

ALAN B. BENNETT College of Agricultural & Environmental Sciences
University of California, Davis
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EDUCATION

University of California	B.S.	1977	Plant Physiology
Cornell University	Ph.D.	1982	Plant Biology

RESEARCH INTERESTS

Plant association with diazotrophic microbes, molecular biology of tomato fruit development and ripening; cell wall disassembly; intellectual property rights in agriculture; university-based innovation.

RESEARCH AND/OR PROFESSIONAL EXPERIENCE

2013-present Distinguished Professor, Department of Plant Sciences, University of California, Davis
2004-present Executive Director, Public Intellectual Property Resource for Agriculture (PIPRA)
2015-2019 Executive Director, UC Davis-Chile Life Sciences Innovation Center
2010-2013 Vice-chair, Instruction and Curriculum, Department of Plant Sciences, UC Davis
2004-2008 Associate Vice Chancellor, Research, UC Davis
2000-2004 Executive Director, Research Administration and Technology Transfer, UC System
1993-1999 Associate Dean, College of Agricultural & Environmental Sciences, UC Davis
1991-2013 Professor, Department of Plant Sciences, University of California, Davis
1990-1993 Chair, Department of Vegetable Crops, University of California, Davis
1987-1991 Associate Professor, Department of Vegetable Crops, University of California, Davis
1983-1987 Assistant Professor, Department of Vegetable Crops, University of California, Davis
1982-1983 Postdoctoral Research Associate, Section of Plant Biology, Cornell University

PROFESSIONAL SOCIETIES, ACTIVITIES AND HONORS

Aggie Hero, 2018-19
Jury member, Wolfe Prize, 2014, 2017
Outstanding Service Award, UC Davis Extension (2012)
Senior Fellow, California Council on Science and Technology (Elected 2006)
Fellow, American Association for the Advancement of Science (Elected 2005)
AAAS Section on Ag. Food and Renewable Resources, Member-at-large (elected) 2001-2006
Editorial Board, Plant Physiology 1986-1992
Monitoring Editor, Plant Physiology 1992-1997
Editorial Board, Plant & Cell Physiology 1997-2000
Editorial Board, Molecular Breeding, 1993-1997
USDA Competitive Research Grants Panel Member, 1988
National Science Foundation Panel Member, Cellular Biochemistry, 1990-1993
BARD Technical Advisory Committee Member, 1993-1996
Chair, Gordon Research Conference, Plant Senescence and Programmed Cell Death, 1996
Council member, National Agricultural Biotechnology Council, 1995-1999
Visiting Professor, Ecole Nationale Supérieure Agronomique d' Toulouse, 1997

UNIVERSITY ADMINISTRATION

2015-Present; Executive Director, UC Davis-Chile Life Science Innovation Center

Major accomplishments:

- Worked with 4 Chilean Universities and several Chilean industry groups to develop a competitive grant proposal to the Ministry of Economy (CORFO) to support the development of a center that would sponsor collaborative research in the Life Sciences and accelerate the translation of research to business opportunities in Chile.
- After receiving the grant award (~ US\$ 33M), worked with the funding agency to put agreements and contracts in place that comply with Chilean law and University of California policies for creating foreign entities.
- Established a non-profit corporation (foundation) in Chile, wholly owned by the University of California and in compliance with both Chilean law and University policy.
- Initiated the collaborative research programs in “Genome Analytics”, “Microbiome and Pathogen Identification and Assessment”, “Climate Forecasting in Chile” and “Data-driven Water Use Management”.
- Recruited a staff of twelve professionals and established a corporate office in Providencia, Santiago.
- Organized a public launching of the center that was attended by approximately 400 people, including the President of Chile, the UCD Chancellor and both US and Chilean Ambassadors.

