

PUBLICATIONS – Astrid Wingler

- Wingler A.** (2015) Comparison of signaling interactions determining annual and perennial plant growth in response to low temperature. *Frontiers in Plant Science* 5: article 794.
- Wingler A.**, Juvany M., Cuthbert C., Munné-Bosch S. (2015) Adaptation to altitude affects the senescence response to chilling in the perennial plant *Arabidopsis alpina*. *Journal of Experimental Botany* 66: 355-367.
- Nunes C., Schluepmann H., Delatte T.L., **Wingler A.**, Silva A.B., Feveiro P.S., Jansen M., Fiorani F., Wiese-Klinkenberg A., Paul M.J. (2013) Regulation of growth by the trehalose pathway: relationship to temperature and sucrose. *Plant Signaling and Behavior* 8: e26626.
- Nunes C., O'Hara L.E., Primavesi L.F., Delatte T.L., Schluepmann H., Somsen G.W., Silva A.B., Feveiro P.S., **Wingler A.**, Paul M.J. (2013) The trehalose 6-phosphate/SnRK1 signaling pathway primes growth recovery following relief of sink limitation. *Plant Physiology* **162**, 1720-1732.
- O'Hara L.E., Paul M.J., **Wingler A.** (2013) How do sugars regulate plant growth and development? New insight into the role of trehalose-6-phosphate. *Molecular Plant* **6**, 261-273.
- Wingler A.**, Paul M.J. (2013) The role of trehalose metabolism in photosynthetic development and leaf senescence. *Plastid Development in Leaves during Growth and Senescence; Advances in Photosynthesis and Respiration* **36**, chapter 24.
- Wingler A.**, Stangberg E.J., Saxena T., Mistry R. (2012) Interactions between temperature and sugars in the regulation of leaf senescence in the perennial herb *Arabidopsis alpina* L. *Journal of Integrative Plant Biology* **54**, 595–605.
- Wingler A.**, Paul M.J. (2012) Regulation of resource allocation and growth – Preface. *Journal of Experimental Botany* **63**, 3321-3323.
- Wingler A.**, Delatte T.L., O'Hara L.E., Primavesi L.F., Jhureea D., Paul M.J., Schluepmann H. (2012) Trehalose 6-phosphate is required for the onset of leaf senescence associated with high carbon availability. *Plant Physiology* **158**, 1241-1251.
- Byrne E.H., Prosser I., Muttucumaru N., Curtis T.Y., **Wingler A.**, Powers S., Halford N.G. (2012) Over-expression of GCN2-type protein kinase in wheat has profound effects on free amino acid concentration and gene expression. *Plant Biotechnology Journal* **10**, 328–340.
- Wingler A.** (2011) Interactions between flowering and senescence regulation and the influence of low temperature in Arabidopsis and crop plants. *Annals of Applied Biology* **159**, 320-338.
- Taylor L., Nunes-Nesi A., Parsley K., Leiss A., Leach G., Coates S., **Wingler A.**, Fernie A.R., Hibberd J.M. (2010) Cytosolic pyruvate, orthophosphate dikinase functions in nitrogen remobilisation during leaf senescence and limits individual seed growth and nitrogen content. *Plant Journal* **62**, 641–652.
- Paul M., Jhureea D., Zhang Y., Primavesi L., Delatte T., Schluepmann H., **Wingler A.** (2010) Up-regulation of biosynthetic processes associated with growth by trehalose 6-phosphate. *Plant Signaling and Behavior* **5**, 1-7.
- Wingler A.***, Purdy S.J.*, Edwards S.-A., Chardon F., Masclaux-Daubresse C. (2010) QTL analysis for sugar-regulated leaf senescence supports flowering-dependent and -independent senescence pathways. *New Phytologist* **185**, 420–433. *Contributed equally.
- Zhang Y., Primavesi L.F., Jhureea D., Andralojc P.J., Mitchell R.A.C., Powers S.J., Schluepmann H., Delatte T., **Wingler A.**, Paul M.J. (2009) Inhibition of Snf1-related protein kinase (SnRK1) activity and regulation of metabolic pathways by trehalose 6-phosphate. *Plant Physiology* **149**, 1860-1871.
Recommended by the Faculty of 1000.
- Wingler A.**, Masclaux-Daubresse C., Fischer A.M. (2009) Sugars, senescence and ageing in plants and heterotrophic organisms. *Journal of Experimental Botany* **60**, 1063-1066.
