

Publications: peer-reviewed publications and book chapters

Buchner O, Moser T, Karadar M, Roach T, **Kranner I**, Holzinger A. 2015. Formation of chloroplast protrusions and catalase activity in alpine *Ranunculus glacialis* under elevated temperature and different CO₂/O₂ ratios. *Protoplasma* **###**: ###-###. Online first. DOI: 10.1007/s00709-015-0778-5. ([Weblink](#))

Colville L, Sáez CMB, Lewis GP, **Kranner I**. 2015. The distribution of glutathione and homogluthathione in leaf, root and seed tissue of 73 species across the three sub-families of the Leguminosae. *Phytochemistry* **###**: ###-###. Online first. DOI: 10.1016/j.phytochem.2015.01.011. ([Weblink](#))

Roach T, Miller R, Aigner S, **Kranner I**. 2015. Diurnal changes in the xanthophyll cycle pigments of fresh water algae correlate with the environmental hydrogen peroxide concentration rather than non-photochemical quenching. *Annals of Botany* **###**: ###-###. Online first. ([Weblink](#))

Nagel M, **Kranner I**, Neumann K, Rolletschek H, Seal Ch, Colville L, Fernández-Marín B. 2015. Genome-wide association mapping and biochemical markers reveal that seed ageing and longevity are intricately affected by genetic background and developmental and environmental conditions in barley. *Plant, Cell and Environment* **38**: 1011-1022. ([Weblink](#))

Buchner O, Stoll M, Karadar M, **Kranner I**, Neuner G. 2015. Application of heat stress *in situ* demonstrates a protective role of irradiation on photosynthetic performance in alpine plants. *Plant, Cell and Environment* **38/4**: 812-826. ([Weblink](#))

Minibayeva F, Beckett RP, **Kranner I**. 2015. Roles of apoplastic peroxidases in plant response to wounding. *Phytochemistry* **112**: 122-129. ([Weblink](#))

Roach T, Colville L, Beckett RP, Minibayeva FV, Havaux M, **Kranner I**. 2015. A proposed interplay between peroxidase, amine oxidase and lipoxygenase in the wounding-induced oxidative burst in *Pisum sativum* seedlings. *Phytochemistry* **112**: 130-138. ([Weblink](#))

Fernández-Marín B, Milla R, Martín-Robles N, Arc E, Kranner I, Becerril JM, García-Plazaola JI. 2014. Side-effects of domestication: cultivated legume seeds contain similar tocopherols and fatty acids but less carotenoids than their wild counterparts. *BMC Plant Biology* **14**: 1599. ([Weblink](#))

Kastberger G, Hoetzi Th, Maurer M, **Kranner I**, Weiss S, Weihmann F. 2014. Speeding Up Social Waves. Propagation Mechanisms of Shimmering in Giant Honeybees. *PLoS ONE* **9**: e86315. DOI:10.1371/journal.pone.0086315. ([Weblink](#))

Kranner I. 2013. Mechanisms of seed ageing. *South African Journal of Botany* **86**: 140-140. ([Weblink](#))

Kranner I and Seal CE. 2013. Salt stress, signalling and redox control in seeds. *Functional Plant Biology* **40(9)**: 848-859. ([Weblink](#))

Chen H, Osuna D, Colville L, Lorenzo O, Graeber K, Küster H, Leubner-Metzger G, Kranner I. 2013: Transcriptome-Wide Mapping of Pea Seed Ageing Reveals a Pivotal Role for Genes Related to Oxidative Stress and Programmed Cell Death. *PLoS ONE* **8(10)**: e78471. ([Weblink](#))

Fernández-Marín B, **Kranner I**, San Sebastián M, Artetxe U, Laza JM, Vilas JL, Pritchard HW, Najadaran J, Míguez F, Becerril JM and García-Plazaola JI. 2013. Evidence for the absence of enzymatic reactions in the glassy state. A case study of xanthophyll cycle pigments in the desiccation tolerant moss *Syntrichia ruralis*. *Journal of Experimental Botany* **64**: 3033-3043. ([Weblink](#))

Paulsen TR, Colville L, **Kranner I**, Daws MI, Hogstedt G, Vandvik V and Thompson K. 2013. Physical dormancy in seeds: a game of hide and seek? *New Phytologist* **198**: 496-503. ([Weblink](#))