2004-Present; Executive Director, Public Intellectual Property Resource for Agriculture (PIPRA)

Major accomplishments:

- Worked with a consortium of 60 Universities and the Rockefeller Foundation to establish the framework of a public initiative to support access to patented agricultural technologies for international development.
- Competed to host the resulting organization (PIPRA) at UC Davis and raised over \$6M to support its research and educational activities.
- Organized the *International Workshop Global Alliance for Access to Public Intellectual Property* in Bellagio, Italy.
- Established relationships with the Bill and Melinda Gates Foundation, the Templeton Foundation, the Sasakawa Peace Foundation, the US Patent and Trademark Office, the Department of Energy, the Organization of American States as well as national agencies in Mexico, Ecuador, Peru and Thailand to support analytical and educational aspects of intellectual property for grants and grantees.
- In collaboration with UCD Law School, established the “Licensing Academy” for technology managers from developing countries. This has been offered every year for 9 years and we now have over 300 alumni from over 50 countries.
- Organized and lead short courses for public sector IP managers Vietnam, China, Mexico, Chile, Colombia, Argentina, Uruguay, Pakistan and Thailand.

2004-2008 Associate Vice Chancellor, Research, UC Davis

Major accomplishments:

- Created “UC Davis InnovationAccess” through the integration of the Technology Transfer Center, UC Davis CONNECT, the Health Sciences Technology Business Development unit and the Office of Research, Research Outreach unit. InnovationAccess has strong capabilities in intellectual property management, entrepreneurial business development and support for university-industry partnerships. UC Davis InnovationAccess manages 1,500 IP cases, of which more than 800 are active, with 25% in the licensing process or with executed licenses.
- Managed the process of intellectual property management decentralization from UCOP to the campus. This involved transferring and/or disposing of approximately 300 IP cases as they moved from UCOP management to UC Davis InnovationAccess management.
- In 2006-07 UC Davis InnovationAccess supported entrepreneurship in 19 UC Davis-originated startup companies.
- Received a program enhancement award from the University Industry Cooperative Research Program (IUCRP) to develop a new webguides as a resource for UC Davis researchers, administrators, and staff, as well as industry when establishing industry-university relationships.
- Served on the Editorial Board for ***“Intellectual Property Management in Health and Agricultural Innovation: A Handbook of Best Practices”***

2000-2004 Executive Director, Research Administration and Technology Transfer, UC System

Major accomplishments:

- Managed the central technology transfer program for the UC System which generated over \$350M in revenue during my tenure (4 years).
- Implemented new cost allocation formula to finance the central office activity based on transactional, rather than financial, activity.
- Implemented a new royalty distribution policy to redress an earlier policy change which exposed the University to millions of dollars of future liability.
- Planned and initiated development of new information system to support technology transfer activities throughout the University of California.
- Developed a plan to rationally decentralize intellectual property management from UCOP to the campuses
- Provided leadership in a national collaborative approach to manage intellectual property related to agricultural biotechnology.

1993-1999 Divisional Associate Dean, College of Agricultural & Environ’al Sciences, UC Davis

Major accomplishments:

- Established the Division of Plant Science, comprised of six departments and 90 academic and extension faculty located on the Davis campus and at field stations, within the College as a result of a major administrative reorganization.
- Promoted undergraduate enrollment increase in Plant Science majors by 500%.
- Planned the development of new instructional facilities, resulting in a \$1.3M gift to build the Bowley Plant Science Teaching Center. Provided leadership in the program planning guide and design phases of the capital project.

- Working with the Provost, established a Plant Science Strategic Planning Process which engaged the faculty in a planning effort to develop a 10-year faculty recruitment plan focusing on the campus' unique strengths and comparative advantages in the Plant Sciences. The general areas of "Plant Genomics" and "Environmental Plant Biology" emerged as major themes for development over the next decade and are being implemented through College and campus-wide initiatives.
- Developed a new outreach model to agricultural clientele. The "Research and Information Centers" linked faculty and extension specialists and the public through a www-based information network.
- Provided administrative leadership to develop institutional and grant support to establish a Stable Isotope Facility, a Plant Genetics Facility (DNA sequencing), and a Core Greenhouse Complex, all of which were funded by the National Science Foundation, providing over \$4M in new research support facilities.
- Developed the justification and chaired all of the planning and building committees for construction of the \$40M Plant and Environmental Sciences Building (completed 2002).
- Each of these initiatives had clear and measurable objectives that corresponded to my major priorities in establishing the programs and facilities that support plant science faculty in teaching and research. Each objective was achieved or surpassed during the six years of my service as Associate Dean.