- Wingler A.**, Roitsch T. (2008) Metabolic regulation of leaf senescence: interactions of sugar signalling with biotic and abiotic stress responses. *Plant Biology* **10**, 50-62.
- Wingler A.** (2007) Transcriptional or post-transcriptional regulation – how does a plant know when to senesce? *New Phytologist* **175**, 7-9.
- Masclaux-Daubresse C., Purdy S., Lemaitre T., Pourtau N., Taconnat L., Renou J.-P., **Wingler A.** (2007) Genetic variation suggests interaction between cold acclimation and metabolic regulation of leaf senescence. *Plant Physiology* **143**, 434-446.

- Pourtau N., Jennings R., Pelzer E., Pallas J., **Wingler A.** (2006) Effect of sugar-induced senescence on gene expression and implications for the regulation of senescence in *Arabidopsis*. *Planta* **224**, 556-568.
- Wingler A.**, Purdy S., MacLean J.A., Pourtau N. (2006) The role of sugars in integrating environmental signals during the regulation of leaf senescence. *Journal of Experimental Botany* **57**, 391-399.
- Wingler A.**, Brownhill E., Pourtau N. (2005) Mechanisms of the light-dependent induction of cell death in tobacco plants with delayed senescence. *Journal of Experimental Botany* **56**, 2897-2905.
- Diaz C., Purdy S., Christ A., Morot-Gaudry J.-F., **Wingler A.**, Masclaux-Daubresse C. (2005) Characterization of markers to determine the extent and variability of leaf senescence in *Arabidopsis thaliana*: a metabolic profiling approach. *Plant Physiology* **138**, 898-908.
- Levey S., **Wingler A.** (2005) Natural variation in the regulation of leaf senescence and relation to other traits in *Arabidopsis*. *Plant, Cell and Environment* **28**, 223-231.
- Pourtau N., Marès M., Purdy S., Quentin N., Ruël A., **Wingler A.** (2004) Interactions of abscisic acid and sugar signalling in the regulation of leaf senescence. *Planta* **219**, 765-772.
- Kasinathan V., **Wingler A.** (2004) Effect of reduced arginine decarboxylase activity on salt tolerance and on polyamine formation during salt stress in *Arabidopsis thaliana*. *Physiologia Plantarum* **121**, 101-107.
- Wingler A.**, Marès M., Pourtau N. (2004) Spatial patterns and metabolic regulation of photosynthetic parameters during leaf senescence. *New Phytologist* **161**, 781-789.
- Wingler A.** (2002) The function of trehalose biosynthesis in plants. *Phytochemistry*, **60**, 437-440.
- Brodmann D., Schuller A., Ludwig-Müller J., Aeschbacher R.A., Wiemken A., Boller T., **Wingler A.** (2002) Induction of trehalase in *Arabidopsis* plants infected with the trehalose-producing pathogen *Plasmodiophora brassicae*. *Molecular Plant-Microbe Interactions* **15**, 693-700.
- Vogel G., Fiehn O., Jean-Richard-dit-Bressel L., Boller T., Wiemken A., Aeschbacher R.A., **Wingler A.** (2001) Trehalose metabolism in *Arabidopsis*: Occurrence of trehalose and molecular cloning and characterisation of trehalose-6-phosphate synthase homologues. *Journal of Experimental Botany* **52**, 1817-1826.
- Fritzius T., Aeschbacher R. A., Wiemken A., **Wingler A.** (2001) Induction of *ApL3* expression by trehalose complements the starch-deficient *Arabidopsis* mutant *adg2-1* lacking *ApL1*, the large subunit of ADP-glucose pyrophosphorylase. *Plant Physiology* **126**, 883-889.
- Müller J., Aeschbacher R. A., **Wingler A.**, Boller T., Wiemken A. (2001) Trehalose and trehalase in *Arabidopsis*. *Plant Physiology* **125**, 1086-1093.
- Wingler A.**, Lea P. J., Quick, W. P., Leegood R. C. (2000) Photorespiration - metabolic pathways and their role in stress protection. *Philosophical Transactions of the Royal Society of London Series B* **355**, 1517-1529. **In the list of the 50 most-cited articles:** <http://rstb.royalsocietypublishing.org/reports/most-cited>.