Zagorchev L, Seal CE, **Kranner I** and Odjakova M. 2013. A central role for thiols in plant tolerance to abiotic stress. *International Journal of Molecular Sciences* **14**: 7405-7432. ([Weblink](#))

- Chen H, Pritchard HW, Seal CE, Nadarajan J, Li W, Yang X and **Kranner I**. 2012. Post desiccation germination of mature seeds of tea (*Camellia sinensis* L.) can be enhanced by pro-oxidant treatment, but partial desiccation tolerance does not ensure survival at -20 °C. **Plant Science** **184**: 36-44. ([Weblink](#))
- Colville L, Bradley EL, Lloyd AS, Pritchard HW, Castle L and **Kranner I**. 2012. Volatile fingerprints of seeds of four species indicate the involvement of alcoholic fermentation, lipid peroxidation, and Maillard reactions in seed deterioration during ageing and desiccation stress. **Journal of Experimental Botany** **63**: 6519–6530. ([Weblink](#))
- Garcia-Plazaola JI, Esteban R, Fernandez-Marin B, **Kranner I** and Porcar-Castell A. 2012. Thermal energy dissipation and xanthophyll cycles beyond the *Arabidopsis* model. **Photosynthesis Research** **113**: 89-103. ([Weblink](#))
- Kastberger G, Weihmann F, Hoetzel T, Weiss SE, Maurer M and **Kranner I**. 2012. How to Join a Wave: Decision-Making Processes in Shimmering Behavior of Giant Honeybees (*Apis dorsata*). **PLoS ONE** **7(5)**: e36736. ([Weblink](#))
- Zagorchev L, Seal CE, Kranner I and Odjakova M. 2012. Redox state of low-molecular-weight thiols and disulphides during somatic embryogenesis of salt-treated suspension cultures of *Dactylis glomerata* L. **Free Radical Research** **46**: 656-664. ([Weblink](#))
- Kranner I**, Chen H, Pritchard HW, Pearce SR and Birtić S. 2011. Inter-nucleosomal DNA fragmentation and loss of RNA integrity during seed aging. **Plant Growth Regulation** **63**: 63-72. ([Weblink](#))
- Rowena L, **Kranner I**, Panetta F, Dane, Birtic Simona, Adkins Steve W and Steadman Kathryn J. 2011. Wet-dry cycling extends seed persistence by re-instating antioxidant capacity. **Plant Soil** **338**: 511-519. ([Weblink](#))
- Kranner I** and Colville L. 2011. Metals and seeds: Biochemical and molecular implications and their significance for seed germination; invited review. **Environmental and Experimental Botany** **72**: 93-105. ([Weblink](#))
- Bahin E, Bailly C, Sotta B, **Kranner I**, Corbineau F and Leymarie J. 2011. Crosstalk between reactive oxygen species and hormonal signaling pathways regulate grain dormancy in barley. **Plant, Cell and Environment** **34**: 980-993. ([Weblink](#))
- Bailly C and **Kranner I**. 2011. Analyses of reactive oxygen species and antioxidants in relation to seed longevity and germination. In: Kermod A (ed). Seed Dormancy. **Methods and Protocols** **773**: 343-367. Springer Link. ([Weblink](#))
- Birtić S, Colville L, Pritchard HW, Pearce SR and **Kranner I**. 2011. Mathematically combined half-cell reduction potentials of low-molecular-weight thiols as markers of seed ageing. **Free Radical Research** **45**: 1093-1102. ([Weblink](#))
- Colville L and **Kranner I**. 2011. Desiccation tolerant plants as model systems to study redox regulation of protein thiols. Invited review. **Plant Growth Regulation** **62**: 241-255. ([Weblink](#))
- Kastberger G, Maurer M, Weihmann F, Ruether M, Hoetzel T, **Kranner I** and Bischof H. 2011. Stereoscopic motion analysis in densely packed clusters demonstrated for the shimmering behaviour in Giant honey bees. **Frontiers in Zoology** **8**: 3-18. ([Weblink](#))
- Long RL, **Kranner I**, Panetta FD, Birtic S, Adkins SW and Steadman KJ. 2011. Wet-dry cycling extends seed persistence by re-instating antioxidant capacity. **Plant and Soil** **338**: 511-519. ([Weblink](#))
- Roach T and **Kranner I**. 2011. Extracellular superoxide production associated with secondary root growth following desiccation of *Pisum sativum* seedlings. **Journal of Plant Physiology** **168**: 1870-1873. ([Weblink](#))
- Kranner I**, Beckett RP, Minibayeva FV and Seal CE. 2010. *Tansley review*: What is stress? Concepts, definitions and applications in seed science. **New Phytologist** **188**: 655-673. ([Weblink](#))

