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EDUCATIONAL BACKGROUND:

1964 - 1969.	Rutgers University, Food Science, B.S.
1969 - 1971.	Rutgers University, Food Science, M.S.
1971 - 1972.	Rutgers University, Food Science, M.Phil.
1972 - 1974.	Rutgers University, Food Science, Ph.D.
1974 - 1975.	University of Georgia, Food Science, Post-Doctoral Training (Food Science/Mycotoxigenology).

PROFESSIONAL EXPERIENCE:

2008 – Present. Director and Professor, Center for Food Safety and Security Systems, College of Agriculture and Natural Resources, University of Maryland, College Park, MD. Serving as the first Director of a new center for the development of systems based approaches to ensuring

the safety and security of the food supply. This academic/industry/government center provides research/education/outreach intended to enhance the safety of food both in national and international trade.

1999 - 2008. Senior Science Advisor, US Food and Drug Administration, Center for Food Safety and Applied Nutrition, Senior Biomedical Research Service, Washington, DC. Serves as Center's senior science advisor for the planning, coordination, and review of scientific and research programs. Serves as the Center's representative to multiple national and international organizations, including being the lead for external relations with other governmental agencies, academic organizations, and professional bodies. Involved in the development and review of programs and policies for which scientific decisions play a role in the Center's activities.

1999 – 2006. Director, CFSAN Office of Science. Responsibilities included coordination and review for the scientific and research programs. This included responsibilities for the Center's Food Advisory Committee, the CFSAN Staff College, and its cooperative agreements with several universities. Direct managerial responsibility for approximately 125 scientists and support staff.

1998 - 1999. Lead Scientist for President's Food Safety Initiative, US Food and Drug Administration, Center for Food Safety and Applied Nutrition, Senior Biomedical Research Service, Washington, DC. Responsibilities included research planning, coordination, and review for the FDA Food Safety Initiative. Additionally participated in the development of food safety policies and the agency's response to emerging food safety concerns. Conducted research on bacterial stress responses, predictive food microbiology, and microbial risk assessment.

1995 - 1998. Research Microbiologist, USDA, ARS, ERRC, Wyndmoor, PA. Studied the effects and mechanisms whereby sublethal stresses alter the irradiation and thermal resistance of foodborne pathogens, developing quantitative microbial risk assessment methodology and mathematical means for modeling the behavior of foodborne pathogens, and elucidating practical strategies for controlling foodborne pathogens in agricultural commodities. Provided scientific advice to regulatory agencies and industry on microbiological food safety issues and policies.

1994 - 1995. Deputy Administrator, USDA, FSIS, S&T, Washington, DC. Served as head of the USDA Food Safety and Inspection Service's Science and Technology Program. Provided oversight of the development, operation, and review of a wide range of scientific and technological initiatives that supported the FSIS's regulatory activities to ensure the safety of meat, poultry, and egg products. Responsible for managerial oversight of several hundred scientists including three national laboratories.

1982 - 1994. Supervisory Microbiologist, USDA, ARS, ERRC, Philadelphia, PA. Research Leader of Microbiological Safety Research Unit. Head of an internationally recognized research unit investigating a wide range of food safety microbiology problems.

Responsibilities include planning research goals and approaches, monitoring research activities, coordinating interdisciplinary projects, planning and authorizing budgetary allocations, and advising regulatory agencies and the food industry on research needs and results. Responsible for managerial supervision of a research group of approximately 50 scientists and support staff.

1975 - 1982. Assistant/Associate Professor (tenured), Drexel University, Dept. Nutrition & Food Sciences, Philadelphia, PA. Conducted and supervised research in the areas of food microbiology, food toxicology, and nutritional biochemistry including obtaining sources of outside funding and monitoring research progress; taught undergraduate and graduate courses in food microbiology, food toxicology, microbial physiology, and nutritional biochemistry.

1974 - 1975. Research Associate. University of Georgia, Dept. Food Science, Athens, GA. Conducted research on the bioregulation and control of mycotoxin synthesis.

1969 - 1973. Research Assistant. Rutgers University, Food Science Dept., New Brunswick, NJ. Conducted research on the mechanism of inhibition of *Staphylococcus aureus* by sodium nitrite, and the usefulness of indicator organisms as predictors of pathogens in food service operations.

