REFERENCES

AOAC INTERNATIONAL. 1998. *Official Methods of Analysis* 16th Ed., 4th Revision, method 925.10. Gaithersburg: AOAC INTERNATIONAL.

Arroyo, L., Cotton, L. N., and Martin, J. H. 1994. Evaluation of media for enumeration of *Bifidobacterium adolescentis*, *B. infantis* and *B. longum* from pure culture. *J. Cult. Dairy Prod.*, 29: 20–24.

Avena-Bustillos, R. J., and Krochta, J. M. 1993. Water vapor permeability of caseinate based edible films as affected by pH, calcium cross-linking and lipid content. *J. Food Sci.*, 58(4): 904-907.

Avena-Bustillos, R. J., Krochta, J. M., Saltveit, M. E., Roias-Villegas, R. J., and Sauceda-Perez, J. A. 1994. Optimization of edible coating formulations on zucchini to reduce water loss. *J. Food Eng.*, 21: 197-214.

Ballongue, J. 1998. Bifidobacteria and probiotic action. In S. Salminene, and A.V. Wright (Eds.), *Lactic Acid Bacteria: Microbiology and Functional Aspects* (pp. 519-587), New York: Marcel Dekker.

Baldwin, E. A., Nisperos, M. O., Hagenmaier, R. D., and Baker, R. A. 1997. Use of lipids in coatings for food products. *Food Technol.*, 51(6): 56-62.

Carr, J. P., Ibrahim, S. A., Bynum, A., Seo, C. W., Shahbazi, G., and Worku, M. 1999. The viability of bifidobacteria in bio-yogurt produced in North Carolina. Presented in IFT Annual Meeting, 2003.

Chang, Y., Adhikari, K., and Mustapha, A. 2000. Suvival of *Bifidobacterium longum* in stimulated gastrointestinal juices (Abstr.). Department of Food Science, University of Missouri-Columbia, Columbia.

Chick, J., and Hernandez, R. J. 2002. Physical, thermal, and barrier characterization of casein-wax-based edible films. *J. Food Sci.*, 67(3): 1073-1079.

Clark, J. P. 2002. Developments in food freezing. *Food Technol*., 56(10): 76-77.

Clark, J. P. 2003. Freeze drying gets boost from fruit for cereal. *Food Technol*., 57(7): 102-103.

Clark, P. A., Cotton, L. N., and Martin, J. H. 1993. Selection of bifidobacteria for use as dietary adjuncts in cultured dairy foods: Tolerance to simulated pH of human stomachs. *Cult. Dairy Prod. J.*, 28: 11-14.

Cochran, W. G., and Cox. G. M. 1957. *Experimental Designs.* New York: John Willey & Sons.

Collins, E. S., and Hall, B. J. 1984. Growth of bifidobacteria in milk and preparation of *Bifidobacterium infantis* for a dietary adjunct. *J. Dairy Sci*., 67: 1376–1380.

Crittenden, R., Laitila, A., Forssell, P., Ma-Tto, J., Saarela, M., Mattila-Sandholm, T., and Mylla-Rinen, P. 2001. Adhesion of bifidobacteria to granular starch and its implications in probiotic technologies. *Appl. Environ. Microbiol.*, 67(8): 3469-3475.

Dave, R. I. and Shah, N. P. 1997. Viability of yogurt and probiotic bacteria in yogurts made from commercial starter culture. *Intl. Dairy J.*, 7: 31-41.

Donhowe, G., and Fennema, O. 1994. Edible films and coatings; Characteristics, formation, definitions, and testing methods. In J. M. Krochta, E. A. Baldwin, and M. O. Nisperos-Carriedo (Eds.), *Edible Coatings and Films to Improve Food Quality* (pp. 1-21), Pennsylvania: Technomic Publishing.

Fellows, P. 2000. *Food Processing Technology: Principles and Practice.* Boca Raton: CRC Press.

Fennema, O. R. 1996. *Food Chemistry.* New York: Marcel Dekker.

Fwu-Long, M., Shin-Shing, S., Chin-Ta, C., and Juin-Yih, L. 2002. Adsorption of indomethacin onto chemically modified chitosan beads. *Polymer*, 43: 757-765.

