C U R R I C U L U M V I T A E November 2017

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Research discipline:
Plant Physiology, Plant Ecophysiology

Research topics:
Functional plant diversity, photosynthetic pathway biodiversity.
Evolution and ecophysiology of CAM photosynthesis.
Plant stress physiology and metabolic plasticity.
Tropical plant responses to elevated [CO_2] and elevated temperature.

Academic qualifications, awards, positions held:

(1972) Staatsexamen in Biology and Chemistry, Technical University of Darmstadt, Germany.

(1972-75) Doctoral fellowship, Technical University of Darmstadt.

(1975) Dr. rer. nat., graded *summa cum laude*, Botany Institute, Technical University of Darmstadt; U. Lüttge's lab.

(1975-77) Research Scientist (Wissenschaftlicher Mitarbeiter, supported by the Deutsche Forschungsgemeinschaft [German Grant Committee]), Botany Institute, Technical University of Darmstadt.

(1978-79) Postdoctoral fellow with C.B. Osmond, Department of Environmental Biology, Research School of Biological Sciences, Australian National University, Canberra, Australia.

(1980) Postdoctoral research associate with G.E. Edwards, Department of Horticulture, University of Wisconsin, Madison, USA.

(1981-83) Habilitation Fellowship given by the Deutsche Forschungsgemeinschaft, Botany Institute, University of Würzburg, Germany.

(1981) Heinz-Maier-Leibnitz-Prize given by the German Federal Ministry of Education and Science for research in photosynthesis.

(1983) Dr. rer. nat. habil., Habilitation in Botany, Faculty of Biology, University of Würzburg.

(1983) Heisenberg Fellowship given by the Deutsche Forschungsgemeinschaft, Botany Institute, University of Würzburg.

(1985) Professor of Botany (C 3), Faculty of Biology, University of Würzburg.

(1989/90) Offered, but declined position of Full Professor (C 4) in Botany/Physiological Ecology, University of Heidelberg, Germany.

(1991) Staff Scientist, Plant Physiology Program, Smithsonian Tropical Research Institute, Republic of Panama.

(1998) Senior Staff Scientist, Smithsonian Tropical Research Institute, Republic of Panama.

(2002) Highly cited researcher in the category Plant & Animal Science according to ISIHighlycited.com.

List of Publications

1972

1. Winter K, von Willert DJ (1972) NaCl-induzierter Crassulaceensäurestoff-wechsel bei *Mesembryanthemum crystallinum*. Zeitschrift für Pflanzenphysiologie 67: 166-170

1973

2. Winter K (1973) Zum Problem der Ausbildung des Crassulaceen-Säurestoffwechsels bei *Mesembryanthemum crystallinum* unter NaCl-Einfluß. Planta 109: 135-145

3. Winter K (1973) CO_2-Fixierungsreaktionen bei der Salzpflanze *Mesembryanthemum crystallinum* unter variierten Außenbedingungen. Planta 114: 75-85

4. Winter K (1973) NaCl-induzierter Crassulaceen-Säurestoffwechsel bei einer weiteren Aizoacee: *Carpobrotus edulis*. Planta 115: 187-188

5. Winter K (1973) CO_2-Gaswechsel von an hohe Salinität adaptiertem *Mesembryanthemum crystallinum* bei Rückführung in glykisches Anzuchtmedium. Berichte der Deutschen Botanischen Gesellschaft 86: 467-476

6. Osmond CB, Allaway WG, Sutton BG, Troughton JH, Queiroz O, Lüttge U, Winter K (1973) Carbon isotope discrimination in photosynthesis of CAM-plants. Nature 246: 41-42

1974

7. Winter K (1974) NaCl-induzierter Crassulaceen-Säurestoffwechsel bei der Salzpflanze *Mesembryanthemum crystallinum*. Abhängigkeit des CO_2-Gaswechsels von der Tag/Nachttemperatur und von der Wasserversorgung der Pflanzen. Oecologia 15: 383-392