1990-1993 Chair, Department of Vegetable Crops, UC Davis

Major accomplishments:

- Planned and implemented 30% budget reduction mandated by the University by placing control over discretionary departmental resources as close to individual faculty as possible. The implementation of this process engaged maximum faculty participation in defining the mechanisms that most effectively used state funds as a base to build extramurally funded programs. In spite of a 35% reduction in staff and a 30% reduction in support budget, the Department maintained exceptional support services to faculty throughout the period that I was Chair.
- Completely revised the graduate program curriculum and increased undergraduate teaching (student credit hours) by 300% by increasing faculty teaching loads approximately 30% and shifting historical focus from low enrollment graduate course to high enrollment undergraduate courses.
- Initiated two major endowment campaigns raising nearly \$1,000,000 to support the operations of the C.M. Rick Tomato Genetics Resource Center and \$100,000 to develop the Jack Hanna Conference Facility.

EXTERNAL PROFESSIONAL ACTIVITIES

2009-present Plant Science Advisor, Mars Inc.
 2007-2016 Member, Mars Science Advisory Council
 2012-2013 Senior Advisor, Innovation strategies, Universidad de Andres Bello (Chile)
 2009-2012 Co-founder and Chairman, GATD Foundation
 1999-2007 Consultant to Mars, Inc.: Review of plant genetics programs.
 1998-2014: Chair, Scientific Advisory Board, Senesco, Inc.
 1992-1997: Chair, Scientific Advisory Board, United Agricornp.

1992-1995: Consultant to Monsanto Company: Genetic modification of tomato fruit quality.
 1992: Consultant to BHN: Review of program to commercialize genetically modified tomato.
 1992: Consultant to Cushman, Darby & Cushman: Intellectual property interference.
 1991: Consultant to Hunt/Wesson: Genetic improvement of tomato processing quality.
 1989-91: Consultant to Campbell's Soup: Biotechnology applications in tomato improvement.
 1988: Consultant to DuPont deNemours Co: Biotechnology applications in fresh produce.

HISTORY OF RESEARCH SUPPORT

Active during last 5 years (2015-2020):

N₂ Genetics, ***“Mechanisms of N₂ Fixation in a diazotrophic Microbiome Associated with an Indigenous Landrace of Corn”*** 2013-2015, \$3,700,000.
 Binational Agricultural Research and Development, ***“Manipulating fruit chloroplasts as a strategy to improve fruit quality”***, July 2013 – June 2016, \$158,000
 N₂ Genetics, ***“Mechanisms of N₂ fixation in landraces of maize”***, July 2013 – June 2016, \$693,567
 Mars Inc., ***“Bridging Funding for UC Davis Alfalfa Project”***, July 2014 – December 2015
 \$108,998.00
 Center for Research and Applied Technology in Jali (CRATJ), ***“December 2014 Workshop in intellectual property (IP) management, technology transfer (TT) and entrepreneurship”***,
 November 2014 – January 2015, \$39,716
 Corporación de Fomento de la Producción (CORFO), ***“University of California, Davis; Life Sciences Innovation Center”*** 2015-2023, \$33,000,000.
 Mars Inc, ***“Maize Glycobiology –A platform for understanding host-microbe interactions”*** April
 2015 – March 2017, \$1,800,000
 Universidad Del Desarrollo, ***“Diploma in Innovation and New Technologies for Agroindustry”***, July -
 -October 2015 - \$6,995
 The Chilean Economic Development Agency, ***“UC Davis – Chile Admin Line”***, January 2016 –
 November 2017, \$123,000
 Prince of Songkla University, ***“USPTO-Thailand workshop”***, May – August 2016, \$59,668
 International Rice Research Institute (IRRI), ***“Golden Rice 2 FTO”***, June 2017 – May 2018, \$40,260
 USDA-NIFA, ***“A diazotrophic microbiome associated with maize reduces dependence on N fertilization”***, June 2019 – May 2022, \$748,879 (Co-PI with Dr. Bart Weimer).
 FFAR, ***“Genetic and microbial determinants of nitrogen fixation in a Sierra Mixe landrace of maize”***. March 2020 – February 2023, 1,910,720 (Co-PI with Dr. Allen Van-Deynze)

