



**HAL**  
open science

## Drought response and genetic diversity in *Pisum fulvum*, a wild relative of domesticated pea

Erez Naim-Feil, Maya Toren, Gregoire Aubert, Amir Sherman, Ron Ophir,  
Yehoshuo Saranga, Shahal Abbo

### ► To cite this version:

Erez Naim-Feil, Maya Toren, Gregoire Aubert, Amir Sherman, Ron Ophir, et al.. Drought response and genetic diversity in *Pisum fulvum*, a wild relative of domesticated pea. 8. International Conference on Legume Genetics and Genomics (ICLGG), Noble Research Institute., Sep 2017, Siófok, Hungary. 128 p. hal-02734766

**HAL Id: hal-02734766**

**<https://hal.inrae.fr/hal-02734766>**

Submitted on 2 Jun 2020

**HAL** is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L'archive ouverte pluridisciplinaire **HAL**, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d'enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.

# BOOK OF ABSTRACTS



**8<sup>th</sup> International Conference on Legume Genetics and Genomics**  
**18-22 September 2017**  
**Siófok, Hungary**

---

## Drought response and genetic diversity in *Pisum fulvum*, a wild relative of domesticated pea

E. Naim-Feil<sup>1</sup>, M. Toren<sup>1</sup>, G. Aubert<sup>2</sup>, A. Sherman<sup>3</sup>, R. Ophir<sup>3</sup>, Y. Saranga<sup>1</sup>, **S. Abbo**<sup>1</sup>

<sup>1</sup> The Hebrew University, Israel

<sup>2</sup> INRA, France

<sup>3</sup> Agricultural Research Organization, Volcani Center, Israel

Productivity of grain crops in semi-arid areas is often affected by drought, which is likely to increase due to climate changes. A collection of 160 wild pea (*Pisum fulvum*, Pf) accessions was assembled from across its ecological range in Israel (350-850 mm annual precipitation) and used to assess genetic diversity in this taxon. A range of phenology and other morpho-physiological traits was documented. We hypothesized that native species evolving under east Mediterranean climate carry adaptive traits to cope with drought stress. Accessions were classified according to SNP variation and habitat ecogeography. Significant differences were found between accession groups, but grouping in both systems did not match. Fifty-two Pf accessions and 3 domesticated (*Pisum sativum*) genotypes were evaluated, during two seasons, under well-watered (600mm) and water-limited (350mm) conditions. Total dry matter, grain yield, harvest index and average grain weight were higher in domesticated pea than wild Pf, however several Pf accessions exhibited lower drought susceptibility indices (i.e. greater stability across environments) than domesticated pea. Of special interest were a number of Pf genotypes in which low susceptibility to water stress was coupled with relatively high productivity. Sampling habitats of the low susceptibility - high productivity accessions are not the driest ones but are rather characterized by mild (400-530mm) annual precipitation. Further sampling and evaluation of Pf from such locations may improve our understanding of pea drought adaptation and yield physiology.

---

### **How to refer your abstract:**

E. Naim-Feil, M. Toren, G. Aubert, A. Sherman, R. Ophir, Y. Saranga, S. Abbo (2017) Drought response and genetic diversity in *Pisum fulvum*, a wild relative of domesticated pea; ICLGG 2017 - Book of abstracts, ICLGG2017/OL/13