

**PROJECT TITLE**

Within- and among variety variability of root trait responses to N availability in two forage legumes

**CONSORTIUM**

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# SUMMARY OF THE REPORT

The aim of the WINLEG-TNA was to examine the intraspecific diversity of shoot and root morphogenetic traits in two major forage legumes (alfalfa and red clover) using the 4PMI phenotyping platform. The experiment was carried out from January to March 2021. A panel of five contrasting varieties per species was analysed under two nitrogen conditions (N+: high N level preventing nodulation of legumes; 0N: zero nitrogen with inoculation of *Rhizobium* for nodulation) during the establishment phase of these perennial species. Phenotyping addressed traits above- (shoot development, leaf and stem growth, shoot biomass) and belowground (root biomass, branching density, nodule formation). Five weeks after the end of the experiment, the analyses of results are still very preliminary. Nevertheless, the discussions with the INRAE team in Dijon and the first analyses suggest that the experiment ran very well in spite of the COVID-19 situation. They confirm that significant impacts of the two studied treatments (i.e. genetic effect of cultivars; response to N limitation) were achieved in the two species. Most of the analytical work remains to be done, particularly with respect to root growth characterisation. Several steps are presented in order to complete these analyses in the next few months.