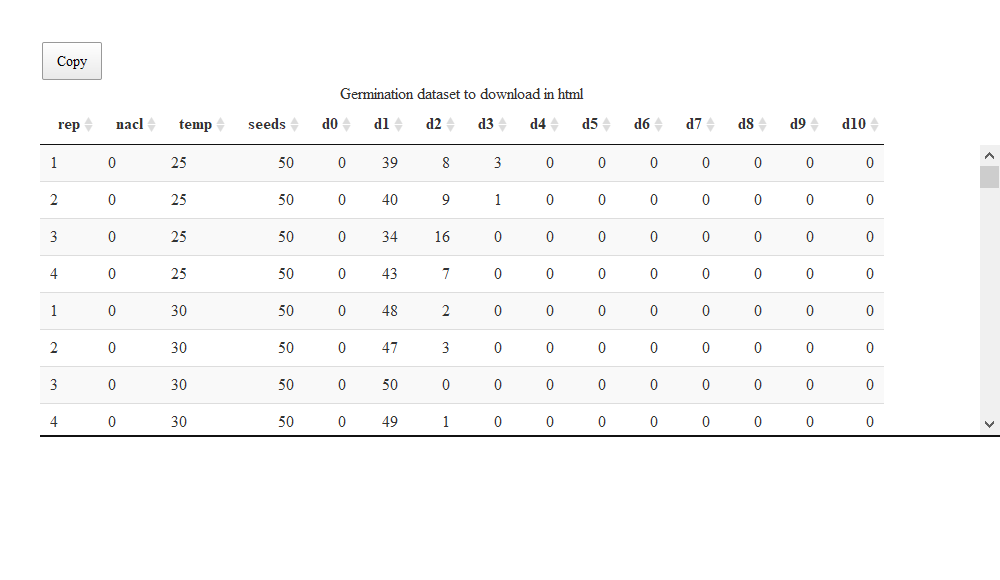
R Core Team. (2020). *R: A language and environment for statistical computing*. R Foundation for Statistical Computing. <https://www.R-project.org/>

Schafleitner, R., Gutierrez, R., Espino, R., Gaudin, A., Pérez, J., Martínez, M., Domínguez, A., Tincopa, L., Alvarado, C., Numberto, G., & al. (2007). Field screening for variation of drought tolerance in solanum tuberosum l. By agronomical, physiological and genetic analysis. *Potato Research*, *50*(1), 71–85. <https://doi.org/10.1007/s11540-007-9030-9>

Table 1: Germination dataset import from a googlesheet

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| rep | nacl | temp | seeds | D0 | D1 | D2 | D3 | D4 | D5 |
| 1 | 0.0 | 25 | 50 | 0 | 39 | 8 | 3 | 0 | 0 |
| 2 | 0.0 | 25 | 50 | 0 | 40 | 9 | 1 | 0 | 0 |
| 3 | 0.0 | 25 | 50 | 0 | 34 | 16 | 0 | 0 | 0 |
| 4 | 0.0 | 25 | 50 | 0 | 43 | 7 | 0 | 0 | 0 |
| 1 | 0.0 | 30 | 50 | 0 | 48 | 2 | 0 | 0 | 0 |
| 2 | 0.0 | 30 | 50 | 0 | 47 | 3 | 0 | 0 | 0 |
| 3 | 0.0 | 30 | 50 | 0 | 50 | 0 | 0 | 0 | 0 |
| 4 | 0.0 | 30 | 50 | 0 | 49 | 1 | 0 | 0 | 0 |
| 1 | 0.5 | 25 | 50 | 0 | 10 | 37 | 1 | 2 | 0 |
| 2 | 0.5 | 25 | 50 | 0 | 18 | 30 | 1 | 1 | 0 |

