

Alessandra Lezzi

UNIVERSITÀ CATTOLICA del Sacro Cuore



KEY-WORDS:
GENETICS · MAIZE CROP · LANDSCAPE
GENOMICS

PROFILE

I am a first-year PhD student in Crop Science specialized in Maize Genetics and Genomics

AFFILIATION

Department of Sustainable Crop Production (DI.PRO.VE.S)
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LANGUAGES



Mother language



Level C1

HOW TO REACH ME

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Reference Contact

Prof. A. Lanubile

Prof. M. Busconi

PROJECT TITLE

Increasing adaptation and sustainability of maize crop through landscape genomics

STEPS OF THE RESEARCH

- Morphological characterization of 28 maize landraces originating from 10 major maize-growing regions of Italy
- Preparation and analysis of GBS libraries to genetically characterize the landraces
- Collection of climatic data to better describe environmental characteristics of the chosen landraces' origin site
- Quantifying influence of spatial environmental variables on genomic divergence using an isolation by distance (IBD) approach and partial redundancy analysis. This will be based on genetic and environmental matrices
- Uncovering the environmental factors that shape adaptive genetic variation

RESEARCH CONTRIBUTION

The results that I expect to obtain from this research concern on one hand the detection of adaptive loci in Italian maize landraces, and, on the other hand a statistically significant association between adaptive loci and suitably selected climate variables will be achieved. These results could be useful for the improvement of breeding programs for a sustainable maize cultivation in a climate change context.

COLLABORATION

Prof. Stéphane Joost, EPFL, Lausanne.

Why should you care?

Landraces' study is of particular importance because it represents a valuable source of potentially useful traits, such as resistance or tolerance to biotic and environmental stresses, but also a remarkable bank of highly co-adapted genotypes.