Gardiner, G. E., Ross, R. P., Kelly, P. M., Stanton, C., Collins, J. K., and Fitzgerald, G. 2002. Therapeutic products of fermented milks. In R. K. Robinson (Ed.), *Dairy Microbiology Handbook*, 3rd edition (pp. 431-466), New York: John Wiley and Sons.

Gilliland, S. E. 1979. Beneficial interrelationships between certain microorganisms and humans: Candidate organisms for use as dietary adjuncts. *J. Food Protec.*, 42: 164-167.

Godward, G. N. Y. 2000. Studies on enhancing the viability and survival of probiotic bateria in dairy foods through strain selection and microencapsulation. Thesis dissertation of School of Science, Food and Horticulture, University of Western Sydney, Hawkesburry, Australia.

Gontard, N., Duchez, C., Cuq, J. L., Guilbert, S. 1994. Edible composite films of wheat gluten and lipids: Water vapour permeability and other physical properties. *Int. J. Food Sci. Technol.*, 29: 39-50.

Grant, L. A., and Burns, J. 1994. Application of coatings. In J. M. Krochta, E. A. Baldwin, and M. Nisperos-Carriedo (Eds.), *Edible Coatings and Films to Improve Food Quality* (pp.189-200), Pennsylvania: Technomic Publishing.

Greener, I. K., and Fennema, O. 1989. Barrier properties and surface characteristics of edible bilayer films. *J. Food Sci.*, 54(6): 1393-1400.

Guilbert, S., Gontard, N., and Gorris, L. G. M. 1996. Review article: Prolongation of the shelf-life of perishable food products using biodegradable films and coatings. *Lebensm. Wiss. Technol.*, 29: 10–17.

Habib, Y. S., Augsburger, L. L., and Shangraw, R. F. 2002. Production of inert cushioning beads: Effect of excipients on the physicomechanical properties of freeze-dried beads containing microcrystalline cellulose produced by extrusion-spheronization. *Int. J. Pharm.*, 233: 67-83.

Hannoun, B., and Stephanopoulos, G. 1986. Diffusion coefficients of glucose and ethanol in cell-free and cell-occupied calcium alginate membranes. *Biotechnol. Bioeng.*, 28: 829–835.

Hansen, T. L., Allan-Wojtas, P. M., Jin, Y. L., and Paulson, A. T. 2002. Survival of free and Ca-alginate microencapsulated *Bifidobacterium* spp. in simulated gastro-intestinal conditions. *J. Appl. Microbiol.*, 19: 35-45.

Hartemink, R., Kok, B. J., Weenk, G. H., and Rombouts, F. M. 1996. Raffinose-*Bifidobacterium* RB agar, a new selective medium for bifidobacteria. *J. Microbiol. Methods*, 27: 33–43.

Hartemink, R., and Rombouts, F. M. 1999. Comparison of media for the detection of bifidobacteria, lactobacilli and total anaerobes from faecal samples. *J. Microbiol. Methods*, 36: 181–192.

Hernandez, E. 1994. Edible coatings from lipids and resins. In J. M. Krochta, E. A. Baldwin, and M. O. Nisperos-Carriedo (Eds.), *Edible Coatings and Films to Improve Food Quality* (pp. 279-303), Pennsylvania: Technomic Publishing.

Ho, B. 1992. *Water vapor permeabilities and structural characteristics of casein films and casein-lipid emulsion films.* M. S. thesis. University of California Davis.

Ishibashi, N., and Shimamura, S. 1993. Bifidobacteria: Research and development in Japan. *Food Technol.*, 47: 126-135.

Janstova, B., and Lukasova, J. 2001. Heat resistance of *Bacillus* spp. spores isolated from cow's milk and farm environment. *ACTA Vet. Brno.*, 70:179-184.

Kailasapathy, K., and Rybka, S. 1997. *Lactobacillus acidophilus* and *Bifidobacterium* spp. their therapeutic potential and survival in yogurt. *Aust. J. Dairy Technol.*, 52(1): 28–35.

Kester, J. J., and Fennema, 0. 1989. An edible film of lipids and cellulose ethers: Barrier properties to moisture vapor transmission and structural evaluation. *J. Food Sci.*, 54: 1383-1389.