HONORS, AWARDS, AND PROFESSIONAL AFFILIATIONS:

New Jersey State Scholarship (1964 - 1969).

Honor Graduate, U.S. Army Quartermaster School (1974).

Dawson Post-Doctoral Fellow (1974 & 1975). Two-time recipient of this competitively awarded fellowship sponsored by the College of Agriculture of the University of Georgia.

Drexel Research Scholar Award (1978). Awarded to young investigator for excellence in research.

Four-time recipient of ARS Research Associate Program Awards (1984, 1987, 1989, 1996).

Eastern Regional Research Center EEO Award (1990).

FDA EEO Award (2003)

Elected:

Member of Phi Tau Sigma (Honorary Food Science Society (1972)

Member of Alpha Zeta (1970)

Member of Sigma Xi (Honorary Research Society) (1972)

Fellow of the American Academy of Microbiology (1990)

Eight-time recipient of USDA Certificates of Merit for Research and Research Management (1988, 1989, 1990, 1991, 1992, 1994, 1996, 1997).

FDA Distinguished Career Service Award (2008)

Seven-time recipient of FDA Certificate of Merit for Research and Research Management (1998, 1999, 2000, 2001, 2002, 2003)

Four-time recipient of FDA Certificate of Merit for Advances in Microbiological Risk Assessment (2003, 2004, 2005)

Recipient of FDA Certificate of Merit for Leadership in Advancing International Activities for serving as United States Delegate to the Codex Alimentarius Committee on Food Hygiene (CCFH) and the World Health Organization (WHO) and the Food and Agriculture Organization (FAO) (2006).

FDA Leadership Award for serving as the FDA Lead for the 2005-2006 Combined Federal Campaign.

National Laboratory Consortium Award of Merit for Technology Transfer (1993).

Philadelphia Federal Executive Board Silver Award for Technology Transfer (1993).

USDA Superior Service Award (1993). Group leader for award presented to the Microbial Food Safety Research Unit for its pioneering research in predictive food microbiology.

ARS Outstanding Senior Scientist of the Year Award (1994).

Appointed to the HHS Senior Biomedical Research Service (1997)

DHHS Secretary's Award for Distinguished Service (2001) (Individual)

DHHS Secretary's Award for Distinguished Service (2003) (Group)

University of Wisconsin Fraiser Memorial Lectureship Award for Outstanding Contributions to Food Microbiology (1995).

Institute of Food Technologist Jules Bauermann Lectureship Award for Outstanding Contributions to Food Science (1997).

North Carolina State University Escker Lectureship Award for Outstanding Contributions to Food Microbiology (1998).

Malcom Trout Visiting Scholar Lectureship. Michigan State University (2001)

Institute of Food Technologist Division of Microbiology Lectureship Award (2002).

American Chemical Society Sterling B. Hendricks Memorial Lecture Award (2004).

Food Safety World Award for Excellence in Food Safety Communication (2004)

ISI Award for “Most Cited” Scientific Author, 2002.

International Association for Food Protection Siliker Lectureship Award, (2010)

Rutgers University Alumni Society Lifetime Achievement Award, (2010)

Member of International Association for Food Protection and the Institute of Food Technologist.

Fellow of the American Academy for Microbiology

Fellow of the Institute of Food Technologists

Member of the Board of Editors for the Journal of Food Safety (1974 - 2004) and Journal of Food Protection (1984 - Present), Journal of Quantitative Microbiology (1998 - 2001)

Contributing Editor, Food Microbiology (1987 - Present).

Member of Board of Directors of Research and Development Associates for Military Packaging and Feeding Systems, Inc. (1987-1989)

Member of Joint USDA/HHS National Advisory Committee for Microbiological Criteria for Foods. (1988-1990, 1992 - 2002)

Co-Director of Food Microbiology Short Course, Center for Professional Advancement (1972 - 1994).

Member, National Academy of Sciences, Institute of Medicine, Committee on Microbial Threats to Health, (1991 - 1992).

Member, International Commission on Microbiological Specification for Foods (1990 - Present).

Head of Delegation for the United States to the Codex Alimentarius Commission Committee on Food Hygiene (1998 – 2008).

