

Utilization of local genetic diversity to understand and exploit barley adaptation to harsh environments and for pre-breeding

Virtual annual meeting

3-4th February 2022

Organised by:



Thursday 3rd February 2022

Online meeting via Teams



- 9.00 – 9.15** **Welcome, agenda of the meeting and management issues** (Agostino Fricano, Coordinator of GENDIBAR-CREA-GB)
- 9.15 – 10.00** **WP1 – Assembling of barley collections, bioclimatic databases and phenotyping** (**Agostino Fricano (?)** & Abdoallah Sharaf)
- Task 1.1: Creation of a high-resolution gridded dataset of bioclimatic descriptors of the Mediterranean agro-ecological zones (**Ernesto Igartua**)
 - Task 1.2: Assembly of a Mediterranean Core Reference Set of barley landraces, multiplication of seeds and phenotyping for phenological traits in row trials (**Alessandro Tondelli/Davide Guerra**)
 - Task 1.3: Phenotyping of selected barley landraces in common garden experiments (**Agostino Fricano?**)
 - Task 1.4: GWAS with circa 100 landraces for drought and powdery mildew resistance (**Abdoallah Sharaf**)
- 10.00 – 10.45** **WP2 – Analyses of physiological and genetic adaptation to harsh Mediterranean conditions** (Agostino Fricano & Ernesto Igartua)
- Task 2.1: Identification of barley loci associated to bioclimatic variables (**Ernesto Igartua**)
 - Task 2.2: Unravelling the allele combinations that control barley phenology in the Mediterranean germplasm (**Alessandro Tondelli/Davide Guerra**)
 - Task 2.3: Identification of genomic signatures of adaptation to Mediterranean environments (**Agostino Fricano**)
 - Task 2.4: Studying the performance of near isogenic lines (NILs) carrying different combinations of PpdH1 and HvVrn1 alleles under field conditions with extended photoperiod and after vernalization (**Gustavo Slafer**)
- 10:45 – 11:00* *coffee break*
- 11:00 – 11:45** **WP3 – Analyses of responses to high temperature during vulnerable stages of reproductive development** (Raffaella Battaglia & Ivan Acosta)
- Task 3.1: Effects of heat waves on barley yield under controlled conditions (**Raffaella Battaglia & Ivan Acosta**)
- Task 3.2: Morphological and histological characterization of reproductive development under heat waves (**Raffaella Battaglia & Ivan Acosta**)
- Task 3.3: Transcriptional responses of reproductive tissues during heat wave treatments. (**Raffaella Battaglia & Ivan Acosta**)
- Task 3.4: GWAS of heat wave responses. (**Raffaella Battaglia & Ivan Acosta**)
- Task 3.5: Field evaluation of the pleiotropic effects of HvVrn1 and PpdH1 alleles on yield components under increased ambient temperature (**Gustavo Slafer**)
- 11.45 – 12.30** **General discussion: Management and scientific issues of WP1-2-3** (all attendees)

Friday 4th February 2022 Online meeting via Teams



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- 9:00 – 9:45** **WP4 – Crop modelling to profile barley ideotypes and to guide pre-breeding**
(Alessia Perego & Nevzat AĞRI)
Task 4.1: Designing high yielding barley ideotypes to cope with climate change of
the Mediterranean area (**Alessia Perego**)
Task 4.2: Harnessing and valorizing the genetic diversity of barley landraces in pre-
breeding programs (**Hakan Ozkan**)
- 9:45 – 10:30** **WP5 - Dissemination, training and technology transfer** (Raffaella Battaglia & Moez
Hanin)
Task 5.1 - Development of a detailed plan for Communications, Dissemination and
Knowledge Exchange (**Moez Hanin**)
Task 5.2 - Development of digital and standard communication tool (**Moez Hanin**)
Task 5.3: Dissemination for the scientific community and students (**Raffaella &
Battaglia Moez Hanin**)
Task 5.4: Dissemination for stakeholders and end-users (**Raffaella Battaglia & Moez
Hanin**)
- WP6 - Consortium coordination and project management**
- 10:30 – 10:45* *coffee break*
- 10:45 – 11:30** **WP6+General discussion on WP 4-5 (Agostino Fricano and all attendees)**
- 11:30 – 12.00** **Conclusions (Agostino Fricano)**