Khalil, A. H., and Mansour, E. H. 1998. Alginate encapsulated bifidobacteria survival in mayonnaise. *J. Food Sci.*, 63(4): 702-705.

Ki-Yong, L., and Tae-Ryeon, H. 2000. Survival of *Bifidobacterium longum* immobilized in calcium alginate beads in simulated gastric juices and bile salt solution. *Appl. Environ. Microbiol.*, 66(2): 869-873.

King, G., Daugulis, A., Goosen, M., Faulkner, P., and Bayly, D. 1989. Alginate concentration: A key factor in growth of temperature-sensitive baculovirus infected cells in microcapsules. *Biotechnol. Bioeng.*, 34: 1085– 1091.

Klaver, F. A. M., Kingma, F., and Weerkamp, A. H. 1993. Growth and survival of bifidobacteria in milk. *J. Nether. Milk Dairy*, 47: 151–164.

Klein, S., Rudolph, M. W., and Dressman, J. B. 2002. Drug release characteristics of different mesalazine products using USP apparatus 3 to simulate passage through the GI tract. *Controlled Release Society Annual Meeting Report.* Dissolution Technologies, Inc.

Krochta, J. M., and Mulder-Johnston, C. D. 1997. Edible and biodegradable polymer films: Challenges and opportunities. *Food Technol.*, 51(2): 61-74.

Kuo-Cheng, C., and Jer-Yiing, H. 1997. Cell immobilization with phosphorylated polyvinyl alcohol (PVA) gel. In G. F. Bickerstaff (Ed.), *Immobilization of Enzymes and Cells* (pp. 207-217), New Jersey: Humana Press.

Lankaputhra, W. E. V., and Shah, N. P. 1995. Survival of *Lactobacillus acidophilus* and *Bifidobacterium* species in the presence of acid and bile salts. *J. Cult. Dairy Prod.*, 30(3): 113–118.

Lankaputhra, W. E. V., Shah, N. P., and Britz, M. L. 1996. Evaluation of media for selective enumeration of *Lactobacillus acidophilus* and *Bifidobacterium* species. *Food Austral.*, 48(3): 113–118.

Laroia, S., and Martin, J. H. 1991. Effect of pH on survival of *Bifidobacterium bifidum* and *Lactobacillus acidophilus* in frozen fermented dairy desserts. *J. Cult. Dairy Prod.*, 2: 13–21.

Maitrot, H., Paquin, C., Lacroix, C., and Champagne, C. P. 1997. Production of concentrated freeze-dried cultures of *Bifidobacterium longum* in k-carrageenan-locust bean gum gel. *Biotechnol. Technol.*, 11(7): 527-531.

Marshall, V. M. 1992. Inoculated ecosystems in a milk environment. *J. Appl. Bacteriol.,* Symposium, 73: 1275–1355.

Martin, J. H., and Chou, K. M. 1992. Selection of Bifidobacteria for use as dietary adjuncts in cultured dairy foods: Tolerance to pH of yogurt. *J. Cult. Dairy Prod.,* 27(4): 21–26.

McHugh, T. H., and Krochta, J. M. 1994. Milk-protein-based edible films and coatings. *Food Technol.*, 48: 97-103.

Miller, J. 1998. Cryogenic food freezing systems. *Food Proc.*, 67(8): 22–23.

Miller, K. S. and Krochta, J. M. 1997. Oxygen and aroma barrier properties of edible films: A review. *Trends Food Sci. & Technol.*, 8(7): 228-237.

Ministry of industry. 1978. *Standard for cassava flour/starch.* Bangkok, Thailand.

Mitsuoka, T. 2000. Significance of dietary modulation of intestinal microflora and intestinal environment. *Biosci. Microflora*, 19: 15–25.

Modler, H. W., McKellar, R. C., and Yaguchi, M. 1990. Bifidobacteria and bifidogenic factors. *J. Can. Inst. Food Sci. Technol.*, 23, 29–41.

Nebra, Y., and Blanch, A. R. 1999. A new selective medium for *Bifidobacterium* spp. *Appl. Environ. Microbiol.*, 65: 5173– 5176.