8. Winter K (1974) Wachstum und Photosyntheseleistung der Halophyten *Mesembryanthemum nodiflorum* L. and *Suaeda maritima* (L.) Dum. bei variierter NaCl-Salinität des Anzuchtmediums. Oecologia 17: 317-324

9. Winter K (1974) Evidence for the significance of crassulacean acid metabolism as an adaptive mechanism to water stress. Plant Science Letters 3: 279-281

10. Winter K (1974) Einfluß von Wasserstreß auf die Aktivität der Phosphoenolpyruvat Carboxylase bei *Mesembryanthemum crystallinum* L. Planta 121: 147-153

11. Winter K, Lüttge U, Ball E (1974) $^{14}CO_2$ dark fixation in the halophytic species *Mesembryanthemum crystallinum*. Biochimica et Biophysica Acta 343: 465-468

1975

12. Winter K (1975) Die Rolle des Crassulaceen-Säurestoffwechsels als biochemische Grundlage zur Anpassung von Halophyten an Standorte hoher Salinität. Dissertation, Technische Hochschule Darmstadt 1975

1976

13. Winter K, Lüttge U (1976) Balance between C_3 and CAM pathway of photosynthesis. In: Lange OL, Kappen L, Schulze ED (eds) Water and plant life - problems and modern approaches. Springer, Berlin, pp 323-334

14. Winter K, Lüttge U (1976) Malate accumulation in leaf slices of *Mesembryanthemum crystallinum* in relation to osmotic gradients between the cells and the medium. Australian Journal of Plant Physiology 3: 653-663

15. Winter K, Troughton JH, Card KA (1976) $\delta^{13}C$ values of grass species collected in the northern Sahara desert. Oecologia 25: 115-123

16. Winter K, Troughton JH, Evenari M, Läuchli A, Lüttge U (1976) Mineral ion composition and occurrence of CAM like diurnal malate fluctuations in plants of coastal and desert habitats of Israel and the Sinai. Oecologia 25: 125-143

1977

17. Winter K, Kramer D, Troughton JH, Card KA, Fischer K (1977) C_4 pathway of photosynthesis in a member of the Polygonaceae*: Calligonum persicum* (Boiss. & Buhse) Boiss. Zeitschrift für Pflanzenphysiologie 81: 341-346

1978

18. Winter K (1978) Short-term fixation of ^{14}carbon by the submerged aquatic angiosperm *Potamogeton pectinatus*. Journal of Experimental Botany 29: 1169-1172

19. Winter K, Troughton JH (1978) Photosynthetic pathways in plants of coastal and inland habitats of Israel and the Sinai. Flora 167: 1-34

20. Winter K, Troughton JH (1978) Carbon assimilation pathways in *Mesembryanthemum nodiflorum* L. under natural conditions. Zeitschrift für Pflanzenphysiologie 88: 153-162

21. Winter K, Greenway H (1978) Phosphoenolpyruvate carboxylase from *Mesembryanthemum crystallinum*, its isolation and inactivation in vitro. Journal of Experimental Botany 29: 539-546

22. Greenway H, Winter K, Lüttge U (1978) Phosphoenolpyruvate carboxylase during development of crassulacean acid metabolism and during a diurnal cycle in *Mesembryanthemum crystallinum*. Journal of Experimental Botany 29: 547-559

23. Winter K, Lüttge U, Winter E, Troughton JH (1978) Seasonal shift from C_3 photosynthesis to crassulacean acid metabolism in *Mesembryanthemum crystallinum* growing in its natural environment. Oecologia 34: 225-237

1979

24. Winter K (1979) Photosynthetic and water relationships of higher plants in a saline environment. In: Jefferies RL, Davy AJ (eds) Ecological processes in coastal environments. Blackwell, Oxford, pp 297-320

