

PROJECT TITLE

Growth DYNamics of maize lines in response to Arbuscular Mycorrhiza under drought stress

CONSORTIUM

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SUMMARY OF THE REPORT

Drought is one of the major constraints limiting productivity of crops, such as maize, worldwide. Methods and tools to limit negative effects of drought on yield are highly desired. Arbuscular mycorrhiza (AM), a symbiosis between beneficial fungi and 80% of land plants, has been shown to significantly relieve drought stress of maize. Interestingly, the positive effect of AM on maize performance depends on the plant genotype. The genotype-specific AM-mediated performance increase is called AM-responsiveness. We identified genotype-dependent variability of AM-responsiveness under drought stress conditions in a set of 13 maize Dent inbred lines under semi-controlled conditions using end-point measurements of biomass. EPPN2020 enabled and VIB Gent granted us access to the WIWAM Conveyor (PHENOVISION) platform at the VIB in Gent, where we performed a pilot experiment to analyse the described AM responsiveness effects under highly controlled conditions and daily image-based measurements. 2 maize lines with contrasting AM-responsiveness as well as B104 as a check, were grown on the Phenovision platform. Due to Covid-19 the experiment had to be aborted before it could be finished. Nonetheless, we obtained some valuable data on the growth dynamics of all genotypes indicating genotype-dependent timepoints for the positive AM effect to be measurable.