Poster Communication Abstract – 5.10

GENOMIC REGIONS FROM AN IRANIAN LANDRACE INCREASE KERNEL SIZE IN *TRITICUM DURUM*

DESIDERIO F.*, LICCIARDELLO S.**, PALUMBO M.**, SCIACCA F.**, VIRZÌ N.**, ZAREI L.***, FARSHADFAR E.***, KIANOOSH C.***, GUERRA D.*, CATTIVELLI L.*, MAZZUCOTELLI E.*

*) CREA, Genomics Research Centre, Via San Protaso 302, 29017 Fiorenzuola d'Arda (Italy)
**) CREA, Research Center for Citrus and Mediterranean Crops, C.so Savoia 190, 95024 Acireale (Italy)
***) Agronomy and Plant Breeding Department, Biotechnology Research Department for Drought Resistance, Razi University, Kermanshah (Iran)

kernel morphology, landraces, durum wheat, QTL mapping

Modern durum wheat varieties exhibit large kernels, in particular grain width, and rather uniform seed size, as a consequence of domestication and breeding for increased kernel yield and weight. On the contrary, durum wheat landraces show a much greater variability for kernel size and shape, therefore segregating populations between modern varieties and landraces offer a useful resources for the understanding of the genetic components controlling kernel morphology.

This work relies on a RIL population derived from the cross between the Iranian landrace accession 249 and the Iranian cultivar Zardak. The population has been genotyped with the 90K iSelect (Illumina) and the corresponding high resolution marker map has been produced. The two parents strongly differ for their kernel shape, the seeds are larger in Zardak compared to the landrace, while accession 249 shows a longer seeds and a higher kernel weight. The population has been evaluated in three different environments: Libertinia (Sicily) 2013-2014, Libertinia 2014-2015 and Fiorenzuola d'Arda (North Italy) 2014-2015 and the corresponding kernel samples have been phenotyped for several descriptors of kernel morphology. QTL analysis has revealed several genomic regions associated to each trait, some conserved across the environments, others expressed in a specific environmental condition.