25. Winter K (1979) δ^{13}C values of some succulent plants from Madagascar. Oecologia 40: 103-112

26. Winter K (1979) Effect of different CO_2 regimes on the induction of crassulacean acid metabolism in *Mesembryanthemum crystallinum*. Australian Journal of Plant Physiology 6: 589-594

27. Winter K, Lüttge U (1979) C_3-Photosynthese und Crassulaceen-Säurestoffwechsel bei *Mesembryanthemum crystallinum*. Berichte der Deutschen Botanischen Gesellschaft 92: 117-132

28. Osmond CB, Ludlow MM, Davies R, Cowan IR, Powles SB, Winter K (1979) Stomatal responses to humidity in *Opuntia inermis* in relation to control of CO_2 and H_2O exchange patterns. Oecologia 41: 65-76

1980

29. Winter K (1980) Day/night changes in the sensitivity of phosphoenolpyruvate carboxylase to malate during crassulacean acid metabolism. Plant Physiology 66: 792-796

30. Winter K (1980) CO_2 and water vapor exchange in the crassulacean acid metabolism plant *Kalanchoe pinnata* during a prolonged light period. Plant Physiology 66: 917-921

31. Osmond CB, Winter K, Powles SB (1980) Adaptive significance of carbon dioxide cycling during photosynthesis in waterstressed plants. In: Turner NC, Kramer PJ (eds) Adaptation of plants to water and high temperature stress. Wiley, New York, pp 139-154

1981

32. Winter K (1981) CO_2 and water vapor exchange, malate content and $\delta^{\square\blacktriangleleft}$C value of *Cicer arietinum* grown under two water regimes. Zeitschrift für Pflanzenphysiologie 101: 421-430

33. Winter K (1981) Change in properties of phosphoenolpyruvate carboxylase from the crassulacean acid metabolism plant *Mesembryanthemum crystallinum* after isolation. Australian Journal of Plant Physiology 8: 115-119

34. Winter K (1981) C_4 plants of high biomass in arid regions of Asia - occurrence of C_4 photosynthesis in Chenopodiaceae and Polygonaceae from the Middle East and USSR. Oecologia 48: 100-106

35. Winter K, Edwards GE, Holtum JAM (1981) Nocturnal accumulation of malic acid occurs in mesophyll tissue without proton transport to epidermal tissue in the inducible crassulacean acid metabolism plant *Mesembryanthemum crystallinum*. Plant Physiology 68: 355-357

36. Winter K, Osmond CB, Pate JS (1981) Coping with salinity. In: Pate JS, McComb AJ (eds) The biology of Australian plants. University of Western Australia Press, Nedlands, pp 88-113

37. Edwards GE, Usuda H, Winter K, Foster J (1981) Basis for comparative studies of metabolite transport in photosynthesis. In: Akoyunoglou G (ed) Photosynthesis IV, regulation of carbon metabolism. Balaban International Science Services, Philadelphia, pp 573-580

1982

38. Winter K (1982) Properties of phosphoenolpyruvate carboxylase in rapidly prepared, desalted leaf extracts of the crassulacean acid metabolism plant *Mesembryanthemum crystallinum*. Planta 154: 298-308

39. Winter K (1982) Regulation of PEP carboxylase in CAM plants. In: Ting IP, Gibbs M (eds) Crassulacean acid metabolism. American Society of Plant Physiologists, Rockville, pp 153-169

40. Winter K (1982) C_3-Photosynthese und Crassulaceen-Säurestoffwechsel bei *Mesembryanthemum crystallinum*. In: Heber U, Lange OL, Fürchtbauer W, Schreiber U (eds) Photosynthese - Ergebnisse eines Rundgesprächs in Würzburg. Deutsche Forschungsgemeinschaft, Würzburg, pp 43-47

41. Winter K, Tenhunen JD (1982) Characteristics of carbon dioxide uptake following nocturnal acidification in the crassulacean acid metabolism plant *Kalanchoe daigremontiana*. Plant Physiology 70: 1718-1722

