

Maize Project

Zurich Data Scientists

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Contents

1	Scope	1
2	How to use these documents	1
3	Author contributions	1
4	Other considerations	2

1 Scope

The scope of this series of documents is primarily didactic. In this data set, maize seeds are planted in different soils and at different depths and seedlings, together with seeds that have not sprouted yet, are later transferred in a field. For each maize plant, height of the plant and weight of the cob are recorded.

The data was prepared: it was cleaned and new variables that might be useful or interesting were created. Then, it was inspected in a graphical analysis. Successively, appropriate models were fitted to different responses, the models' assumptions were checked and appropriate conclusions were derived.

2 How to use these documents

- We invite the reader to start with `0_DataDescription_maize.pdf`, then `0_DataPreparation_maize.pdf`.
- For all variables present in the data set, and all variables that will be considered as responses are plotted against the predictors in `1_GraphicalAnalysis_maize.pdf`.
- All files starting with `2_Modelling_` contain the modelling for one specific response. Depending on the response type, a different type of model is fitted. These documents are purposefully redundant, as they can be used as individual modules for teaching purposes.
- Reproducibility materials can be found in the eponymous folder. They contain R files with the code extracted from the `.Rmd` documents that generated the PDFs of this submission.

3 Author contributions

Several people authored the documents of this submission:

- **Nisia Trisconi** authored the graphical analysis and the modelling documents.
- **Luisa Barbanti** authored the data preparation and a first version of the graphical analysis. She consulted on and coordinated the project.

- **Matteo Tanadini** designed the experiment, collected the data and consulted on technical details throughout the whole project.

At the time of submission, all authors are employed at Zurich Data Scientists (zurich-data-scientists.ch).

4 Other considerations

This is the first iteration of publishing the documents relative to the “Maize Project”. This first version was conducted within a limited budget and is in no way exhaustive.

Next iterations or updates might include, for instance, survival analysis.

We are looking forward to any sort of feedback. You can contact Nisia (nisia.trisconi@zurich-data-scientists.ch) or Luisa (luisa.barbanti@zurich-data-scientists.ch).