

PhD Thesis Defense

On **Thursday February 13th 2025 at 10.00 am** in the classroom **G**, Via Santa Sofia 100

Alessio Scandurra (XXXVII cycle)

Will discuss his PhD theses titled

PHYSIOLOGICAL AND PRODUCTION EVALUATION OF DIFFERENT POPULATIONS OF SICILIAN WHEAT LANDRACES

Thesis Abstract

The growing consideration for sustainable farming and food security underscores the significance of landraces which are traditional wheat types that have not been genetically modified in modern times. These wheat, known for their historical roots, unique characteristics, and adaptation to local conditions, provide special benefits in today's agricultural and environmental setting. Landraces commonly show better ability to resist both biotic and abiotic stresses, do well in low-input farming methods, and help preserve agricultural biodiversity. Their increased height and lower gluten levels make them well-suited for organic agriculture and specialized markets, appealing to customers looking for healthy options and sustainable food choices. Even though landraces have a lower yield than modern wheat types, their nutritional and sensory qualities, as well as their ability to improve food security and environmental sustainability, emphasize their important role in today's agriculture. Efforts to register and protect these important genetic resources in national conservation programs are contributing to the recent resurgence of interest, promoting supply chains that prioritize food safety and ecological sustainability. The research activities specifically aimed to: (i) Compare the performance of local landraces and modern genotypes, with a focus on evaluating their final yield; (ii) analyze genotypic responses to water stress; (iii) evaluate genotypes under high and low input conditions; (iv) evaluate yield response and gas exchange, under rainfed and irrigated conditions; (v) evaluate Biogas production capacity from landrace straw. Overall, this research demonstrated how different agronomic practices impact the performance and quality of landraces wheat varieties. These findings provide a solid foundation for further studies and the optimization of landraces wheat cultivation, promoting greater sustainability and quality in Mediterranean agriculture.

Advisor:

Prof. Salvatore Luciano Cosentino

Co-Advisor

Prof. Giorgio Testa



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