

Transnational Access Report

The project leader of the user group fills in the form and returns it to

- 1) the access provider
- 2) project manager (r.pieruschka@fz-juelich.de) within 4 weeks at the end of the study period.

1. General Information

Project Acronym (ID):	GrowMaD
Project Title	GROWth response of MAize seedlings to mild and severe Drought
Name of Group Leader	Gerrit Beemster
Name of organization	University of Antwerp
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2. Duration of access

Begin of the project First day the installation was used	End of the project Last day the installation was used
21.05.2013	26.06.2013

3. Project summary (max. 250 words)

A set of commercial hybrid maize lines with contrasting drought sensitivity from West-Europe (2 sensitive and 2 tolerant) and South-Africa (2 sensitive and 2 tolerant), together with a reference inbred line B73 were subjected to control and severe drought conditions in a glasshouse experiment in order to perform an extensive phenotyping of shoot and root growth dynamics. We were interested particularly in the link between root and shoot phenotype and their detailed development in time inferred by 2D imaging of shoots and roots in order to complement our previous results on leaf growth reduction in response to drought, obtained by a detailed kinematic analysis in the University of Antwerp. Additional measurements of stomatal conductance, chlorophyll content and photosynthetic parameters were performed and correlated to the redox and antioxidant changes, measured previously in our lab in the University of Antwerp in order to complete a more general image of the difference between tolerant and sensitive lines.

6. Main achievements (max. 250 words)

1. A significant growth reduction was observed in the severely drought stressed plants compared to the control plants, confirming previous results of leaf growth response to drought obtained at the University of Antwerp.
2. A correlation between leaf and root growth responses to drought with the drought tolerance of maize hybrids was observed.
3. Photosynthesis and chlorophyll response to drought were correlated to the redox and antioxidant changes previously measured at the University of Antwerp.