Chair of Council of Scientific Advisors for the International Life Sciences Institute (2006 – 2009).

Member of multiple international expert consultations on food safety, risk analysis, and microbiological criteria for the Food and Agriculture Organization and the World Health Organization of the United Nations. (1998 – 2008).

PUBLICATIONS AND INVITED PRESENTATIONS.

Authored or co-authored over 400 research manuscripts, book chapters, review articles, and published abstracts on a wide range of subjects related to food safety microbiology and toxicology (see below). Has given several hundred invited lectures and presentations (list available upon request) on a wide variety of scientific and regulatory topics to groups on six continents.

Manuscripts

1. Buchanan, R. L. and Solberg, M. Interaction of sodium nitrite, oxygen, and pH on growth of *Staphylococcus aureus*. J. Food Sci. 37:81-85. 1972.
2. Buchanan, R. L. Anti-microbial action of sodium nitrite. Proc. Rutgers Meat Sci. Institute. 14:148-165. (Review). 1973.
3. Buchanan, R. L. and Ayres, J. C. Effect of initial pH on aflatoxin production. Appl. Microbiol. 30:1050-1051. 1975.
4. Buchanan, R. L. and Ayres, J. C. Effect of sodium acetate on growth and aflatoxin production by *Aspergillus parasiticus* NRRL 2999. J. Food Sci. 41:128-132. 1976.
5. Solberg, M., Miskimin, D. K., Kramer, R., Riha, W. E., Jr., Franke, W. C., Buchanan, R. L. and O'Leary, V. O. Assurance of microbiological safety in a university feeding system. J. Milk Food Technol. 39:200-203. 1976.
6. Miskimin, D. K., Berkowitz, K. A., Solberg, M., Rhea, W. E., Jr., Franke, W. C., Buchanan, R. L. and O'Leary, V. Relationships between indicator organisms and specific pathogens in potentially hazardous foods. J. Food Sci. 41:1001-1006. 1976.
7. Buchanan, R. L. and Ayres, J. C. Effect of various glycolytic and TCA cycle intermediates on aflatoxin production. J. Food Safety. 1:19-28. 1977.
8. Buchanan, R. L. and Fletcher, A. M. Methylxanthine inhibition of aflatoxin production. J. Food Sci. 43:654-655. 1978.
9. Buchanan, R. L. and Solberg, M. Influence of sodium nitrite on the aerobic catabolism of glucose by *Staphylococcus aureus*. J. Food Safety. 1:211-215. 1978.

10. Buchanan, R. L., Applebaum, R. S. and Conway, P. Effect of theobromine on growth and aflatoxin production by *Aspergillus parasiticus*. J. Food Safety. 1:211-215. 1978.
11. Applebaum, R. S. and Buchanan, R. L. Intracellular concentration of cAMP and cGMP in an aflatoxigenic strain of *Aspergillus parasiticus*. J. Food Safety. 44:116-117. 1979.
12. Nartowicz, V., Buchanan, R. L. and Seagall, S. Aflatoxin production in regular and decaffeinated coffee beans. J. Food Sci. 44:446-448. 1979.
13. Buchanan, R. L. Toxicity of spices containing methylenedioxybenzene derivatives: A review. J. Food Safety. 1:275-293. (Review)
14. Abdollahi, A. and Buchanan, R. L. Regulation of aflatoxin biosynthesis: Characterization of glucose as an apparent inducer of aflatoxin production. J. Food Sci. 46:143-146. 1981.
15. Abdollahi, A. and Buchanan, R. L. Regulation of aflatoxin biosynthesis: Induction of aflatoxin production by various carbohydrates. J. Food Sci. 46:633-635. 1981.
16. Bullerman, L. B. and Buchanan, R. L. Mycotoxins other than aflatoxins—their relationships to food safety: Introduction. J. Food Protection. 44:701, 710. 1981. (Review)
17. Buchanan, R. L. and Shepherd, A. J. Inhibition of *Aspergillus parasiticus* by thymol. J. Food Sci. 46:976-977. 1982.
18. Buchanan, R. L., Goldstein, S. and Budroe, J. D. Examination of chili pepper and nutmeg oleoresins using the *Salmonella*/mammalian microsome mutagenicity assay. J. Food Sci. 47:330-331, 333. 1982.
19. Tice, G. and Buchanan, R. L. Regulation of aflatoxin biosynthesis: Effect of exogenously supplied cyclic nucleotides. J. Food Sci. 47:153-157. 1982.
20. Buchanan, R. L., Tice, G. and Marino, D. Caffeine inhibition of ochratoxin A production. J. Food Sci. 47:319-321. 1982.
21. Buchanan, R. L. Inherent safety of cheese and meat fermentations: A review of some toxicological considerations. J. Food Safety. 4:125-137. 1982. (Review)
22. Buchanan, R. L., and Houston, W. M. Production of blue-fluorescent pyrazines by *Aspergillus parasiticus*. J. Food Sci. 47:779-782. 1982.
23. Miller, A. J. and Buchanan, R. L. Detection of genotoxicity in fried bacon by the *Salmonella*/mammalian microsome mutagenicity assay. Food Chem. Toxicol. 21:319-323. 1983.

