

QUANTITATIVE RT-PCR ANALYSIS OF *TdDRF1* TRANSCRIPTS FROM DEHYDRATED DURUM WHEAT UNDER CONTROLLED FIELD CONDITIONS

A. LATINI*, M. SPERANDEI*, G. CHIAVICCHIONI*, C. CANTALE*, M. IANNETTA**, M. DETTORI***, K. AMMAR****, P. GALEFFI*

*) ENEA BIOTEC-GEN, Via Anguillarese 301, 00060 Roma, Italy

***) ENEA BIOTEC-DES, Via Anguillarese 301, 00060 Roma, Italy

****) CRAS, Sardinia, Italy

*****) CIMMYT, MEXICO

hydric stress, durum wheat, dehydration responsive factors, molecular assisted breeding

The desertification is becoming an important issue of last dry years and it is considered one of the most relevant problem linked to the world climatic tendencies and their impact on the agriculture. In this view, classical breeding techniques and modern plant biotechnologies are foreseen to increase agricultural productivity, especially on fundamental crops as wheat.

It is known that the *DREB* genes, firstly isolated from *Arabidopsis* genome, are the key-genes conferring resistance to water stress, high salinity and cold, in the ABA-independent pathway. These *DREB* genes codify for transcription factors that control the expression of several target genes involved in the mechanism of tolerance to the above stresses.

Previously, we isolated and characterized a gene for a factor responsive to dehydration, *DREB*-related, in durum wheat (*TdDRF1*: *Triticum durum* Dehydration Responsive Factor 1) which produces three transcripts by alternative splicing mechanism, two of them codifying for transcriptional activators. Results obtained using plant samples of different cultivars in time-course, water stress experiments in greenhouse suggested a correlation between the water stress and the expression profile which depends on the genotype.

We present here some results obtained analysing stressed materials from experiments carried out at the controlled experimental fields of CIMMYT at Obregon (MX). Quantitative RT-PCR was used to measure the expression profile of the three transcripts in these conditions. Tolerant and subsceptible cultivars were analysed and the results from field are compared with the greenhouse ones.