42. Winter K, Foster JG, Edwards GE, Holtum JAM (1982) Intracellular localization of enzymes of carbon metabolism in *Mesembryanthemum crystallinum* exhibiting C_3 photosynthetic characteristics or performing crassulacean acid metabolism. Plant Physiology 69: 300-307

43. Winter K, Foster JG, Schmitt MS, Edwards GE (1982) Activity and quantity of ribulose bisphosphate carboxylase- and phosphoenolpyruvate carboxylase-protein in two crassulacean acid metabolism plants in relation to leaf age, nitrogen nutrition and point in time during a day/night cycle. Planta 154: 309-317

44. Winter K, Holtum JAM, Edwards GE, O'Leary MH (1982) Effect of low relative humidity on $\delta^{13}C$ value in two C_3 grasses and in *Panicum milioides*, a C_3-C_4 intermediate species. Journal of Experimental Botany 33: 88-91

45. Winter K, Schmitt M, Edwards GE (1982) *Microstegium vimineum*, a shade adapted C_4 grass. Plant Science Letters 24: 311-318

46. Winter K, Usuda H, Tsuzuki M, Schmitt M, Edwards GE, Thomas RJ, Evert RF (1982) Influence of nitrate and ammonia on photosynthetic characteristics and leaf anatomy of *Moricandia arvensis*. Plant Physiology 70: 616-625

47. Edwards GE, Foster JG, Winter K (1982) Activity and intracellular compartmentation of enzymes in CAM plants. In: Ting IP, Gibbs M (eds) Crassulacean acid metabolism. American Society of Plant Physiologists, Rockville, pp 92-111

48. Foster JG, Edwards GE, Winter K (1982) Changes in levels of phosphoenolpyruvate carboxylase with induction of crassulacean acid metabolism in *Mesembryanthemum crystallinum* L. Plant and Cell Physiology 23: 585-594

49. Holtum JAM, Winter K (1982) Activity of enzymes of carbon metabolism during the induction of crassulacean acid metabolism in *Mesembryanthemum crystallinum*. Planta 155: 8-16

50. Osmond CB, Winter K, Ziegler H (1982) Functional significance of different pathways of CO_2 fixation in photosynthesis. In: Lange OL, Nobel PS, Osmond CB, Ziegler H (eds) Physiological plant ecology II, vol 12B, encyclopedia of plant physiology. Springer, Berlin, pp 479-547

51. Tsuzuki M, Miyachi S, Winter K, Edwards GE (1982) Localization of carbonic anhydrase in crassulacean acid metabolism plants. Plant Science Letters 24: 211-218

1983

52. Winter K (1983) Properties of PEPC in rapidly prepared leaf extracts of the CAM plant *Mesembryanthemum crystallinum*. Physiologie Végétale 21: 907-909

53. Winter K, Wallace BJ, Stocker GC, Roksandic Z (1983) Crassulacean acid metabolism in Australian vascular epiphytes and some related species. Oecologia 57: 129-141

54. Demmig B, Winter K (1983) Photosynthetic characteristics of chloroplasts from *Mesembryanthemum crystallinum* L., a halophilic plant capable of crassulacean acid metabolism. Planta 159: 66-76

55. Demmig B, Winter K (1983) Chloroplasts from *Mesembryanthemum crystallinum*, a halophilic plant capable of crassulacean acid metabolism. Hoppe-Seyler's Zeitschrift für Physiologische Chemie 364: 1115-1116

56. Foster JG, Edwards GE, Winter K (1983) Regulation of carbon metabolism in *Mesembryanthemum crystallinum*. In: Marcelle R, Clijsters H, van Poucke M (eds) Effects of stress on photosynthesis. Junk, The Hague, pp 175-183

1985

57. Winter K (1985) Crassulacean acid metabolism. In: Barber J, Baker NR (eds) Photosynthetic mechanisms and the environment. Elsevier, Amsterdam, pp 329-387