**Source:** a Schafleitner et al. ([2007](#ref-schafleitner2007))



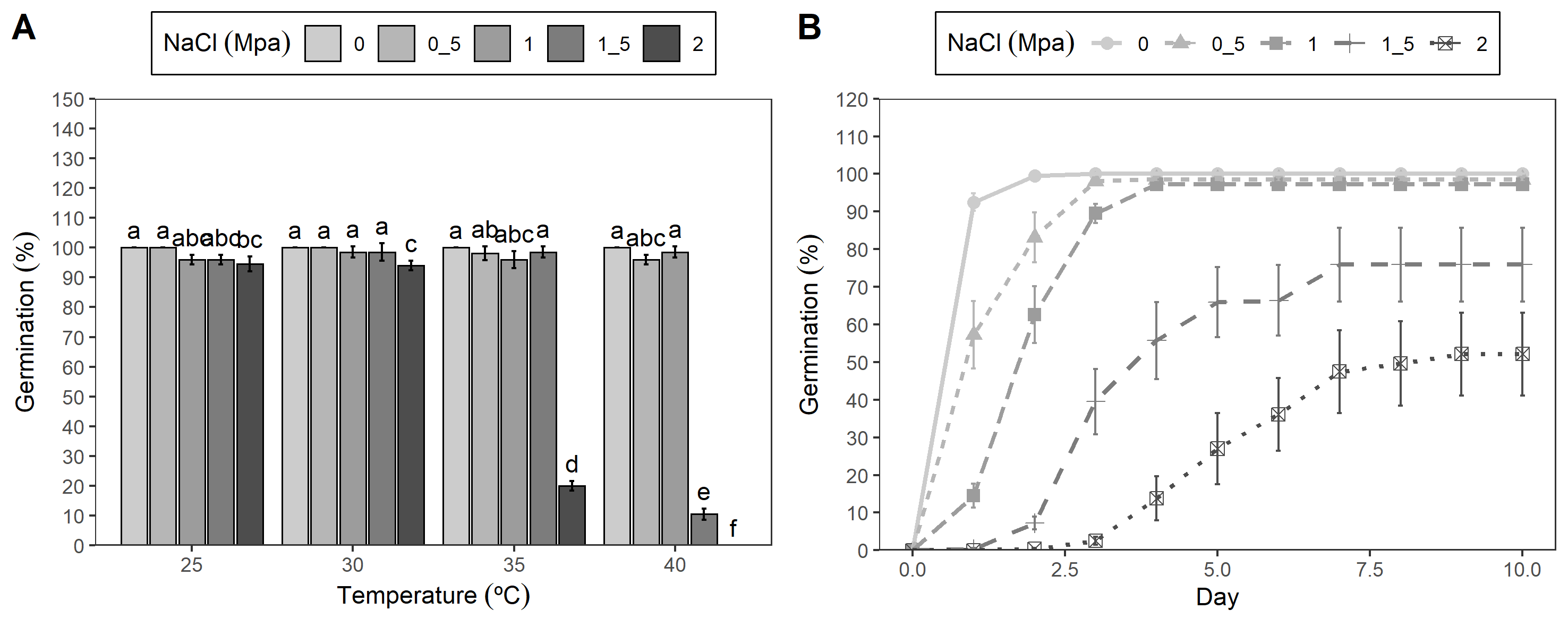


Figure 1: Germination experiment with *Prosopis juliflor* under different osmotic potentials and temperatures. **Where:** A) Bar graph with germination percentage in a factorial analisys. B) Line graph from cumulative germination under different osmotic potentials.



Figure 2: Plant of *Jatropha curcas*. A) Foliage, B) Leaf, C) Fruit.

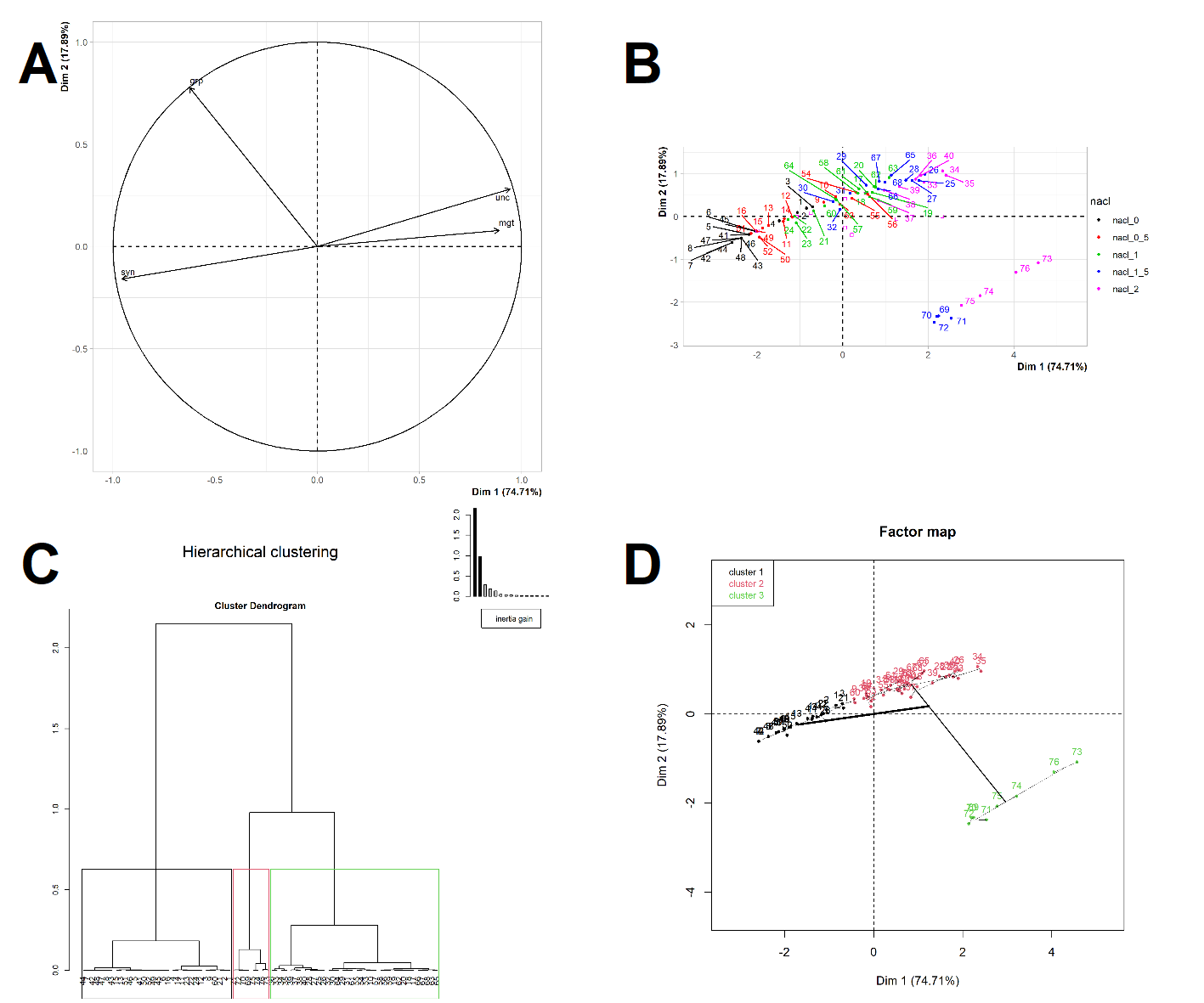


Figure 3: Multivariate Analysis: Principal component Analysis and Hierarchical Clustering Analysis.