Nisperos-Carriedo, M. O. 1994. Edible coatings and films based on polysaccharides. In J. M. Krochta, E. A. Baldwin, and M. O. Nisperos-Carriedo (Eds.), *Edible Coatings and Films to Improve Food Quality* (pp. 305-336), Pennsylvania: Technomic Publishing.

Noriega, L., Gueimonde, M., Alonso, and de los Reyes-Gavillan, L. C. G. 2003. Inhibition of *Bacillus cereus* growth in carbonated fermented bifidus milk. *Food Microbiol.*, 20: 519–526.

Payne, J. F., Morris, A. E. J., and Beers, P. 1999. Note: Evaluation of selective media for the enumeration of *Bifidobacterium* spp. in milk. *J. Appl. Microbiol.*, 86: 353–358.

Perez, C., Desobry, S., and Hardy, J. 2001. Functional properties of sodium caseinate films: Effect of type and plasticizer concentration. Presented in Louisiana: IFT annual meeting.

Peyton, B. M., and Characklist, W. G. 1994. Microbial biofilms and biofilm reactors. In M. A. Hjortso, and J. W. Roo (Eds.), *Cell Adhesion: Fundamentals and Biotechnological Application* (pp. 187-231), New York: Marcel Dekker.

Pszczola, D. E. 2003. Delivery systems help send the right message. *Food Technol.*, 57(4): 68-85.

Rao, A. V., Shiwnarain, N., and Maharaj, J. 1989. Survival of microencapsulated *Bifidobacterium pseudolongum* in simulated gastric and intestinal juices. *J. Can. Inst. Food. Sci. Technol.*, 22: 345–349.

Rasic, J. L., and Kurmann, J. A. 1983. *Bifidobacteria and Their Role.* Basel: Birkhauser.

Rayas, L. M., Hernandez, R. J., and Shah, N. P. 1997. Development and characterization of biodegradable/edible wheat protein film. *J Food Sci.*, 62(1): 160-162,189.

Risch, S. J., and Reineccius, G. A. 1995. *Encapsulation and Controlled Release of Food Ingredients.* Washington, DC: American Chemical Society.

Reilly, S. S., and Gilliland, S. E. 1999. *Bifidobacteirum longum* survival during frozen and refrigerated storage as related to pH during growth. *J. Food Sci.*, 64(4): 714– 718.

Roy, D. 2001. Review: Media for the isolation and enumeration of bifidobacteria in dairy products. *Int. J. Food Microbiol.*, 69: 167–182.

Samona, A., and Robinson, R. K. 1991. Enumeration of bifidobacteria in dairy products. *J. Soc. Dairy Technol.*, 44: 64–66.

Sanders, M. R. 1999. Probiotics. *Food Technol.*, 53(11): 67-77.

Sandine, W. E. 1979. Role of *Lactobacillus* in the intestinal tract. *J. Food Protec.*, 42: 295-299.

Saxelin, M., Grenov, B., Svensson, U., Fonden, R., Reniero, R., and Mattila-Sandholm, T. 1999. The technology of probiotics. *Tren. Food Sci. & Technol.*, 10: 387-392.

Scardovi, V. 1986. *Bifidobacterium.* In P. H. Sneath, N. S. Mair, M. E. Sharpe, and J. G. Holt (Eds.), 9th *Bergey's Manual of Systematic Bacteriology*, Vol. 2, Baltimore: Williams and Wilkins Publishers.

Seifert, D., and Phillips, A. 1997. Production of small, monodispersed alginate beads for cell immobilization. *Biotechnol. Prog.*, 13: 562–568.

Singh, K., Mohan, S. 2003. Kinetic studies of the sucrose adsorption onto an alumina interface. *Appl. Surface Sci.*, 221: 308-318.

Shah, N. P. 1997. Isolation and enumeration of bifidobacteria in fermented milk products: A review. *Milchwissenschaft*, 52: 72–76.

Shah, N.P. 2000. Probiotic bacteria: Selective enumeration and survival in dairy foods. *J. Dairy Sci.*, 83: 894-907.

Shah, N. P. 2001. Functional foods from probiotics and prebiotics. *Food Technol.*, 55(11): 46-53.