58. Winter K, Medina E, Garcia V, Mayoral ML, Muniz R (1985) Crassulacean acid metabolism in roots of a leafless orchid, *Campylocentrum tyrridion* Garay & Dunsterv. Journal of Plant Physiology 118: 73-78

59. Köster S, Winter K (1985) Light scattering as an indicator of the energy state in leaves of the crassulacean acid metabolism plant *Kalanchoe pinnata*. Plant Physiology 79: 520-524

1986

60. Winter K, Osmond CB, Hubick KT (1986) Crassulacean acid metabolism in the shade. Studies on an epiphytic fern, *Pyrrosia longifolia*, and other rainforest species from Australia. Oecologia 68: 224-230

61. Winter K, Schröppel-Meier G, Caldwell MM (1986) Respiratory CO_2 as carbon source for nocturnal acid synthesis at high temperatures in three species exhibiting crassulacean acid metabolism. Plant Physiology 81: 390-394

62. Winter K, Schramm MJ (1986) Analysis of stomatal and nonstomatal components in the environmental control of CO_2 exchange in leaves of *Welwitschia mirabilis*. Plant Physiology 82: 173-178

63. Winter K, Arron GP, Edwards GE (1986) Malate decarboxylation by mitochondria of the inducible crassulacean acid metabolism plant *Mesembryanthemum crystallinum*. Plant and Cell Physiology 27: 1533-1539

64. Demmig B, Winter K (1986) Sodium, potassium, chloride and proline concentrations of chloroplasts isolated from a halophyte, *Mesembryanthemum crystallinum* L. Planta 168: 421-426

65. Rygol J, Büchner KH, Winter K, Zimmermann U (1986) Day/night variations in turgor pressure in individual cells of *Mesembryanthemum crystallinum* L. Oecologia 69: 171-175

1987

66. Winter K (1987) Gradient in the degree of crassulacean acid metabolism within leaves of *Kalanchoe daigremontiana*. Planta 172: 88-90

67. Winter K, Demmig B (1987) Reduction state of Q and nonradiative energy dissipation during photosynthesis in leaves of a crassulacean acid metabolism plant, *Kalanchoe daigremontiana* Hamet et Perr. Plant Physiology 85: 1000-1007

68. Demmig B, Winter K, Krüger A, Czygan FC (1987) Photoinhibition and zeaxanthin formation in intact leaves. A possible role of the xanthophyll cycle in the dissipation of excess light energy. Plant Physiology 84: 218-224

69. Earnshaw M, Winter K, Ziegler H, Stichler W, Cruttwell NEG, Kerenga K, Cribb PJ, Wood J, Croft JR, Carver KA, Gunn TC (1987) Altitudinal changes in the incidence of crassulacean acid metabolism in vascular epiphytes and related life forms in Papua New Guinea. Oecologia 73: 566-572

70. Höfner R, Vasquez-Moreno L, Winter K, Bohnert HJ, Schmitt JM (1987) Induction of crassulacean acid metabolism in *Mesembryanthemum crystallinum* by high salinity: mass increase and de novo synthesis of PEP carboxylase. Plant Physiology 83: 915-919

71. Rygol J, Winter K, Zimmermann U (1987) Relationship between turgor pressure and tissue acidity in mesophyll cells of intact leaves of a crassulacean acid metabolism plant, *Kalanchoe daigremontiana* Hamet et Perr. Planta 142: 487-493

1988

72. Demmig B, Winter K (1988) Light response of CO_2 assimilation, reduction state of Q, and radiationless energy dissipation in intact leaves. Australian Journal of Plant Physiology 15: 151-162

73. Demmig B, Winter K (1988) Characterization of three components of nonphotochemical fluorescence quenching and their response to photoinhibition. Australian Journal of Plant Physiology 15: 163-177