PUBLICATIONS (*h factor* = 60 (*ISI*); 72 (*Google Scholar*); *ISI Most Cited Author*)

1. Bennett A.B. 1982. Characterization, solubilization, and reconstitution of an electrogenic, anion-sensitive H⁺-ATPase from corn roots. Ph.D. thesis, Cornell University.
2. DuPont F.M., Bennett A.B., Spanswick R.M. 1982. Proton transport in microsomal vesicles from corn roots. In: Plasmalemma and Tonoplast: Their Functions in the Plant Cell. Eds. D. Marme, R. Hertel, pp. 409-416. Elsevier Biomedical Press, Amsterdam.
3. DuPont F.M., Bennett A.B., Spanswick R.M. 1982. Localization of a proton-translocating ATPase on sucrose gradients. Plant Physiol. 70:1115-1119.

4. Williams S.E., Bennett A.B. 1982. Venus' flytrap closure: An acid growth response. *Science* 218:1120-1122.
- *5. Bennett A.B., Spanswick R.M. 1983. Optical measurements of ΔpH and $\Delta\psi$ in corn root membrane vesicles. Kinetic analysis of Cl^- effects on a proton-translocating ATPase. *J. Membrane Biol.* 71:95-107.
6. Bennett A.B., Spanswick R.M. 1983. Solubilization and reconstitution of an anion-sensitive H^+ -ATPase from corn roots. *J. Membrane Biol.* 75:21-31.
7. Bennett A.B., Spanswick R.M. 1983. Derepression of amino acid/ H^+ cotransport in developing soybean embryos. *Plant Physiol* 72:781-786.
8. O'Neill S.D., Bennett A.B., Spanswick R.M. 1983. Characterization of a NO_3^- -sensitive H^+ -ATPase from corn roots. *Plant Physiol.* 72:837-846.
9. Spanswick R.W., Bennett A.B. 1983. Electrogenic ion transport in higher plants. P. 331-344. In: M.P. Blaustein and M. Lieberman (eds.). *Electrogenic Transport: Fundamental Principles and Physiological Implications*. Raven Press, New York.
- *10. Bennett A.B., O'Neill S.D., Spanswick R.M. 1984. H^+ -ATPase activity from storage tissue of *Beta vulgaris*. I. Identification and characterization of an anion-sensitive H^+ -ATPase. *Plant Physiol* 74:538-544.
11. Bennett A.B., Spanswick R.M. 1984. H^+ -ATPase activity from storage tissue of *Beta vulgaris*. II. H^+ /ATP stoichiometry of an anion-sensitive H^+ -ATPase. *Plant Physiol.* 74:545-548.
12. Bennett A.B., Sweger B.L., Spanswick R.W. 1984. Sink to source translocation in soybeans. *Plant Physiol.* 74:434-436.
13. Hsu F.C., Bennett A.B., Spanswick R.M. 1984. Concentrations of sucrose and nitrogenous compounds in the free space of developing soybean seedcoats and embryos. *Plant Physiol.* 75:181-186.
14. Spanswick R.M., O'Neill S.D., Bennett A.B. 1984. Plasma membrane and tonoplast ATPases: Characteristics, H^+ transport, and reconstitution. P. 519-524. In: W.J. Cram, K. Janacek, R. Rybova and K. Sigler (eds.). *Membrane Transport in Plants*, Czechoslovak Academy of Sciences, Prague.
15. Bennett A.B., Spanswick R.M. 1985. The use of optical probes to monitor the formation of pH gradients and membrane potential in tonoplast membrane vesicles. P. 119-128. In: B.P. Marin (eds.). *Biochemistry and Function of Vacuolar ATPase in Fungi and Plants*. Springer-Verlag, Berlin.
16. Bennett A.B. 1985. Anion-sensitive H^+ -ATPase from higher plant cells: The role of chloride in stimulating proton transport. P. 175-183. In: B.P. Marin (ed.). *Biochemistry and Function of Vacuolar ATPase in Fungi and Plants*. Springer-Verlag, Berlin.
17. Bennett A.B., O'Neill S.D., Eilmann M.E., Spanswick R.M. 1985. H^+ -ATPase activity from storage tissue of *Beta vulgaris*. III. Modulation of plasma membrane and tonoplast ATPase activity by reaction substrates and products. *Plant Physiol.* 78:495-499.
18. Pesacreta T., Bennett A.B., Lucas W.J. 1985. Spectrophotometric and cytochemical analysis of phosphate ester hydrolysis activity in *Beta vulgaris* L. *J. Histochem. Cytochem.* 34:327-338.
19. DellaPenna D., Christoffersen R.E., Bennett AB 1985. Biotinylated proteins as molecular weight markers on western blots. *Anal. Biochem.* 152:329-332.

