

PROJECT TITLE

Dissection of the root system architecture QTLome under different nitrogen regimes and evaluation of its effects on yield in durum wheat

CONSORTIUM

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SUMMARY OF THE REPORT

Durum wheat is an important cereal crop in the world, particularly in the countries of the Mediterranean Basin, where provides major food staples. Root system architecture (RSA) plays a fundamental role in determining soil resources uptake efficiency in durum wheat and other crops. For this reason, RSA is a pivotal component of agricultural and natural ecosystems productivity. In this study, a panel of 218 durum wheat accessions representing the major durum gene pools adapted to the Mediterranean environments were tested in two different nitrogen concentration. The calibration test was performed to establish the nitrogen concentration of the solutions to use in the main experiment. The phenotyping data of this experiment will be used for a GWAS to identify QTLs for nitrogen use efficiency (NUE) and water use efficiency (WUE). The molecular markers associated with these QTLs could be used in breeding programs for a more sustainable agriculture.