74. Demmig B, Winter K, Krüger A, Czygan FC (1988) Zeaxanthin and the heat dissipation of excess light energy in *Nerium oleander* exposed to a combination of high light and water stress. Plant Physiology 87: 17-24

75. Gunn TC, Earnshaw MJ, Carver KA, Winter K (1988) Ecophysiology of tropical alpine plants: objectives of the Oakham School expedition to Papua New Guinea, 1984. Science in New Guinea 14: 48-49

76. Adams WW, Winter K, Lanzl A (1988) Light and the maintenance of photosynthetic competence in leaves of *Populus balsamifera* during short-term exposures to high concentrations of SO_2. Planta 177: 91-97

1989

77. Adams WW, Diaz M, Winter K (1989) Diurnal changes in photochemical efficiency, the reduction state of Q, radiationless energy dissipation, and non-photochemical fluorescence quenching in cacti exposed to natural sunlight in northern Venezuela. Oecologia 80: 553-561

78. Demmig-Adams B, Winter K, Krüger A, Czygan FC (1989) Light stress and photoprotection related to the carotenoid zeaxanthin in higher plants. In: Briggs WR (ed) Photosynthesis. Liss, New York, pp 375-391

79. Demmig-Adams B, Winter K, Krüger A, Czygan FC (1989) Light response of CO_2 assimilation, dissipation of excess excitation energy, and zeaxanthin content of sun and shade leaves. Plant Physiology 90: 881-886

80. Demmig-Adams B, Winter K, Krüger A, Czygan FC (1989) Zeaxanthin and the induction and relaxation kinetics of the dissipation of excess excitation energy in leaves in 2% O_2, 0% CO_2. Plant Physiology 90: 887-893

81. Demmig-Adams B, Winter K, Krüger A, Czygan FC (1989) Zeaxanthin synthesis, energy dissipation, and photoprotection of photosystem II at chilling temperatures. Plant Physiology 90: 894-898

82. Demmig-Adams B, Adams WW, Winter K, Meyer A, Schreiber U, Pereira JS, Krüger A, Czygan FC, Lange OL (1989) Photochemical efficiency of photosystem II, photon yield of O_2 evolution, photosynthetic capacity, and carotenoid composition during the midday depression of net CO_2 uptake in *Arbutus unedo* growing in Portugal. Planta 177: 377-387

83. Demmig-Adams B, Winter K, Winkelmann E, Krüger A, Czygan FC (1989) Photosynthetic characteristics and the ratios of chlorophyll, ß-carotene, and the components of the xanthophyll cycle upon a sudden increase in growth light regime in several plant species. Botanica Acta 102: 319-325

84. Winter K, Awender G (1989) Crassulacean acid metabolism and photochemical efficiency of photosystem II in the adaxial and abaxial parts of the succulent leaves of *Kalanchoe daigremontiana* grown at four photon flux densities. Plant Physiology 90: 948-954

85. Winter K, Königer M (1989) Dithiothreitol, an inhibitor of violaxanthin de-epoxidation, increases the susceptibility of leaves of *Nerium oleander* to photoinhibition of photosynthesis. Planta 180: 24-31

86. Winter K, Winkelmann E, Königer M (1989) Zur Rolle der Photoinhibition bei der Wirkung von Luftschadstoffen auf den Photosyntheseapparat. Proc. 1. Statusseminar der PBWU zum Forschungsschwerpunkt Waldschäden. GSF, München-Neuherberg, pp 207-214

1990

87. Adams WW, Demmig-Adams B, Winter K (1990) Relative contribution of zeaxanthin-related and zeaxanthin-unrelated types of “high-energy-state” quenching of chlorophyll fluorescence in spinach leaves exposed to various environmental conditions. Plant Physiology 92: 301-309

88. Adams WW, Demmig-Adams B, Winter K, Schreiber U (1990) F_v/F_M ratio of PSII chlorophyll fluorescence from leaves, measured at ambient temperature and at 77K, as an indicator of the photon yield of photosynthesis. Planta 180: 166-174