20. Bennett A.B., Damon S., Osteryoung K., Hewitt J. 1986. Mechanism of retrieval and metabolism following phloem unloading. In: J. Cronshaw, W. Lucas, R. Giaquinta, Alan R. Liss, Inc. Eds. Phloem Transport pp. 307-316.
21. Bennett A.B., Christoffersen R.E. 1986. Synthesis and processing of cellulase from ripening avocado fruit. Plant Physiol. 81:830-835.
- *22. DellaPenna D., Alexander D., Bennett A.B. 1986. Molecular cloning of tomato fruit polygalacturonase: Analysis of mRNA levels during ripening. Proc Nat Acad Sci USA 83:6420-6424.
23. Bennett AB 1986. Biotechnology sets sights on improving tomato fruit quality. Am Veg Grower, August, pp. 18-20.
- *24. Bennett AB, Smith GM, Nichols B. 1987. Regulation of climacteric respiration in ripening avocado fruit. Plant Physiol. 83:973-976.
25. Oleski N.A., Bennett A.B. 1987. H⁺-ATPase activity from storage tissue of *Beta vulgaris*. IV. DCCD binding and inhibition of the plasma membrane H⁺-ATPase. Plant Physiol. 83:569-572.
26. Bennett A.B., Oleski N.A., O'Neill S.D. 1987. Primary hydrogen ion pumps of the pumps of the vacuolar and plasma membrane plasma membranes of higher plants. In: M. McNamee, S. Goheen. (eds.) Bio Rad Press, pp 353-363.
27. Bennett A.B., DellaPenna D. 1987. Regulation of polygalacturonase gene expression during ripening. In: D. Nevins, R. Jones, (eds.) Tomato Biotechnology, Alan R. Liss, pp 299-308.
28. Bennett A.B., DellaPenna D. 1987. Polygalacturonase: Its importance and regulation in fruit ripening. In: WW Thomson, EA Nothnagel, RH Huffaker, eds., Senescence: Its Biochemistry and Physiology, Amer Soc Plant Physiol. pp 98-107.
29. Hewitt J.D., Blaker N.S., Damon S.E., Bennett A.B. 1987. The UCD processing tomato breeding program. Acta Horticulture 200:83-90.
30. Oleski N.A., Mahdavi P., Peiser G., Bennett A.B. 1987. Transport properties of the tomato fruit tonoplast. I. Identification and characterization of an anion-sensitive H⁺-ATPase. Plant Physiol. 84:993-996.
31. Oleski N.A., Mahdavi P., Bennett A.B. 1987. Transport properties of the tomato fruit tonoplast. II. Citrate transport. Plant Physiol. 84:993-996.
32. DellaPenna D., Bennett A.B. 1987. Polygalacturonase gene expression in Rutgers, *rin*, *nor* and *Nr* tomato fruits. Plant Physiol. 84:502-507.
33. DellaPenna D., Bennett A.B. 1988. *In vitro* synthesis and processing of tomato fruit polygalacturonase. Plant Physiol 86:1057-1063.
34. Robinson N.L., Hewitt J.D., Bennett A.B. 1988. Sink metabolism in tomato fruit. I. Development changes in carbohydrate metabolizing enzymes. Plant Physiol. 87:727-730.
35. Damon S., Hewitt J.D., Bennett A.B. 1988. Sink metabolism in tomato fruit. II. Phloem unloading and sugar uptake. Plant Physiol. 87:731-736.
36. Yelle S., Hewitt J.D., Robinson N.L., Damon S., Bennett A.B. 1988. Sink metabolism in tomato fruit. III. Analysis of carbohydrate assimilation in a wild species. Plant Physiol. 87:737-740.
37. Joyce D.C., Reid M.S., Bennett A.B. 1988. Transport properties of the tomato fruit tonoplast. III. Temperature dependence of calcium transport. Plant Physiol. 88:1097-1103.
38. Bennett A.B., Leigh R., Spanswick R.M. 1988. H⁺-ATPases from vacuolar membranes of higher plants. Methods Enzymol. 157:579-590.

