

DIANE M. BARRETT, Ph.D. (Emerita)

University of California, Davis, CA 95616-8598

Retired from - Department of Food Science & Technology

e-mail: dmbarrett@ucdavis.edu

web page: <https://foodscience.ucdavis.edu/people/diane-barrett>

EDUCATION

Ph.D. in Food Biochemistry, Cornell University, August 1989

Minor subjects: **Plant Physiology and Agricultural Economics**

M.S. in Food Chemistry, University of Wisconsin, Madison, August 1980

B.S. in Food Science, University of California, Davis, June 1978

PROFESSIONAL EXPERIENCE

Extension Specialist, Fruit and Vegetable Products (50% Research and 50% Extension)

University of California, Davis, Department of Food Science and Technology 1992 to June, 2016

Research addressed the effects of raw material quality and processing on color, flavor, texture and nutritional quality of fruit and vegetable products, with particular emphasis on enzyme-catalyzed reactions which result in qualitative losses. Specific enzymes studied included polyphenol oxidase, lipoxygenase, pectin methylesterase, polygalacturonase, peroxidase and hydroperoxide lyase. Handling and processing technologies of interest included fresh-cut processing, canning, freezing, irradiation, high pressure and aseptic processing.

Extension activities included developing strong linkages with California fruit and vegetable processors, associations such as the California League of Food Processors and the National Food Processors Association, commodity and advisory boards, appropriate state and federal government personnel and both farm and home advisors. Coordination of the Better Process Control Schools; Freezing Technology Course; Advanced Processing Methods, Aseptic Processing & Packaging Course; Methods of Measuring Fruit and Vegetable Quality Course, and Juice Processing, Quality and Safety Workshop.

Assistant Professor, Fruit and Vegetable Handling and Processing

(50% Research/50% Extension) Department of Food Science and Technology,
Oregon State University, Corvallis, Oregon.

1989 to 1992

Tuber Crops Postharvest Processing Specialist

Dept. of Agriculture, Republic of Indonesia
Funded by U.S. Agency for International Development

1983 to 1985

Curriculum Development Consultant

Dept. of Community Nutrition, Bogor Agricultural University
Funded by U.S. Agency for International Development

1982 to 1983

Food Chemistry Consultant

Food Technology Development Center, Bogor Agricultural University
Funded by World Bank

1981 to 1982

PROFESSIONAL ACTIVITIES

Member of Institute of Food Technologists (IFT) and IFT Fruit and Vegetable Products Division, IFT Nonthermal Division and IFT Northern California Section

Previously on the Editorial Board for *Journal of Food Processing Preservation*

Reviewer for *Journal of Food Science*, *Food Chemistry*, *Journal of Agricultural and Food Chemistry*, *International Journal of Food Science and Technology*, *Journal of Food Processing*, *Lebensmittel Wissenschaft un Technologie*, *Journal of Horticultural Science*, *HortScience*, *Journal of Food Engineering*, *Biotechnology Progress*

AWARDS

1977	The Emil Mrak Prize in Food Science, Dept. FS&T, UC Davis
1987-88	Institute of Food Technologists Fellowship, Florasynth, Inc.
1988-89	Institute of Food Technologists Fellowship, General Mills, Inc.
1998	Distinguished Service Award for Outstanding & Creative Teamwork, Division of Agriculture & Natural Resources, University of California
2003	Excellence in Research Award, Academic Federation, UC Davis
2009	Institute of Food Technologists' Fruit & Vegetable Product Division – Member of the Year
2014	Institute of Food Technologists – Fellow
2015	California League of Food Processors – Distinguished Service Award
2015	Ag Seeds Unlimited – Distinguished Service Award
2016	Distinguished Service Award for Outstanding Research – UC Agriculture & Natural Resources

