

**Abstract:**

Wheat with scientific name ( *triticum aestivum* ) of dark wheat is (Graminaceae) . this plant is available in domestic ( Hexaploid- Tetraplepoloid) and wild species (Diploid).in this research , investigating the mechanism of drought tolerance, and expression of the genes involved in osmotic regulation testing in factorial based on a randomized design in three repetitions, in two condition of tension and without tension drought on three species Diploid, two kind of Tetraplepoloid and two kind of Hexaploid in the greenhouse of university Zabol, they were examined in a pot. Features evaluated contains, Proline, Glycine betaine, Soluble carbohydrate in stem, total protein, relative humidity (RWC). Also, gen relative pattern P5CS and BADH measured by Real Time PCR method. For this purpose, total RNA extracted from the lamb sample and followed by cDNA synthesis, and in the next step sigmoid curve related to changes in the expression of the sequences examined during drought tension with concentration curve series for housekeeping genes, to control the reproduction efficiency draw by Real Time PCR device software.result are shown, the gen expression BADH and P5CS increase in tension condition . Proline, Glycine betaine, as an important osmolitis, it is essential to reduce the osmotic pressure of cell under tension . in plant cell, delta enzyme 1- proline there is 5- synthetase carboxylic acid (P5CS) and enzyme aldehyde hydrogenase (BADH) under the condition of dryness, the activity of this enzyme intensifies , and increase the amount of Proline and Glycine betaine inside the cell to degree which will be prevented from much damage to the dehydration. also drought cause increasing characteristics total protein, soluble carbohydrate in the stem, proline, glycine betaine , reduction of water content is relative. These change can make the plant resistant to drought tension.

Key word: Drought, Gen expression, Glycine betaine, Proline, Real Time PCR , Wheat



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**Drought tension tolerance mechanism and expression of  
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