24. Buchanan, R. L., Harry, M. A. and Gealt, M. A. Caffeine inhibition of sterigmatocystin, citrinin, and patulin production. *J. Food Sci.* 48:1226-1228. 1983.
25. Smith, J. L., Buchanan, R. L. and Palumbo, S. A. Effect of food environment on staphylococcal enterotoxin synthesis. *J. Food Prot.* 46:545-555. 1983. (Review)
26. Miller, A. J. and Buchanan, R. L. Reduction of mutagen formation in cooked nitrite-free bacon by selected cooking treatments. *J. Food Sci.* 48:1772-1775. 1983.
27. Buchanan, R. L., Hoover, D. G. and Jones, S. B. Caffeine inhibition of aflatoxin production: Mode of action. *Appl. Environ. Microbiol.* 46:1193-1200.
28. Buchanan, R. L. and Lewis, D. F. Caffeine inhibition of aflatoxin synthesis: Probable site of action. *Appl. Environ. Microbiol.* 47:1216-1220. 1984.
29. Smith, J. L., Benedict, R. C., Buchanan, R. L., Kalinowsky, S. and Palumbo, S. A. pH dependent acetate injury in *Staphylococcus aureus*: Role of temperature. *Lebensmittel Wissenschaft Technologie.* 17:271-275. 1984.
30. Smith, J. L., Bencivengo, M. M. and Buchanan, R. L. Enterotoxin biosynthesis by heat injured-repaired cells of *Staphylococcus aureus*. *J. Food Safety.* 6:203-209. 1984.
31. Buchanan, R. L. and Lewis, D. F. Regulation of aflatoxin biosynthesis: Effect of glucose on the activities of various glycolytic enzymes. *Appl. Environl. Microbiol.* 48:306-310. 1984.
32. Buchanan, R. L. The "new" pathogens: An update of selected examples. *Assoc. Food Drug Off. Quart. Bull.* 48:42-155. 1984. (Review)
33. Buchanan, R. L. and Stahl, H. G. Ability of various carbon sources to induce and support aflatoxin synthesis by *Aspergillus parasiticus*. *J. Food Safety.* 6:271-274. 1984.
34. Buchanan, R. L., Federowicz, D. and Stahl, H. G. Activities of tricarboxylic acid cycle enzymes in an aflatoxigenic strain of *Aspergillus parasiticus* after a peptone to glucose carbon source shift. *Trans. Brit. Mycol. Soc.* 84:267-275. 1984.
35. Dymicky, M. and Buchanan, R. L. Preparation of n-monoalkyl maleates and n-mono and di-n-alkyl fumarates. *Organic Prep. Proc. Internat.* 17:121-131. 1984.
36. Buchanan, R. L. and Palumbo, S. A. *Aeromonas hydrophila* and *Aeromonas sobria* as potential food poisoning species: A review. *J. Food Safety.* 7:15-29. 1984.
37. Palumbo, S. A., Morgan, D. R. and Buchanan, R. L. The influence temperature, NaCl and pH on the growth of *Aeromonas hydrophila*. *J. Food Sci.* 50:1417-1421. 1985.