PUBLICATIONS

- Peng, J., J. Tang, D.M. Barrett, S.S. Sablani, N. Anderson, and J.R. Powers. 2017. Thermal pasteurization of ready-to-eat foods and vegetables: Critical factors for process design and effects on quality. *Critical Reviews in Food Science and Nutrition*. 57(14):2970-2995.
- Techakanon, C., G.M. Smith, J. Jernstedt, and D.M. Barrett. 2017. The effect of high pressure processing on clingstone and freestone peach cell integrity and enzymatic browning reactions. *Innovative Food Science and Emerging Technologies*. 39:230-240.
- Techakanon, C. and D.M. Barrett. 2017. The effect of calcium chloride and calcium lactate pretreatment concentration on peach cell integrity after high-pressure processing. *International Journal of Food Science and Technology*. 52: 635–643.
- Techakanon, C., T. Gradziel and D.M. Barrett. 2016. Effect of peach cultivar on enzymatic browning following cell damage from high pressure processing. *Journal of Agricultural and Food Chemistry*. 64:7606-7614.
- Techakanon, C., T. Gradziel and D.M. Barrett. 2016. The impact of maturity stage on cell membrane integrity and enzymatic browning reactions in high pressure processed peaches (*Prunus persica*). *Journal of Agricultural and Food Chemistry*. 64:7216-7224.
- Ngamchuachit, P., E. J. Mitcham, and D. M. Barrett. 2016. Spatial variance of physicochemical properties within mangos and the effect of initial ripeness stage on the quality of fresh-cut mangos. *Journal of the Science of Food and Agriculture*. 96(10):3613-3620.
- Barrett, D. M., and G. Anthon. 2016. Factors affecting the loss of consistency during the concentration of tomato juice to paste and consistency changes during paste storage. *Acta Horticulturae (ISHS)* 1159, 175-182.
- Shiu, J., D. Slaughter, L. Boyden, and D.M. Barrett. 2016. Correlation of descriptive analysis and puncture test of watermelon cultivars. *Journal of Food Science*, 81(6):S1506-14.
- Vázquez-Gutiérrez J.L., A. Quiles, E. Vonasek J.A. Jernstedt, I. Hernando, N. Nitin, and D.M. Barrett. 2016. High hydrostatic pressure as a method to preserve fresh-cut Hachiya persimmons: A structural approach. *Food Science and Technology International* *Accepted; online ahead of print*.
- Wheeler, L., L. Kitinoja, and D.M. Barrett. 2015. Use of Insulated Covers over Product Crates on Reducing Losses in Amaranth during Shipping Delays. *Agriculture* 5(4):1204-1223.
- Tang, J.M., D.M. Barrett, N. Anderson, and S.S. Sablani. 2015. Thermal pasteurization of vegetables: critical factors for process design and effects on quality. *Critical Reviews in Food Science and Nutrition*. *Accepted version ahead of final*.
- Kitinoja, L., and D.M. Barrett. 2015. Extension of Small-Scale Postharvest Horticulture Technologies – a Model Training and Services Center. *Agriculture* 5:441-455.
- Ngamchuachit, P., H.K. Sivertsen, E.J. Mitcham, and D.M. Barrett. 2015. Influence of cultivar and ripeness stage at the time of fresh-cut processing on instrumental and sensory qualities of fresh-cut mangos. *Postharvest Biology and Technology* 106: 11–20.
- Bouzari, A., D. Holstege and D.M. Barrett. Vitamin Retention in Eight Fruits and Vegetables: A Comparison of Refrigerated and Frozen Storage. 2015. *Journal of Agricultural and Food Chemistry* 63(3):957–962.
- Bouzari, A., D. Holstege and D.M. Barrett. Mineral, Fiber, and Total Phenolic Retention in Eight Fruits and Vegetables: A Comparison of Refrigerated and Frozen Storage. 2015. *Journal of Agricultural and Food Chemistry* 63(3):951–956.
- Shiu, J.W., D.C. Slaughter, L.E. Boyden and D.M. Barrett. 2015. Effect of the shear-to-compressive force ratio in puncture tests quantifying watermelon mechanical properties. *Journal of Food Engineering* 150:125-131.
- Held, M.T., G.E. Anthon, and D.M. Barrett. 2015. The Effects of Bruising and Temperature on Enzyme Activity and Textural Qualities of Tomato Juice. *Journal of the Science of Food and Agriculture* 95(8):1598–1604.

