

# Contents

## Focus Papers: Surviving in a Hostile Environment: Barrier Properties of Cuticles and Periderms

Title and Preface	v–vi
Schönherr J. Characterization of aqueous pores in plant cuticles and permeation of ionic solutes	2471
Kerstiens G. Water transport in plant cuticles: an update	2493
Buchholz A. Characterization of the diffusion of non-electrolytes across plant cuticles: properties of the lipophilic pathway	2501
Schreiber L. Review of sorption and diffusion of lipophilic molecules in cuticular waxes and the effects of accelerators on solute mobilities	2515
Kerstiens G. Parameterization, comparison, and validation of models quantifying relative change of cuticular permeability with physicochemical properties of diffusants	2525
Lenzian KJ. Survival strategies of plants during secondary growth: barrier properties of phellem and lenticels towards water, oxygen, and carbon dioxide	2535
Kerstiens G, Schreiber L, Lenzian KJ. Quantification of cuticular permeability in genetically modified plants	2547
<b>Research Papers</b>	
Jahnke S, Pieruschka R. Air pressure in clamp-on leaf chambers: a neglected issue in gas exchange measurements	2553
Cai X, Davis EJ, Ballif J, Liang M, Bushman E, Haraldsen V, Torabinejad J, Wu Y. Mutant identification and characterization of the laccase gene family in <i>Arabidopsis</i>	2563
Suzui N, Nakamura S, Fujiwara T, Hayashi H, Yoneyama T. A putative acyl-CoA-binding protein is a major phloem sap protein in rice ( <i>Oryza sativa</i> L.)	2571
Keller M, Smith JP, Bondada BR. Ripening grape berries remain hydraulically connected to the shoot	2577
Liu J-H, Nada K, Honda C, Kitashiba H, Wen X-P, Pang X-M, Moriguchi T. Polyamine biosynthesis of apple callus under salt stress: importance of the arginine decarboxylase pathway in stress response	2589
Mica E, Gianfranceschi L, Pé ME. Characterization of five microRNA families in maize	2601
Manetti C, Bianchetti C, Casciani L, Castro C, Di Cocco ME, Miccheli A, Motto M, Conti F. A metabonomic study of transgenic maize ( <i>Zea mays</i> ) seeds revealed variations in osmolytes and branched amino acids	2613
Quarrie SA, Pekic Quarrie S, Radosevic R, Rancic D, Kaminska A, Barnes JD, Leverington M, Ceoloni C, Dodig D. Dissecting a wheat QTL for yield present in a range of environments: from the QTL to candidate genes	2627
Tang X-C, He Y-Q, Wang Y, Sun M-X. The role of arabinogalactan proteins binding to Yariv reagents in the initiation, cell developmental fate, and maintenance of microspore embryogenesis in <i>Brassica napus</i> L. cv. Topas	2639
Persson J, Gardeström P, Näsholm T. Uptake, metabolism and distribution of organic and inorganic nitrogen sources by <i>Pinus sylvestris</i>	2651
Gordillo FJL, Aguilera J, Jiménez C. The response of nutrient assimilation and biochemical composition of Arctic seaweeds to a nutrient input in summer	2661
Chou M-X, Wei X-Y, Chen D-S, Zhou J-C. Thirteen nodule-specific or nodule-enhanced genes encoding products homologous to cysteine cluster proteins or plant lipid transfer proteins are identified in <i>Astragalus sinicus</i> L. by suppressive subtractive hybridization	2673
Fila G, Badeck F-W, Meyer S, Cerovic Z, Ghashghaie J. Relationships between leaf conductance to CO <sub>2</sub> diffusion and photosynthesis in micropropagated grapevine plants, before and after <i>ex vitro</i> acclimatization	2687
Chen J-G, Ullah H, Temple B, Liang J, Guo J, Alonso JM, Ecker JR, Jones AM. RACK1 mediates multiple hormone responsiveness and developmental processes in <i>Arabidopsis</i>	2697
Vizcay-Barrena G, Wilson ZA. Altered tapetal PCD and pollen wall development in the <i>Arabidopsis ms1</i> mutant	2709
Lasseur B, Lothier J, Djoumad A, De Coninck B, Smeekens S, Van Laere A, Morvan-Bertrand A, Van den Ende W, Prud'homme M-P. Molecular and functional characterization of a cDNA encoding fructan:fructan 6G-fructosyltransferase (6G-FFT)/fructan:fructan 1-fructosyltransferase (1-FFT) from perennial ryegrass ( <i>Lolium perenne</i> L.)	2719
Fernandez-Pascual M, Lucas MM, de Felipe MR, Boscá L, Hirt H, Golvano MP. Involvement of mitogen-activated protein kinases in the symbiosis <i>Bradyrhizobium–Lupinus</i>	2735
van Ieperen W, van Gelder A. Ion-mediated flow changes suppressed by minimal calcium presence in xylem sap in <i>Chrysanthemum</i> and <i>Prunus laurocerasus</i>	2743
Lima L, Seabra A, Melo P, Cullimore J, Carvalho H. Post-translational regulation of cytosolic glutamine synthetase of <i>Medicago truncatula</i>	2751
Ma N, Tan H, Liu X, Xue J, Li Y, Gao J. Transcriptional regulation of ethylene receptor and <i>CTR</i> genes involved in ethylene-induced flower opening in cut rose ( <i>Rosa hybrida</i> ) cv. Samantha	2763
Eilenberg H, Pnini-Cohen S, Schuster S, Movtchan A, Zilberstein A. Isolation and characterization of chitinase genes from pitchers of the carnivorous plant <i>Nepenthes khasiana</i>	2775