38. Palumbo, S. A., Maxino, F., Williams, A. C., Buchanan, R. L. and Thayer, D. W. Starch ampicillin agar for the quantitative detection of *Aeromonas hydrophila* in foods. *Appl. Environ. Microbiol.* 50:1027-1030. 1985.
39. Buchanan, R. L., Ocker, L. A. and Stahl, H. G. Effects of 2-deoxyglucose, alpha-methylglucoside, and glucosamine on aflatoxin production by *Aspergillus parasiticus*. *Arch. Microbiol.* 142:200-203. 1985.
40. Smith, J. L., Bencivengo, M. M., Buchanan, R. L. and Kunsch, C. A. Enterotoxin A production in *Staphylococcus aureus*: Inhibition by glucose. *Arch. Microbiol.* 144:131-136. 1986.
41. Palumbo, S. A., Jenkins, R. K., Buchanan, R. L. and Thayer, D. W. Irradiation D-values for *Aeromonas hydrophila*. *J. Food Prot.* 49:189-191. 1986.
42. Buchanan, R. L. Food Fermentations with Molds. In "Biotechnology in Food Processing." S. K. Harlander and T. P. Labuza, eds., Noyes Pub., Park Ridge, NJ, pp. 209-222. 1986. (Book Chapter)
43. Huhtanen, C. N., Shieh, J., Wierbicki, E., Zaika, L. L., Jenkins, R. K., Buchanan, R. L. and Thayer, D. W. Effect of sugar and low-dose irradiation on toxin production by *Clostridium botulinum* in comminuted bacon. *J. Food Prot.* 49:112-116. 1986.
44. Buchanan, R. L. Processed meats as a microbiological environment. *Food Technol.* 40:134-138. 1986. (Review)
45. Buchanan, R. L., Stahl, H. G., Ocker, L. A., Kunsch, C. A. and Purcell, C. J., Jr. Thioglycerol inhibition of growth and aflatoxin production in *Aspergillus parasiticus*. *J. Gen. Microbiol.* 132:2767-2773. 1986.
46. Dymicky, M., Bencivengo, M. M., Buchanan, R. L. and Smith, J.L. Inhibition of *Clostridium botulinum* 62A by fumarates and maleates and relationship of activity to some physiochemical characteristics. *Appl. Environ. Microbiol.* 53:110-113. 1987.
47. Buchanan, R. L., Wiseman, D. W., Ocker, L. A., Stahl, H. G., Kunsch, C. A. and Purcell, C. J., Jr. The effects of β -methylglucose, 3-O-methylglucose and thioglucose on aflatoxin production by *Aspergillus parasiticus*. *J. Food Safety.* 8:127-138. 1987.
48. Smith, J. L., Bencivengo, M. M., Buchanan, R. L. and Kunsch, C. A. Effect of glucose analogs on the synthesis of staphylococcal enterotoxin A. *J. Food Safety.* 8:139-147. 1987.
49. Buchanan, R. L., Zaika, L. L., Kunsch, C. A., Purcell, C. J., Jr. and Mertz, S. E. Isolation of a caffeine-resistant mutant of *Aspergillus parasiticus*. *J. Food Sci.* 52:194-196. 1987.