- Chen Z.-H., Walker R. P., Acheson R. M., Técsi L. I., **Wingler A.**, Lea P. J., Leegood R. C. (2000) Are isocitrate lyase and phosphoenolpyruvate carboxykinase involved in gluconeogenesis during senescence of barley leaves and cucumber cotyledons? *Plant and Cell Physiology* **41**, 960-967.
- Wingler A.**, Fritzius T., Wiemken A., Boller T., Aeschbacher R. A. (2000) Trehalose induces the ADP-glucose pyrophosphorylase gene, *ApL3*, and starch synthesis in *Arabidopsis*. *Plant Physiology* **124**, 105-114.
- Wingler A.**, Walker R. P., Chen Z.-H., Leegood R. C. (1999) Phosphoenolpyruvate carboxykinase is involved in the decarboxylation of aspartate in the bundle sheath of maize. *Plant Physiology* **120**, 539-546.
- Wingler A.**, Ann V. J., Lea P. J., Leegood R. C. (1999) Serine:glyoxylate aminotransferase exerts no control on photosynthesis. *Journal of Experimental Botany* **50**, 719-722.
- Bungard R. A., **Wingler A.**, Morton J. D., Andrews M., Press M. C., Scholes J. D. (1999) Ammonium can stimulate nitrate and nitrite reductase in the absence of nitrate in *Clematis vitalba*. *Plant, Cell and Environment* **22**, 859-866.
- Wingler A.**, Quick W. P., Bungard R. A., Bailey K. J., Lea P. J., Leegood R. C. (1999) The role of photorespiration during drought stress: An analysis utilising barley mutants with reduced activities of photorespiratory enzymes. *Plant, Cell and Environment* **22**, 361-373.
- Wingler A.**, Lea P. J., Leegood R. C. (1999) Photorespiratory metabolism of glyoxylate and formate in glycine-accumulating mutants of barley and *Amaranthus edulis*. *Planta* **207**, 518-526.

- Wingler A.**, von Schaewen A., Leegood R. C., Lea P. J., Quick W. P. (1998) Regulation of leaf senescence by cytokinin, sugars, and light. Effects on NADH-dependent hydroxypyruvate reductase. *Plant Physiology* **116**, 329-335.
- Wingler A.**, Lea P. J., Leegood R. C. (1997) Control of photosynthesis in barley plants with reduced activities of glycine decarboxylase. *Planta* **202**, 171-178.
- Hampp R., **Wingler A.** (1997) The role of mycorrhiza. In: A Molecular Approach to Primary Metabolism in Higher Plants (C. H. Foyer and W. P. Quick, eds.), Taylor & Francis, London, 275-292.
- Hampp R., Ecke M., Schaeffer C., Wallenda T., **Wingler A.**, Kottke I., Sundberg B. (1996) Axenic mycorrhization of wild type and transgenic hybrid aspen expressing T-DNA indoleacetic acid-biosynthetic genes. *Trees* **11**, 59-64.
- Wingler A.**, Wallenda T., Hampp R. (1996) Mycorrhiza formation on Norway spruce (*Picea abies*) roots affects the pathway of anaplerotic CO₂ fixation. *Physiologia Plantarum* **96**, 699-705.
- Wallenda T., Schaeffer C., Einig W., **Wingler A.**, Hampp R., Seith B., George E., Marschner H. (1996) Effects of varied soil nitrogen supply on Norway spruce (*Picea abies* [L.] Karst.). II. Carbon metabolism in needles and mycorrhizal roots. *Plant and Soil* **186**, 361-369.
- Seith B., George E., Marschner H., Wallenda T., Schaeffer C., Einig W., **Wingler A.**, Hampp R. (1996) Effects of varied soil nitrogen supply on Norway spruce (*Picea abies* [L.] Karst.). I. Shoot and root growth and nutrient uptake. *Plant and Soil* **184**, 291-298.
- Wingler A.**, Einig W., Schaeffer C., Wallenda T., Hampp R., Wallander H., Nylund J.-E. (1994) Influence of different nutrient regimes on the regulation of carbon metabolism in Norway spruce [*Picea abies* (L.) Karst.] seedlings. *New Phytologist* **128**, 323-330.
- Wingler A.**, Guttenberger M., Hampp R. (1993) Determination of mannitol in ectomycorrhizal fungi and ectomycorrhizas by enzymatic micro-assays. *Mycorrhiza* **3**, 69-73.