89. Adams WW, Winter K, Schreiber U, Schramel P (1990) Photosynthesis and chlorophyll fluorescence characteristics in relationship to changes in pigment and element composition of leaves of *Platanus occidentalis* L. during autumnal leaf senescence. Plant Physiology 93: 1184-1190

90. Cleland RE, Demmig-Adams B, Adams WW, Winter K (1990) Phosphorylation state of the light-harvesting chlorophyll protein complex of photosystem II and fluorescence characteristics in *Monstera deliciosa* Liebm. and *Glycine max* (L.) Merril in response to light. Australian Journal of Plant Physiology 17: 589-599

91. Demmig-Adams B, Adams WW, Heber U, Neimanis S, Winter K, Krüger A, Czygan FC, Bilger W, Björkman O (1990) Inhibition of zeaxanthin formation and of rapid changes in radiationless energy dissipation by dithiothreitol in spinach leaves and chloroplasts. Plant Physiology 92: 293-301

92. Winter K, Lesch M, Diaz M (1990) Changes in xanthophyll cycle components and in fluorescence yield in leaves of a crassulacean acid metabolism plant, *Clusia rosea* Jacq., throughout a 12-hour photoperiod of constant irradiance. Planta 182: 181-185

93. Winter K, Königer M, Lesch M (1990) Growth, photosynthesis, and pigment content of *Gossypium hirsutum* under high irradiance stress. In: Payer HD, Pfirrmann T, Mathy P (eds) Environmental research with plants in closed chambers. Commission of the European Communities, Brussels, pp 236-239

1991

94. Königer M, Winter K (1991) Carotenoid composition and photon-use efficiency of photosynthesis in *Gossypium hirsutum* L. grown under conditions of slightly suboptimum leaf temperatures and high levels of irradiance. Oecologia 87: 349-356

95. Winter K, Gademann R (1991) Daily changes in CO_2 and water vapor exchange, chlorophyll fluorescence, and leaf water relations in the halophyte *Mesembryanthemum crystallinum* during the induction of crassulacean acid metabolism in response to high NaCl salinity. Plant Physiology 95: 768-776

96. Winter K, Königer M (1991) Dry matter production and photosynthetic capacity in *Gossypium hirsutum* L. under conditions of slightly suboptimum leaf temperatures and high levels of irradiance. Oecologia 87: 190-197

1992

97. Baur B, Dietz KJ, Winter K (1992) Regulatory protein phosphorylation of phosphoenolpyruvate carboxylase in the facultative crassulacean-acid-metabolism plant *Mesembryanthemum crystallinum* L. European Journal of Biochemistry 209: 95-101

98. Jung I, Winter K (1992) Mineral nutrient deficiency increases the sensitivity of photosynthesis to sulphur dioxide in needles of a coniferous tree, *Abies nordmanniana*. Oecologia 90: 70-73

99. Winter K, Lesch M (1992) Diurnal changes in chlorophyll a fluorescence and carotenoid composition in *Opuntia ficus-indica*, a CAM plant, and three C_3 species in Portugal during summer. Oecologia 91: 505-510

100. Winter K, Ziegler H (1992) Induction of crassulacean acid metabolism in *Mesembryanthemum crystallinum* increases reproductive success under conditions of drought and salinity stress. Oecologia 92: 475-479

101. Winter K, Zotz G, Baur B, Dietz KJ (1992) Light and dark CO_2 fixation in *Clusia uvitana* as affected by plant water status and CO_2 availability. Oecologia 91: 47-51

1993

102. Königer M, Winter K (1993) Growth and photosynthesis of *Gossypium hirsutum* L at high photon flux densities: effects of soil temperatures and nocturnal air temperatures. Agronomie 13: 423-431