50. Thayer, D. W., Muller, W. S., Buchanan, R. L. and Phillips, J. G. Effect of NaCL, pH, temperature, and atmosphere on growth of *Salmonella typhimurium* in glucose-mineral salts medium. *Appl. Environ. Microbiol.* 53:1311-1315. 1987.
51. Buchanan, R. L., Jones, S.B., Gerasimowicz, W. V., Zaika, L. L., Stahl, H. G. and Ocker, L. A. Regulation of aflatoxin biosynthesis: Assessment of the role of cellular energy status as a regulator of the induction of aflatoxin production. *Appl Environ. Microbiol.* 53:1224-1231. 1987.
52. Buchanan, R. L., Stahl, H. G. Characterization of a caffeine-resistant mutant of *Aspergillus parasiticus*: Role of amino acid metabolism. *J. Food Sci.* 52:1718-1720, 1725. 1987.
53. Jones, S. B., Dobson, T. O., Stahl, H. G. and Buchanan, R. L. Ultrastructure of a caffeine-resistant mutant of *Aspergillus parasiticus* during aflatoxin production. *Proc. 45th Annual Meeting Electron Microscopy Society of America*, P978-979. 1987.
54. Buchanan, R. L. and Bennett, J. W. Nitrogen regulation of polyketide mycotoxin production. In "Nitrogen Source Control of Microbial Processes," S. Sanchez-Esquivel, ed. CRC Press, Inc. Boca Raton, FL. pp137-149. 1988. (Book Chapter)
55. Palumbo, S. A., Williams, A. C., Buchanan, R. L. and Phillips, J. G. Thermal resistance of *Aeromonas hydrophila*. *J. Food Protection.* 50:761-764. 1987.
56. Wiseman, D. E. and Buchanan, R. L. Determination of glucose level needed to induce aflatoxin production in *Aspergillus parasiticus*. *Can. J. Microbiol.*, 33:828-830. 1987.
57. Zaika, L. L. and Buchanan, R. L. Review of compounds affecting the biosynthesis or bioregulation of aflatoxin. *J. Food Protection.* 50:691-708. 1987. (Review)
58. Smith, J. L., Benedict, R. C. and Buchanan, R. L. *Listeria monocytogenes* in meat and poultry: review of factors affecting its introduction and growth in foods. Technical Report to USDA Interagency Task Force on *Listeria* in Foods. 1987. (Review)
59. Buchanan, R. L., Jones, S. B. and Stahl, H. G. Effect of micronazole on growth and aflatoxin production by *Aspergillus parasiticus*. *Mycopathologia.* 100:135-144. 1987.
60. Buchanan, R. L., Smith, J. L., Stahl, H. G. and Archer, D. L. *Listeria* methods development research at the USDA Eastern Regional Research Center. *J. Assoc. Off. Anal. Chem.* 71:651-654. 1988.
61. Buchanan, R. L., Stahl, H. G. and Archer, D. L. Improved plating media for simplified, quantitative detection of *Listeria monocytogenes* in foods. *Food Microbiol.* 4:269-275.

1987.

62. Palumbo, S. A. and Buchanan, R. L. Factors affecting growth or survival of *Aeromonas hydrophila* in foods. *J. Food Safety* 9:37-51. 1988.
63. Buchanan, R. L. and Bencivengo, M. M. Comparison of lethality in mouse versus goldfish for clinical and food isolates of *Aeromonas hydrophila*. *J. Indus. Microbiol.* 4:189-194. 1988.
64. Lenovich, L. M., Buchanan, R. L., Worley, N. J., and Restaino, L. Effect of solute type on sorbate resistance in *Zygosaccharomyces rouxii*. *J. Food Sci.* 53:914-916. 1988.
65. Buchanan, R. L., Stahl, H. G., Wiseman, D. W., Zaika, L. L., and Mertz, S. E. Further characterization of a caffeine-resistant mutant of *Aspergillus parasiticus*. *J. Food Sci.* 53:1858-1862 & 1876. 1988.
66. Smith, J. L. and Buchanan, R. L. Shigella. in "Compendium of Methods for the Microbiological Examination of Foods", 3rd ed. C. Vanderzant and D. F. Splitstoesser, eds. Amer. Pub. Health Assoc. 1992. pp423-431. (Book Chapter)
67. Buchanan, R. L., Stahl, H. G., Bencivengo, M. M., and Del Corral, F. Comparison of lithium chloride-phenylethanol-moxalactam and modified Vogel Johnson agars for the detection of *Listeria* in retail-level meats, poultry and seafood. *Appl. Environ. Microbiol.* 55:599-603. 1989.
68. Buchanan, R. L., Stahl, H. G., and Whiting, R. C. Effects and interactions of temperature, pH, atmosphere, sodium chloride, and sodium nitrite on the growth of *Listeria monocytogenes*. *J. Food Protection* 52: 844-851. 1989.
69. Buchanan, R. L. Advances in cultural methods for the detection of *Listeria monocytogenes*. In "Foodborne Listeriosis," A. J. Miller, J. L. Smith, and G. A. Somkuti, eds. Soc. Indus. Microbiol. pp. 85-95. 1990. (Book Chapter)
70. Palumbo, S. A., Bencivengo, M. M., Del Corral, F., Williams, A. C., and Buchanan, R. L. Characterization of the *Aeromonas hydrophila* group isolated from retail level foods of animal origin. *J. Clin. Microbiol.* 27:854-859. 1989.
71. Buchanan, R. L. *Listeria* as a foodborne pathogen: Letter to the Editor. *Food Microbiol.* 6(3). 1989.
72. Buchanan, R. L. and Phillips, J. G. Response surface model for predicting the effects of temperature, pH, sodium chloride content, sodium nitrite concentration, and atmosphere on the growth of *Listeria monocytogenes*. *J. Food Protect.* 53:370-376. 1990.
73. Del Corral, F. and Buchanan, R. L. Evaluation of the API-ZYM system for identification

