

**PROJECT TITLE**

In depth phenotyping for drought tolerance-related root traits in a lentil RIL population

**CONSORTIUM**

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## SUMMARY OF THE REPORT

Root traits are important plant characteristics for water and nutrients uptake from soil. They play a determinant role in the mechanism of drought tolerance under water deficit conditions. However, root traits have been neglected in lentil breeding programs due mainly to the lack of reliable phenotyping methods. Developing modern molecular screening tools could help to efficiently use these important traits for developing varieties with well-developed root systems that could contribute to enhance lentil production especially in rainfed areas where drought stress is frequent. The project is about in-depth phenotyping for drought tolerance-related root traits in a lentil RIL population. The transnational access to the plant phenotyping facilities of EPPN2020 project will allow precise measurements on roots characteristics. The available genetic information (DNA markers) on the genetic material to be used in this project will be combined with the expected phenotypic characteristics from the project. This will allow better understanding of genetic variability, heritability and DNA marker-root trait associations. Ultimately, this will contribute to develop reliable screening method for root traits conferring drought tolerance as an efficient alternative to slow and labor-intensive conventional breeding methods.