

Drought Phenotyping working group

Summary of discussion and plans

1. Points discussed during the group meeting

- a. Who does what? What focus (molecular / physio / genetics)
- b. What material (wild, ABI, RevIL)
- c. Who needs what?
 - d. Training (when / where / coordination)
- e. Equipment
- f. How/what to test in the wild / introgression:
 - Protocols
 - how to deal with flowering time
 - what to measure in wild
- g. Genetic material: Exchange
 - Core set at all locations?
 - More material (Australia / Canada / India?)
- h. Field trials: What / Where / What measurement
- i. Any interest in adding a modeling component??

2. Training

- a. Fatma Basdemir (Dicle Univ.):
 - To visit ICRISAT for 3-4 months training between Oct 2015 and Feb 2016.
 - Training on dry-down protocol and vapor pressure deficit (VPR) response of transpiration protocol for application to 26 wild genotypes once back in Turkey (Feb-June 2016).
 - Tentative travel of Vincent Vadez to Turkey during that experimental time.

b. Lijalem Balcha (EIAR):

- To visit ICRISAT for 3-4 months training between Oct 16 and Feb 16.
- Specifics of the training to be defined. Very likely on the assessment of water use traits (with LeasyScan / LysiField, in preparation for RevILs and IIs).

c. Susan Moenga (UC Davis):

- To visit ICRISAT for training – Timing to be defined.
- Focus on the transpiration response to VPD and dry-down.
- Objective to apply the protocol for transcriptomics analysis of reciprocal F1 between wild and cultivated.

3. Protocols and activities:

Vincent Vadez to coordinate and prepare the development of protocols for posting in the CIL website (specific tab – link with ontology.org). Will be an on-going activity as update/new protocols come along.

Assignments:

1. Template for dry-down to be posted on website (VV).
2. Experimental plan for Fatma Basdemir (FB): Initiate water budget experiment in Turkey.
3. Training visit at ICRISAT (Oct 15-Feb16): (a) Continue water budget experiment. (b) Drydown and VPD response in 26 wild (Feb 16 – June 16).
4. List of traits targeted to be measured in different sites:
 - Water budget - TE (Turkey (FB) / Tentatively ICRISAT (VV).
 - FTSW threshold for Tr decline (FB).
 - Transpiration response to VPD (FB – VV).
 - Leaf Area/Root Area ratio (if seeds on time) (VV).
 - Leaf area development dynamics (if seeds on time) (VV).
 - Jens would add measurements once he gets seeds.

4. Genetic material

- Seed multiplication of wild at ICRISAT (VV).

- Based on experimental results, information shared for main phenotypic contrast among wild populations for water use traits to orient the choice of population development (FB, VV) (e.g. for Bunyamin or Varma or Judith).

5. Modeling

- Either import seeds of recurrent elite lines from Turkey and Ethiopia, or obtain ICRISAT/ICARDA entry number and procure from gene bank (VV).
- Varma or Bekir or Lijalem to provide ICRISAT or ICARDA names for elite recurrent parents.
- Initiate parameterization of recurrent genotypes for modeling purpose (VV).
- Initiate Susan's training in modeling when visiting ICRISAT (VV).