- Kranner I**, Kastberger G, Hartbauer M and Pritchard HW. 2010. Non-invasive diagnosis of seed viability using infrared thermography. *PNAS* **107**: 3912-3917. ([Weblink](#))
- Kranner I**, Roach T, Beckett RP, Whitaker C and Minibayeva FV. 2010. Extracellular production of reactive oxygen species during seed germination and early seedling growth in *Pisum sativum*. *Journal of Plant Physiology* **167**: 805-811. ([Weblink](#))
- Cruz de Carvalho MH, Brunet J, Bazin J, **Kranner I**, d'Arcy-Lametaa A, Zuily-Fodila Y and Contour-Ansela D. 2010. Homoglutathione synthetase and glutathione synthetase in drought-stressed cowpea leaves: expression patterns and accumulation of low-molecular-weight thiols. *Journal of Plant Physiology* **167**: 480-487. ([Weblink](#))
- Lienhard A, Mirwald L, Hoetzel T, **Kranner I** and Kastberger G. 2010. Trade-off between foraging activity and infestation by nest parasites in the primitively eusocial bee *Halictus scabiosae*. *Psyche. A Journal of Entomology*: 1-13. ([Weblink](#))
- Roach T, Beckett RP, Minibayeva FV, Colville L, Whitaker C, Chen H, Bailly C and **Kranner I**. 2010. Extracellular superoxide production, viability and redox poise in response to desiccation in recalcitrant *Castanea sativa* seeds. *Plant, Cell and Environment* **33**: 59-75. ([Weblink](#))
- Seal CE, Zammit R, Scott P, Nyamongo DO, Daws MI and **Kranner I**. 2010. Glutathione half-cell reduction potential as a seed viability marker of the potential oilseed crop *Vernonia galamensis*. *Industrial Crops and Products* **32**: 687-691. ([Weblink](#))
- Seal CE, Zammit R, Scott P and **Kranner I**. 2010. Glutathione half-cell reduction potential and α -Tocopherol as viability markers during the prolonged storage of *Suaeda maritima* seeds. *Seed Science Research* **20**: 47-53. ([Weblink](#))
- Whitaker C, Beckett RP, Minibayeva FV and **Kranner I**. 2010. Alleviation of dormancy by reactive oxygen species in *Bidens pilosa* L. Seeds. *South African Journal of Botany* **76**: 601-605. ([Weblink](#))
- Whitaker C, Beckett RP, Minibayeva FV and **Kranner I**. 2010. Production of reactive oxygen species in excised, desiccated and cryopreserved explants of *Trichilia dregeana* Sond. *South African Journal of Botany* **76**: 112-118. ([Weblink](#))
- Oracz K, El Maarouf-Bouteau H, **Kranner I**, Bogatek R, Corbineau F and Bailly C. 2009. The mechanisms involved in seed dormancy alleviation by hydrogen cyanide unravel the role of reactive oxygen species as key factors of cellular signaling during germination. *Plant Physiology* **150**: 494-505. ([Weblink](#))
- Kranner I**, Beckett RP, Hochman A. and Thomas H. Nash III. 2008. Desiccation tolerance in lichens: a review. *Bryologist* **111**: 576-593. ([Weblink](#))
- Kastberger G, Schmelzer E and **Kranner I**. 2008. Social waves in Giant honeybees repel hornets. *PLoS ONE* **3**: 1-16. ([Weblink](#))
- Roach T, Ivanova M, Beckett RP, Minibayeva FV, Green I, Pritchard HW and **Kranner I**. 2008. An oxidative burst of superoxide in embryos of recalcitrant sweet chestnut seeds induced by excision and desiccation. *Physiologia Plantarum* **133**: 131-139. ([Weblink](#))
- Seal CE, Pritchard HW and **Kranner I**. 2008. Quantification of seed oil from species with varying oil content using supercritical fluid extraction. *Phytochemical Analysis* **19**: 493-498. ([Weblink](#))
- Beckett RP, **Kranner I** and Minibayeva FV. 2007. Stress Physiology and the Symbiosis. In: Nash TH III (ed). Lichen Biology. Cambridge University Press, 2nd edition, chapter 8: 134-151.
- Daws MI, Kabadajic A, Manger KR and **Kranner I**. 2007. Extreme thermo-tolerance in seeds of desert succulents is related to maximum annual temperature. *South African Journal of Botany* **73**: 262-265. ([Weblink](#))

