

## **UNLOCKING THE HIDDEN POTENTIAL OF GENETIC DIVERSITY TO IMPROVE DURUM WHEAT RESISTANCE TO HEAT STRESS**

PALERMO N.\*, MARMIROLI N.\*\*, PIGNONE D.\*\*\*, BUFFAGNI V.\*\*\*\*, JANNI M.\*\*\*, \*\*\*\*\*

\*) Dipartimento di Scienze Chimiche, della Vita e della Sostenibilità Ambientale Università degli Studi di Parma

\*\*) CINSA Interuniversity Consortium for Environmental Sciences, Parma/ Venice , Italy

\*\*\*) Istituto di Bioscienze e Biorisorse, IBBR-CNR, Bari, Italy

\*\*\*\*) Università Cattolica del Sacro Cuore, Piacenza Italy

\*\*\*\*\*) Istituto dei materiali per l'elettronica e il magnetismo, IMEM-CNR, Parma , Italy

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Global agricultural production must double by 2050 to meet the demands of an increasing world human population but this will be challenged by the climate change. Environmental stress, heat and drought are key drivers in food security by contrasting the increase of productivity in the field. The impact on food security is not predictable, but it will certainly hinder agriculture sustainability leading to a further depletion of natural resources.

To enhance plant breeders' capacity to respond to climate challenges, the access and use of the potential hidden in the genetic diversity is mandatory.

Here we exploit an innovative cost- effective targeted-resequencing approach by Next Generation Sequencing (NGS) coupled with the KASP assay to assess the presence of any identified SNP in the sHsp26 sequence in a panel of durum wheat landraces. The combination with an affordable phenotyping approach led to the identification of candidate genotypes with improved heat resistance capabilities and gives new insights in the role played by small Hsps in enhancing wheat resistance to heat stress.