- *39. Giovannoni J., DellaPenna D., Bennett A.B., Fischer R.L. 1989. Expression of a chimeric polygalacturonase gene in transgenic *rin* (ripening inhibitor) tomato fruit results in polyuronide degradation but not fruit softening. *Plant Cell* 1:53-63.
40. DellaPenna D., Lincoln J., Fischer R.L., Bennett A.B. 1989. Transcriptional analysis of polygalacturonase and other ripening induced genes in Rutgers, *rin*, *nor* and *Nr* tomato fruit. *Plant Physiol* 90:1372-1377.
41. Bennett A.B., DellaPenna D., Fischer R.L., Giovannoni J., Lincoln J.E. 1989. Regulation, maturation and function of tomato fruit polygalacturonase. In: *Signals for Cell Separation in Plants*, D. Osborne, M. Jackson (eds), Springer-Verlag. pp. 11-20.
42. Bennett A.B., DellaPenna D., Fischer R.L., Giovannoni J., Lincoln J.E. 1989. Tomato fruit polygalacturonase: Gene regulation and enzyme function. In: *Biotechnology and Food Quality*, Shaindow Kung, D.D. Bills, R. Quatrano (eds), Butterworths, pp.167-180.
43. Bennett A.B., Ewing N., Wimmers L.E., Meyer D. 1989. Molecular analysis of cation-sensitive ion-translocating ATPases in tomato. In: J. Dainty, M.I. DeMichelis, E. Marre, F. Rasi-Caldogno (eds), *Plant Membrane Transport: The Current Position*, Elsevier, pp.449-454.
44. Giovannoni J.J., DellaPenna D., Lashbrook C., Bennett A.B., Fischer R.L. 1989. Expression of a chimeric polygalacturonase gene in transgenic *rin* (ripening inhibitor) tomato fruit. In: C. Lamb, R. Beachy (eds), *UCLA Symposium on Molecular and Cellular Biology*, Vol. 129, Alan R. Liss.
45. Bennett A.B., Borcherts K. 1990. A functional arginine residue in the vacuolar H⁺-ATPase of higher plants. *Biochim. Biophys. Acta* 1023:119-123.
46. Bennett A.B., O'Neill S.D. (eds) 1990. *Horticultural Biotechnology*, Wiley-Liss, New York, 387 pp.
47. Bennett A.B. 1990. Summary: Ripening and Senescence. In: A.B. Bennett, S.D. O'Neill (eds), *Horticultural Biotechnology*, Wiley-Liss, pp. 213-215.
48. Giovannoni J.J., DellaPenna D., Lashbrook C., Bennett A.B., Fischer R.L. 1990. Expression of a chimeric polygalacturonase gene in transgenic *rin* (ripening inhibitor) tomato fruit. In: A.B. Bennett, S.D. O'Neill (eds), *Horticultural Biotechnology*, Wiley-Liss, pp. 217-228.
49. Wimmers L.E., Ewing N.N., Meyer D.J., Bennett A.B. 1990. Molecular biology of plant P-type ion-translocating ATPases. In: R. Leonard, P. Hepler (eds), *Calcium in Plants*, Amer. Soc. Plant Physiol. pp. 36-45.
50. Bennett A.B., Osteryoung K.W. 1990. Protein transport and targeting within the endomembrane system of plants. In: D. Grierson (ed.), *Plant Biotechnology*, Vol. 1 *Plant Genetic Engineering*. Blackie and Sons Limited pp. 200-239.
51. Reuveni M., Bennett A.B., Bressan R.A., Hasegawa P.M. 1990. Enhanced H⁺ transport capacity and ATP hydrolysis activity of the tonoplast H⁺-ATPase after NaCl adaptation. *Plant Physiol.* 94:524-530.
52. Ewing N.N., Wimmers L.E., Meyer D.J., Chetelat R.T., Bennett A.B. 1990. Molecular cloning of tomato plasma membrane H⁺-ATPase. *Plant Physiology* 94:1874-1881.
53. DellaPenna D., Lashbrook C., Toenjes K., Giovannoni J.J., Fischer R.L., Bennett A.B. 1990. Polygalacturonase isozymes and pectin depolymerization in transgenic *rin* tomato fruit. *Plant Physiol.* 94:1882-1886.
54. Osteryoung K.W., Toenjes K., Hall B., Winkler V., Bennett A.B. 1990. Analysis of tomato polygalacturonase expression in transgenic tobacco. *Plant Cell* 2:1239-1248.
55. Yelle S., Chetelat R.T., DeVerna J.W., Dorais M., Bennett A.B. 1991. Sink metabolism in tomato fruit. IV. Genetic and biochemical analysis of sucrose accumulation. *Plant Physiol.* 95:1026-1035.