- Kranner I**, Birtić S, Anderson KM and Pritchard HW. 2006. Glutathione half-cell reduction potential: A universal stress marker and modulator of programmed cell death? *Free Radical Biology and Medicine* **40**: 2155-2165. ([Weblink](#))
- Birtić S and **Kranner I**. 2006. Isolation of high-quality RNA from polyphenol-, polysaccharide- and lipid-rich seeds. *Phytochemical Analysis* **17**: 144-148. ([Weblink](#))
- Kranner I** and Birtić S. 2005. A modulating role for antioxidants in desiccation tolerance. *Integrative and Comparative Biology* **45**: 734-740. ([Weblink](#))
- Kranner I**, Cram WJ, Zorn M, Wornik S, Yoshimura I, Stabentheiner E and Pfeifhofer HW. 2005. Antioxidants and photoprotection in a lichen as compared with its isolated symbiotic partners. *PNAS* **102**: 3141-3146. ([Weblink](#))
- Kranner I**. 2004. Life without water – Anhydrobiosis in plants. *International Journal of Astrobiology, Supp.* **1**: 63. ([Weblink](#))
- Kranner I**, Zorn M, Turk B, Wornik S and Batic F. 2003. Biochemical traits of lichens differing in relative desiccation tolerance. *New Phytologist* **160**: 167-176. ([Weblink](#))
- Kranner I**. 2002. Glutathione status correlates with different degrees of desiccation tolerance in three lichens. *New Phytologist* **154**: 451-460. ([Weblink](#))
- Kranner I**, Beckett RP, Wornik S, Zorn M and Pfeifhofer HW. 2002. Revival of a resurrection plant correlates with its antioxidant status. *The Plant Journal* **31**: 13-24. ([Weblink](#))
- Pfeifhofer HW, Willfurth R, Zorn M and **Kranner I**. 2002. Analysis of chlorophylls, carotenoids, and tocopherols in lichens. In: Kranner I, Beckett R and Varma A (eds). *Protocols in Lichenology. Culturing, Biochemistry, Ecophysiology and Use in Biomonitoring*. Springer Verlag, Berlin. 363-378. ([Weblink](#))
- Cuny D, Pignata ML, **Kranner I** and Beckett RP. 2001. Biomarkers of membrane damage and pollution-induced oxidative stress in lichens. In: Nimis and O.W. Purvis (ed). *Nato Science Series: Lichen Monitoring*. Kluwer, Dordrecht, The Netherlands. 97-100. ([Weblink](#))
- Varma A, Singh A, Sudha, Sahay NS, Sharma J, Roy A, Kumari M, Rana D, Thakran S, Deka D, Bharti K, Hurek T, Blechert O, Rexer KH, Kost G, Hahn A, Maier W, Walter M, Strack D and **Kranner I**. 2001. *Piriformospora indica*. An Axenically Culturable Mycorrhiza-Like Endosymbiotic Fungus. In: Hock B (ed). *The Mycota IX, Fungal Associations*. Springer Verlag, Heidelberg. 125-150. ([Weblink](#))
- Zorn M, Pfeifhofer HW, Grill D and **Kranner I**. 2001. Responses of plastid pigments to desiccation and rehydration in the desert lichen *Ramalina maciformis*. *Symbiosis* **31**: 201-211.
- Kranner I**, Zorn M, Kurokawa T, Kinoshita Y, Yamamoto Y and Yoshimura I. 2000. Responses of glutathione to desiccation in cultured mycobionts and photobionts isolated from a lichen. In: Brunold Ch, Davidian JC, DeKok L, Rennenberg H and Stulen I (eds). *Sulfur nutrition and sulfur assimilation in higher plants: Molecular, biochemical and physiological aspects*. Paul Haupt Verlag, Bern. 375-377.
- Zorn M, Pfeifhofer HW, Grill D and **Kranner I**. 2000. Glutathione and hydroxymethyl-glutathione have similar functions in protection from oxidative stress. In: Brunold Ch, Davidian JC, DeKok L, Rennenberg H and Stulen I. (eds). *Sulfur nutrition and sulfur assimilation in higher plants: Molecular, biochemical and physiological aspects*. Paul Haupt Verlag, Bern. 405-407.
- Kranner I** and Lutzoni F. 1999. Evolutionary consequences of transition to a lichen symbiotic state and physiological adaptation to oxidative damage associated with poikilohydry. In: Lerner HR (ed). *Plant Response to Environmental Stress: From Phytohormones to Genome Reorganization*. M. Dekker Inc., New York. 591-628.
- Kranner I**. 1998. Determination of glutathione, glutathione disulfide, and two related enzymes, glutathione reductase and glucose-6-phosphate dehydrogenase, in fungal and plant cells. In: Varma A (ed). *Mycorrhiza Manual*, Springer Verlag. 227-241. ([Weblink](#))

