

WATERLOGGING TOLERANCE AND ANTIOXIDANT STATUS IN *Prunus* ROOTSTOCKS

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Different tolerance levels have been described among the different stone fruit rootstocks (*Prunus* spp). The difference in flooding tolerance is based on complex anatomical and biochemical adaptations. Traditionally the only screening had been done empirically through the selection of the rootstocks withstanding more time under flooding.

Antioxidant defence systems are a prominent element in plant responses to environment stresses and pathogen defence. Also, under anaerobic conditions, the aerobic organism can be severely damaged by a partial oxygen reduction, induced by normal or aberrant metabolic processes. Active oxygen species (AOS) are known to cause oxidative damage to living tissues by oxidizing cellular components. The toxic effect of AOS is circumvented by a combination of enzymatic and non-enzymatic mechanisms, that can reduce oxidative stress by converting AOS into harmless compounds. The superoxide dismutase (SOD) constitutes the first line of cellular defence, with catalase (CAT) and peroxidase (POD). The aim of the present study was to compare the antioxidant status in two *Prunus* rootstocks, Myrobalan 29C (*P. cesarifera*) considered more tolerant, and 'Felinem', an almond-peach hybrid (*P. amygdalus* x *P. persica*), considered more sensitive. The plants undergoing waterlogging were kept, both before and after flooding, in soil-water conditions similar to those of the control. The activity of SOD, was measured during the flooding period. The correlations between elevated SOD activity and abiotic stress can enhance the stress defence potential of plants submitted to potential flooding.