- *56. Fischer R.L., Bennett A.B. 1991. Role of cell wall hydrolases in fruit ripening. *Annu. Rev. Plant Physiol. & Plant Molec. Biol.* 42:675-703.
57. Giovannoni J.J., DellaPenna D., Bennett A.B., Fischer R.L. 1991. Polygalacturonase and tomato fruit ripening. *Hort. Rev.* 13:67-103.
58. Bennett A.B., Klann E.M., Lashbrook C.C., Yelle S., Chetelat R.T., DeVerna J.W., Fischer R.L. 1992. Genetic and molecular genetic regulation of soluble and insoluble carbohydrate composition in tomato. In: *Biotechnology and Nutrition*, S-d Kung, D.D. Bills, (eds), Butterworths, pp 149-165.
59. Dong J.G., Kim W.T., Yip W.K., Thompson G.A., Li L., Bennett A.B., Yang S.F. 1991. Cloning of a cDNA encoding 1-aminocyclopropane-1-carboxylate synthase and expression of its mRNA in ripening apple fruit. *Planta* 185:38-45.
60. Osteryoung K.W., Sticher L., Jones R., Bennett A.B. 1992. Barley aleurone microsomal membranes: A system for analysis of cotranslational processing of plant endomembrane proteins. *Plant Physiol.* 99:378-382.
61. Klann E., Yelle S., Bennett A.B. 1992. Tomato fruit acid invertase cDNA: Nucleotide and deduced amino acid sequences. *Plant Physiol.* 99:351-353.
- *62. Wimmers L., Ewing N., Bennett A.B. 1992. Higher plant Ca^{2+} -ATPase: Primary structure and regulation of mRNA abundance by salt. *Proc. Natl. Acad. Sci. USA* 89:9205-9209.
63. Lashbrook C.C., Bennett A.B. 1993. Functional analysis of Cx-cellulase (endo- β -1,4-glucanase) gene expression in transgenic tomato fruit. In: *Cellular and Molecular Aspects of the Plant Hormone Ethylene*, JC Pech, A Latche, C. Balague (eds), Kluwer Acad. Pub., pp123-128.
64. Stotz H., Powell A., Damon S., Greve C., Bennett A.B., Labavitch J. 1993 Molecular characterization of a polygalacturonase inhibitor from 'Bartlett' pear fruit. *Plant Physiol* 102:133-138.
65. Chetelat R., Yelle S., DeVerna J., Klann E., Bennett A.B. 1993. Inheritance and genetic mapping of fruit sucrose accumulation in *Lycopersicon chmielewskii*. *Plant J.* 4:643-650.
66. Klann E., Chetelat R., Bennett A.B. 1993. Expression of acid invertase gene controls sugar composition in tomato fruit. *Plant Physiol* 103:863-870.
67. Bennett A.B., Chetelat R., Klann E., Lashbrook C., Martin R., Gilchrist D. 1993. Physiologically-directed molecular and biochemical approaches to plant improvement. *Trans. Malaysian Soc. Plant Physiol.* 3:200-209.
68. Stotz H.U., Contos J.A., Powell A.L.T., Bennett A.B., Labavitch J.M. 1994. Structure and expression of an inhibitor of fungal polygalacturonases from tomato. *Plant Mol. Biol* 25:607-617.
69. Brummell D.A., Lashbrook C.L., Bennett A.B. 1994. Plant endo-1,4- β -glucanases: Structure, properties and physiological function. In: M.E. Himmel, J.O. Baker, R. P. Overend (eds), *Amer. Chem. Soc. Symposium Series, Enzymatic Conversion of Biomass for Fuels Production*. ch. 6, pp:100-129.
70. Ewing N.E., Bennett A.B. 1994. Assessment of the number and expression of H^{+} -ATPase genes in tomato. *Plant Physiol.* 106:547-557.
71. Lashbrook C.L., Gonzalez-Bosch C., Bennett A.B. 1994. Two divergent endo- β -1,4-glucanase genes exhibit overlapping expression in ripening fruit and abscission zones. *Plant Cell* 6:1485-1493.
72. Powell A.L.T., Stotz H.U., Labavitch J.M., Bennett A.B. 1994. Glycoprotein inhibitors of fungal polygalacturonases. In: *"Advances in Molecular Genetics of Plant-Microbe Interactions"*, M.J. Daniels, J.A. Downie, A.E. Osborn (eds), Vol. III. pp. 399-402.

