Title Could wound-induced xylem peroxide contribute to the postharvest loss of hydraulic conductivity in stems?

Author D.W. Etalo, J. Harbinson and U. van Meeteren

Citation ISHS Acta Horticulturae 847:287-294. 2009.

Keyword reactive oxygen species; H_2O_2; wounding signal; Arabidopsis; vascular blockage; vase life

Abstract

The hydraulic conductivity of cut flower stems decreases 4-8 h after cutting, possibly because of up-regulation of L-phenylalanine ammonia-lyase (PAL). To get more insight into the processes linking wounding with the increase in enzyme activity we explored the movement of reactive oxygen species (principally H_2O_2) in the xylem of *Arabidopsis*. Following wounding there is a rapid rise in the production of H_2O_2. The peroxide persists for a long time in the xylem, making feasible its role as a long distance signalling molecule. The link between wound-induced H_2O_2 in the xylem, up-regulation of PAL activity and decreases in hydraulic conductance postharvest needs further exploration.