Kranner I and Beckett RP. 1998. Photobiont-mycobiont symbiotic associations: physiological aspects of the lichen symbiosis. In: Varma A (ed). *Microbes: For Health, Wealth and Sustainable Environment*. Malhotra Publishing House, New Delhi, India. 753-808.

Wonisch W, Hayn M, Schaur RJ, Tatzber F, **Kranner I**, Grill D, Winkler R, Bilinski T, Kohlwein SD and Esterbauer H. 1997. Increased stress parameter synthesis in the yeast *Saccharomyces cerevisiae* after treatment with 4-hydroxy-2-nonenal. *FEBS Letters* **405**: 11-15. ([Weblink](#))

Kranner I and Grill D. 1997. Desiccation and the subsequent recovery of cryptogams that are resistant to drought. *Phyton* **37** *Special issue* Oxygen, free radicals and environmental stress in plants: (139)-(150). ([Weblink](#))

Kranner I and Grill D. 1997. The glutathione status during recovery of desiccated lichens: In: Desiccation tolerance correlated with a high reducing capacity for glutathione disulphide? In: Cram WJ, DeKok LJ, Stulen I, Brunold C and Rennenberg H (eds). *Sulfur metabolism in higher plants. Fundamental molecular, ecophysiological and agricultural aspects*. Backhuys Publishers, Leiden, The Netherlands. 249-252.

Kranner I and Grill D. 1997. Desiccation of lichens: Changes in the glutathione status. In: Cram WJ, DeKok LJ, Stulen I, Brunold C and Rennenberg H (eds). *Sulfur metabolism in higher plants. Fundamental molecular, ecophysiological and agricultural aspects*. Backhuys Publishers, Leiden, The Netherlands. 253-255.

Kranner I and Grill D. 1996. Determination of glutathione and glutathione disulfide in lichens: a comparison of frequently used methods. *Phytochemical Analysis* **7**: 24-28. ([Weblink](#))

Kranner I and Grill D. 1996. Significance of thiol-disulfide exchange in resting stages of plant development. *Botanica Acta* (now *Plant Biology*) **109**: 8-14. ([Weblink](#))

Tausz M, **Kranner I** and Grill D. 1996. Simultaneous determination of ascorbic-acid and dehydroascorbic-acid in plant materials by high performance liquid chromatography. *Phytochemical Analysis* **7**: 69-72. ([Weblink](#))

Kranner I and Grill D. 1995. The role of glutathione and related enzymes in seeds and poikilohydric plants during desiccation and rehydration. *Acta Pharmaceutica* **2**: 157-163.

Kranner I and Grill D. 1994. Rapid changes of the glutathione status and the enzymes involved in the reduction of glutathione disulfide during the initial stages of wetting of lichens. *Cryptogamic Botany* **4**: 203-206.

Kranner I and Grill D. 1993. Content of low-molecular-weight thiols during the imbibition of pea seeds. *Physiologia Plantarum* **88**: 557-562. ([Weblink](#))

Kranner I Guttenberger H, Grill D, Delefant M and Türk R. 1992. Investigations of thiols in lichens. *Phyton* **32**, Special issue: Sulfur metabolism: (69)-(73). ([Weblink](#))

Books

Adkins SW, **Kranner I**, Daws MI and Stuppy W. 2011. Seedlings. *Biology of Plant Establishment*. CAB International, in preparation (scheduled for submission 2016).

Kranner I, Beckett RP and Varma A (eds) 2002. *Protocols in Lichenology. Culturing, Biochemistry, Ecophysiology and Use in Biomonitoring*. Springer Verlag, Berlin. Volume in the 'Springer Lab Manuals' series Springer Verlag, Berlin, ISBN 3-540-41139-9.