103. Königer M, Winter K (1993) Reduction of photosynthesis in sun leaves of *Gossypium hirsutum* L under conditions of high light intensities and suboptimal leaf temperatures. Agronomie 13: 659-668

104. Zotz G, Winter K (1993) Short-term photosynthesis measurements predict leaf carbon balance in tropical rain-forest canopy plants. Planta 191: 409-412

105. Zotz G, Winter K (1993) Short-term regulation of crassulacean acid metabolism activity in a tropical hemiepiphyte, *Clusia uvitana*. Plant Physiology 102: 835-841

1994

106. Baur B, Fischer K, Winter K, Dietz KJ (1994) cDNA sequence of a protein kinase from the halophyte *Mesembryanthemum crystallinum* L., encoding a SNF-1 homologue. Plant Physiology 106: 1225-1226

107. Winter K, Engelbrecht B (1994) Short-term CO_2 responses of light and dark CO_2 fixation in the crassulacean acid metabolism plant *Kalanchoe pinnata*. Journal of Plant Physiology 144: 462-467

108. Zotz G, Winter K (1994) Predicting annual carbon balance from leaf nitrogen. Naturwissenschaften 81: 449

109. Zotz G, Winter K (1994) Annual carbon balance and nitrogen-use efficiency in tropical C_3 and CAM epiphytes. New Phytologist 126: 481-492

110. Zotz G, Winter K (1994) A one-year study on carbon, water and nutrient relationships in a tropical C_3-CAM hemi-epiphyte, *Clusia uvitana* Pittier. New Phytologist 127: 45-60

111. Zotz G, Winter K (1994) Photosynthesis of a tropical canopy tree, *Ceiba pentandra*, in a lowland rain forest in Panama. Tree Physiology 14: 1291-1301

112. Zotz G, Winter K (1994) Photosynthesis and carbon gain of the lichen, *Leptogium azureum*, in a lowland tropical forest. Flora 189: 179-186

1995

113. Königer M, Harris GC, Virgo A, Winter K (1995) Xanthophyll cycle pigments and photosynthetic activity in tropical rain-forest species. a comparative field study on canopy trees, gap and understory plants. Oecologia 104: 280-290

114. Krause GH, Virgo A, Winter K (1995) High susceptibility to photoinhibition of young leaves of tropical forest trees. Planta 197: 583-591

115. Searles PS, Caldwell MM, Winter K (1995) The response of five tropical plant species to natural solar ultraviolet-B radiation. American Journal of Botany 82: 445-453

116. Zotz G, Harris G, Königer M, Winter K (1995) High rates of photosynthesis in a tropical pioneer tree, *Ficus insipida*. Flora 190: 265-272

1996

117. Krause GH, Winter K (1996) Photoinhibition of photosynthesis in plants growing in natural tropical forest gaps. A chlorophyll fluorescence study. Botanica Acta 109: 456-462

118. Lovelock CE, Winter K (1996) Oxygen dependent electron transport and protection from photoinhibition in leaves of tropical tree species. Planta 198: 580-587

119. Lovelock CE, Kyllo D, Winter K (1996) Growth responses to vesicular-arbuscular mycorrhizae and elevated CO_2 in seedlings of a tropical tree, *Beilschmiedia pendula*. Functional Ecology 10: 662-667

120. Roubik D, Winter K (1996) A study of flowering and pollen characteristics in a tropical herb under elevated CO_2 treatment. Tropics 6: 149-152

121. Smith JAC, Winter K (1996) Taxonomic distribution of crassulacean acid metabolism. In: Winter K, Smith JAC (eds) Crassulacean acid metabolism. Biochemistry, ecophysiology and evolution. Springer, Berlin, Heidelberg, pp 427-436

122. Thiele A, Schirwitz K, Winter K, Krause GH (1996) Increased xanthophyll cycle activity and reduced D1 protein inactivation related to photoinhibition in two plant systems acclimated to excess light. Plant Science 115: 237-250

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