

# Transnational Access Report

## 1. General Information

Project Acronym (ID):	WATERINVEST
Project Title	Water savers and spenders: Strategies of drought resistance in durum wheat landraces and wild relatives
Installation used	ScrrrenHouse
Name of Group Leader	Gernot Bodner
Name of organization	University of Natural Resources and Life Sciences Vienna
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## 2. Duration of access

Duration of the access refers to the use of the installation only and does not include the preparation of the experiment or data analysis.

Begin of the project First day the installation was used	End of the project Last day the installation was used
June 1 <sup>st</sup> 2014	July 18 <sup>th</sup> 2014

## 3. Project summary (max. 250 words)

The project is aimed to investigate the different drought resistance strategies i.e. “water-spending and water-saving” in a set of 12 durum wheat landraces originated from a wide range of climates (A, B, C and D climates according to Köppen-Geiger) and annual rainfall from 150 to 730 mm. Three modern check cultivars from Turkey, Italy, and Austria were tested alongside of landraces as well. Genotypes with “water spending” strategy are more efficient in water uptake and delayed stomata closure (continued assimilation) in drying soil. While, water-saving is a conservative strategy targeting plant survival and hence limiting yield by lower stomata conductance and earlier stomata closure at drying. Moreover, the importance of origin vs. genetics for distinct adaptation to drought is of interest in this project. Climates with off-season rainfall (storage-driven) lead to water saving and drought escape as predominant adaptation, while climates with in-season rainfall (supply-driven) lead to water spending with plant architecture and physiology adapted to high radiation and water use.

All genotypes were tested under two contrasting water regimes (a) control: 75 percent of the plant available water (PAW) and (b) drought: 25% of PAW in the SCREEN House at FZJ.

Morph-physiological properties were measured alongside of regular shoot imaging on 5 replications of each genotype.

## 4. Main achievements (max. 250 words)

Collected data are being analyzed, this will reveal groups of genotypes with similar drought response and identify if drought strategies are specific-climate based.