Shan-Yang, L., Ko-Shao C., and Run-Chub, L. 1999. Drying methods affecting the particle sizes, phase transition, reswelling processes and morphology of poly (*N*-isopropylacrylamide) microgel beads. *Polymer*, 40: 6307–6312.

Shimamura, S., Abe, F., Ishibashi, N., Miyakawa, H., Yaeshima, T., Araya, T., and Tomita, M. 1992. Relationship between oxygen sensitivity and oxygen metabolism of *Bifidobacterium* species. *J. Dairy Sci.*, 75: 3296–3306.

Siuta-Cruce, P., and Goulet, J. 2001. Microencapsulation preserves the potency of probiotic microorganisms in food systems. *Food Technol.*, 55(10): 36-42.

Sriamornsak, P., Prakongpan, S., Puttipipatkhachorn, S., and Kennedy, R. A. 1997. Development of sustained release theophylline pellets coated with calcium pectinate. *J. Cont. Rel.*, 47: 221-232.

Sultana, K., Godward, G., Reynolds, N., Arumugaswamy, R., Peiris, P., and Kailasapathy, K. 2000. Encapsulation of probiotic bacteria with alginate-starch and evaluation of survival in stimulated gastrointestinal conditions and in yoghurt. *Int. J. Food Microbiol.*, 62: 47-55.

Sun, W., and Griffiths, M. W. 2000. Survival of bifidobacteria in yoghurt and simulated gastic juice following immobilized in gellan-xanthan beads. *Int. J. food Microbiol.*, 61: 17-25.

Swinkels, J. M. 1985. Sources of starch, its chemistry and physics. In G.M.A. van Beynum, and J.A Roers (Eds.), *Starch Conversion Technology*, New York: Marcel Dekker.

Tal, Y., Van-Rijn, J., and Nussinovitch, J. 1997. Improvement of structural and mechanical properties of denitrifying alginate beads by freeze-drying. *Biotechnol. Prog.*, 13(6): 788 –793.

Tamime, A. Y. 2002. Microbiology of starter cultures. In R. K. Robinson, (Ed.), *Dairy Microbiology Handbook* (3nd edition), New York: John Wiley and Sons.

Tamime A. Y., and Robinson, R. K. 2000. *Yoghurt: Science and Technology.* Boca Raton: CRC Press.

Tampion, J., and Tampion, M. D. 1987. *Immobilized cell: Principles and Applications.* Cambridge: Cambridge University Press.

Thai Standard for Industrial Products. 1991. Standard for tapioca pearl 1011-2533. *The government gazette*, Vol. 108, part 4, Office of Industrial Standard, Ministry of Industry, Bangkok, Thailand.

USP. 2002. *The United States Pharmacopeia*. United States Pharmacopeial Convention.

Varnam, A. H., and Sutherland, J. P. 1994. *Milk and Milk Products*. London: Chapman and Hall.

Whistler, R. L., BeMiller, J., and Paschall, E. F. 1984. *Starch: Chemistry and Technology*. New York: Academic Press.

Whitehead, L., Collett, J. H., and Fell, J. T. 2000. Amoxycillin release from a floating dosage form based on alginates. *Int. J. Pharma.*, 210: 45–49.

Wang, X., Brown, I. L., Evans, A. J., and Conway, P. L. 1999. The protective effects of high amylose maize (amylomaize) starch granules on the survival of *Bifidobacterium* spp. in the mouse intestinal tract. *J. Appl. Microbiol.*, 87: 631–639.

Wong, D. W. S. A., Pavlath, A. E., and Tillin, S. J. 1992. Edible double-layer coating for slightly processed fruits and vegetables. Symposium on edible coatings for food. American chemical society, August 23-28. Washington, D.C.

Wong, D. W. S. A., Camirand, W. M., and Pavlath, A. E. 1994. Development of edible coatings for minimally processed fruits and vegetables. In J. M. Krochta, E. A. Baldwin, and M. O. Nisperos-Carriedo (Eds.), *Edible Coatings and Films to Improve Food Quality* (pp. 65-88), Pennsylvania: Technomic Publishing.

Zohar-Pereza, C., Chetb, I., and Nussinovitcha, A. 2004. Irregular textural features of dried alginate–filler beads. *Food Hydrocol.*, 18: 249–258.