- of *Listeria*. Food Microbiol. 7:99-106. 1990.
74. Smith, J. L. and Buchanan, R. L. Identification of supplements that enhance the recovery of *Listeria monocytogenes* on modified Vogel Johnson agar. J. Food Safety 10:155-163. 1990.
 75. Broome, C., Buchanan, R. L., Doores, S., Ryser, E. T., Smith, J. L., and Somkuti, G. A. Conference Report: "Comprehensive Conference on *Listeria monocytogenes*." SIM News 39:9-15. 1989.
 76. Buchanan, R. L. and Klawitter, L. A. Effects of temperature and oxygen on the growth of *Listeria monocytogenes* at pH 4.5. J. Food Sci. 55:1754-1756. 1990.
 77. Buchanan, R. L. and Klawitter, L. A. Effect of temperature history on the growth of *Listeria monocytogenes* at refrigeration temperatures. Internat. J. Food Microbiol. 12:235-246. 1991.
 78. Buchanan, R. L. and Cygnarowicz, M. L. A mathematical approach toward defining and calculating the duration of the lag phase. Food Microbiol. 7:237-240. 1990.
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 80. Buchanan, R. L. HACCP, a reemerging approach to food safety. Trends Food Sci. Technol. 1:104-106. 1990. (Review)
 81. Buchanan, R. L. Using spreadsheet software for predictive microbiology applications. J. Food Safety 11:123-134. 1991.
 82. Buchanan, R. L. Microbiological criteria for cooked ready-to-eat shrimp and crabmeat. Food Technol. 45(4):157-160. 1991. (Review)
 83. Buchanan, R. L. and Klawitter, L. A. Characterization of a lactic acid bacterium, *Carnobacterium piscicola* LK5, with activity against *Listeria monocytogenes*. J. Food Safety 12:199-217. 1992.
 84. Buchanan, R. L., Klawitter, L. A., Bhaduri, S., and Stahl, H. G. Arsenite resistance in *Listeria monocytogenes*. Food Microbiol. 8:161-166. 1991.
 85. Palumbo, S. A., Williams, A. C., Buchanan, R. L., and Phillips, J. G. Model for the aerobic growth of *Aeromonas hydrophila* K144. J. Food Protection 54:429-435. 1991.
 86. Buchanan, R. L. Predictive microbiology: Mathematical modeling of microbial growth in foods. in "Food Safety Assessment" J. W. Finley, S. F. Robinson, D. J. Armstrong

(eds.). ACS Symposium Series 484, American Chemical Society. Washington, D.C. pp250-260. 1992. (Book Chapter)

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88. Fratamico, P. M., Schultz, F. J. and Buchanan, R. L. Rapid isolation of *Escherichia coli* O157:H7 from enrichment cultures of food using an immunomagnetic separation method. *Food Microbiol.* 9:105-113. 1992.
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91. Palumbo, S. A., Williams, A. C., Buchanan, R. L., and Phillips, J. G. Model for the anaerobic growth of *Aeromonas hydrophila* K144. *J. Food Protection* 55:260-265. 1992.
92. Zaika, L. L., Phillips, J. G., and Buchanan, R. L. Model for aerobic growth of *Shigella flexneri* under various conditions of temperature, pH, sodium chloride and sodium nitrite concentrations. *J. Food Protection* 55:509-513. 1992.
93. Bhaduri, S., Smith, P. W. Palumbo, S. A., Turner-Jones, C. O., Smith, J. L., Marmer, B. S., Buchanan, R. L., Zaika, L. L., and Williams, A. C. Thermal destruction of *Listeria monocytogenes* in liver sausage slurry. *Food Microbiol.* 8:75-78. 1991.
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