- Barrett, D. M. 2015. Future innovations in tomato processing. *Actae Horticulturae* 1081:49-55.
- Schultz, A.K., D. M. Barrett and S. R. Dungan. 2014. Effect of Acidification on Carrot (*Daucus carota*) Juice Cloud Stability. *Journal of Agricultural and Food Chemistry* 62(47):11528–11535.
- Kirtil, E., M.H. Oztop, A. Sirijariyawat, P. Ngamchuachit, D.M. Barrett, and M.J. McCarthy. 2014. Effect of pectin methyl esterase (PME) and CaCl₂ infusion on the cell integrity of fresh-cut and frozen-thawed mangoes: An NMR Relaxometry Study. *Food Research International* 66:409-416.
- Fisklements, M., and D.M. Barrett. 2014. New methods for measuring surface area, seed coat separation, and ‘chip and scratch’ damage in almonds. *Journal of Food Engineering* 142:1-8.
- Fisklements, M., and D.M. Barrett. 2014. Kinetics of Almond Skin Separation as a Function of Blanching Time and Temperature. *Journal of Food Engineering* 138:11-16.
- Ngamchuachit, P., H.K. Sivertsen, E.J. Mitcham, and D.M. Barrett. 2014. Effectiveness of Calcium Chloride and Calcium Lactate on Maintenance of Textural and Sensory Qualities of Fresh-Cut Mangos. *Journal of Food Science* 79(5):C786-C794.
- Fuentes, A., J.L. Vázquez-Gutiérrez, M.B. Pérez-Gago, E. Vonasek, N. Nitin, and D.M. Barrett. 2014. Application of nondestructive impedance spectroscopy to determination of the effect of temperature on potato microstructure and texture. *Journal of Food Engineering* 133:16-22.
- Ngamchuachit P., D.M. Barrett, and E.J. Mitcham. 2014. Effects of 1-Methylcyclopropene and Hot Water Quarantine Treatment on Quality of “Keitt” Mangos. *Journal of Food Science* 79(4):C505–C509.
- Zhang, L., M.A. Schultz, R. Cash, D.M. Barrett, and M.J. McCarthy. 2014. Determination of quality parameters of tomato paste using guided microwave spectroscopy. *Food Control* 40:214-223.
- Schultz, A.K., G.E. Anthon, S.R. Dungan, and D.M. Barrett. 2014. Effect of Pectin Methyl esterase on Carrot (*Daucus carota*) Juice Cloud Stability. *Journal of Agricultural and Food Chemistry* 62(5):1111–1118.
- Ringeisen, B., D.M. Barrett, and P. Stroeve. 2014. Concentrated Solar Drying of Tomatoes. *Energy for Sustainable Development* 19:47-55.
- Peng J., J. Tang, D.M. Barrett, S.S. Sablani, and J.R. Powers. 2014. Kinetics of Carrot Texture Degradation under Pasteurization Conditions. *Journal of Food Engineering* 122:84-91.
- Peng, J., J. Tang, Y. Jiao, S.G. Bonet, and D.M. Barrett. 2013. Dielectric properties of tomatoes assisting in the development of microwave pasteurization and sterilization processes. *LWT - Food Science and Technology* 54(2):367-376.
- Wilkerson E.D., G.E. Anthon, D.M. Barrett, G.F.G. Sayajon, A.M. Santos, and L.E. Rodriguez-Saona. 2013. Rapid Assessment of Quality Parameters in Processing Tomatoes Using Hand-Held and Benchtop Infrared Spectrometers and Multivariate Analysis. *Journal of Agricultural and Food Chemistry* 61(9):2088–2095.
- Vallone, S., H. Sivertsen, G.E. Anthon, D.M. Barrett, E.J. Mitcham, S. E. Ebeler, and F. Zakharov. August 2013. An integrated approach for flavor quality evaluation in muskmelon (*Cucumis melo* L. *reticulatus* group) during ripening. *Food Chemistry* 139(1-4):171-183.
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- Gonzales, M.E., G. Anthon, and D.M. Barrett. Sept. 2010. Onion cells after High Pressure and Thermal Processing: Comparison of Membrane Integrity Changes Using Different Analytical Methods and Impact on Tissue Texture. *Journal of Food Science* 75(7): E426-E432.

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- Gonzalez, M.E., J.A. Jernstedt, D.C. Slaughter, and D.M. Barrett. Sept. 2010. Influence of Cell Integrity on Textural Properties of Raw, High Pressure, and Thermally Processed Onions. *Journal of Food Science* 75(7):E409-E416.
- Gonzalez, M.E., J.A. Jernstedt, D.C. Slaughter, and D.M. Barrett. Sept. 2010. Microscopic Quantification of Cell Integrity in Raw and Processed Onion Parenchyma Cells. *Journal of Food Science* 75(7):E402-E408.
- Gonzalez, M.E., and D.M. Barrett. Sept. 2010. Thermal, High Pressure, and Electric Field Processing Effects on Plant Cell Membrane Integrity and Relevance to Fruit and Vegetable Quality. *Journal of Food Science* 75(7):R121-R130.
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- Anthon, G.E., J.V. Diaz and D.M. Barrett. 2009. Changes in Consistency of Tomato Juice during Concentration. IN: *Proceedings of the Eleventh International Symposium on the Processing Tomato* R. Pitblado and J. Routledge (eds.) *Acta Horticulturae (ISHS)* 823:153-156.
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- Mitchell, A.E. , Y.J. Hong, E. Koh, D.M. Barrett, D.E. Bryant, R.F. Denison and S.R. Kaffka. 2007. Ten year comparison of the influence of organic and conventional crop management practices on the content of flavonoids in tomatoes. *Journal of Agricultural and Food Chemistry* 55:6154-6159.
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