

Expression of genes related to the response of water stress in stone fruits (*Prunus spp.*)

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Stone fruits have a different behaviour depending on environmental stresses they are subjected. In order to understand the response of drought, physiological and molecular parameters of three *Prunus* hybrid rootstocks, the almond x peach hybrid (*P. amygdalus* x *P. persica*) 'Garnem' and their descendents 'P.2175' x 'Garnem'-3 trihybrid and 'P.2175' x 'Garnem'-9 trihybrid (*P. cerasifera* x [*P. amygdalus* x *P. persica*]) were investigated. Plants in pots were subjected to water stress conditions during one month. Subsequently, plants were submitted to re-watering period. For each sample time (0, 10, 15 days of treatment and 15 and 30 days of re-watering) two set of roots and floem were

taken for each genotype. Physiological responses were monitored and relative expression patterns of two genes coding for proteins related to ABA pathway and abiotic stress, a dehydrin (ppa005514m) and A20/AN21 zinc finger (ppa012373m), was analyzed by qPCR. During water stress, all genotypes showed a decrease in leaf area as well as transpiration and leaf water potential, existing significant differences along the experiment and among the genotypes. The expression in root and floem systems of dehydrin and A20/AN21 zinc finger genes showed a correlation with physiological parameters of drought response. The expression of both genes was higher in roots than floem at 15 days of drought stress. Thus the transcript level of dehydrin gene as the A20/AN21 zinc finger gene were higher in the two trihybrid genotypes than in the parent 'Garnem', thereby trihybrid genotypes could be more tolerant to drought stress than 'Garnem' genotype.