<i>Uauy C, Brevis JC, Dubcovsky J.</i> The high grain protein content gene <i>Gpc-B1</i> accelerates senescence and has pleiotropic effects on protein content in wheat	2785
<i>Niemi K, Sutela S, Häggman H, Scagel C, Vuosku J, Jokela A, Sarjala T.</i> Changes in polyamine content and localization of <i>Pinus sylvestris</i> ADC and <i>Suillus variegatus</i> ODC mRNA transcripts during the formation of mycorrhizal interaction in an <i>in vitro</i> cultivation system	2795
<i>Footitt S, Marquez J, Schmutz H, Baker A, Theodoulou FL, Holdsworth M.</i> Analysis of the role of <i>COMATOSE</i> and peroxisomal beta-oxidation in the determination of germination potential in <i>Arabidopsis</i>	2805
<i>Xu J-L, Wang J-M, Sun Y-Q, Wei L-J, Luo R-T, Zhang M-X, Li Z-K.</i> Heavy genetic load associated with the subspecific differentiation of japonica rice ( <i>Oryza sativa</i> ssp. <i>japonica</i> L.)	2815
<i>Wuyts N, Lognay G, Swennen R, De Waele D.</i> Nematode infection and reproduction in transgenic and mutant <i>Arabidopsis</i> and tobacco with an altered phenylpropanoid metabolism	2825
<i>Pulido A, Hernando A, Bakos F, Méndez E, Devic M, Barnabás B, Olmedilla A.</i> Hordeins are expressed in microspore-derived embryos and also during male gametophytic and very early stages of seed development	2837
<i>Moscatiello R, Mariani P, Sanders D, Maathuis FJM.</i> Transcriptional analysis of calcium-dependent and calcium-independent signalling pathways induced by oligogalacturonides	2847
<i>Ogo Y, Itai RN, Nakanishi H, Inoue H, Kobayashi T, Suzuki M, Takahashi M, Mori S, Nishizawa NK.</i> Isolation and characterization of IRO2, a novel iron-regulated bHLH transcription factor in graminaceous plants	2867
<i>Destefano-Beltrán L, Knauber D, Huckle L, Suttle J.</i> Chemically forced dormancy termination mimics natural dormancy progression in potato tuber meristems by reducing ABA content and modifying expression of genes involved in regulating ABA synthesis and metabolism	2879
<i>Wang R, Chong K, Wang T.</i> Divergence in spatial expression patterns and in response to stimuli of tandem-repeat paralogues encoding a novel class of proline-rich proteins in <i>Oryza sativa</i>	2887
<i>Shi Q, Li C, Zhang F.</i> Nicotine synthesis in <i>Nicotiana tabacum</i> L. induced by mechanical wounding is regulated by auxin	2899

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**Cover illustration:** (Top) Shoot tips of *Vitis labruscana* cv. Concord (left) and *Vitis vinifera* cv. Merlot (right). (Middle) Concord cluster at the beginning of ripening (veraison) with cross-sections showing uptake of the xylem-mobile dye basic fuchsin into a pre-veraison berry after being fed to an adjacent berry (top), movement of dye from a post-veraison berry through the receptacle (middle) and peduncle (bottom) back to the shoot. (Bottom) Displacement transducer on cracked post-veraison Concord berry and graph overlay of the berry diameter measurements made on that plant. (See Keller *et al.*, pp. 2577–2587.)