73. Moore T., Bennett A.B. 1994. Tomato fruit polygalacturonase isozyme 1: Characterization of the β subunit and its state of assembly *in vivo*. *Plant Physiol* 106:1461-1469.
74. Karrer E., Lincoln J.E., Hogenout S., Bennett A.B., Bostock R., Martineau B., Lucas W.J., Gilchrist D.G., Alexander D. 1995. *In situ* isolation of mRNA from individual plant cells: Creation of cell-specific cDNA libraries. *Proc. Natl. Acad. Sci. USA* 92:3814-3818.
75. Grantz A.A., Brummell D.A., Bennett A.B. 1995. Ascorbate free radical reductase mRNA levels are induced by wounding. *Plant Physiol.* 108:411-418.
76. Chetelat R.T., DeVerna J.W., Bennett A.B. 1995. Introgression into tomato (*Lycopersicon esculentum*) of the *L. chmielewskii* invertase gene controlling fruit sucrose accumulation. *Theoret. Appl. Genet.* 91:327-333.
77. Chetelat R.T., DeVerna J.W., Bennett A.B. 1995. Effects of the *Lycopersicon chmielewskii* invertase gene controlling fruit sucrose accumulation on yield and quality parameters following introgression into tomato. *Theoret. Appl. Genet.* 91:334-339.
78. Mito N., Bennett A.B. 1995. The *diageotropica* mutation and synthetic auxins differentially effect expression of auxin-regulated genes in tomato. *Plant Physiol.* 109:293-297.
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