

REFERENCES

- Abe, Y., and Kondoh, Y. (1989). Oxygen absorbers. In A. L. Brody (Ed.), *Controlled/Modified Atmosphere/Vacuum Packaging of Foods* (pp. 149-158). Trumbull, CT: Food and Nutrition Press.
- Achouri, A., Boye, J. I., and Belanger, D. (2005). Soybean isoflavones: efficacy of extraction conditions and effect of food type on extractability. *Food Research International*, *38*, 1199-1204.
- Alekel, D. L., St Germai, A., Peterson, C. T., Hanson, K. B., Stewart, J. W., and Toda, T. (2000). Isoflavone-rich soy protein isolate attenuates bone loss in the lumbar spine of perimenopausal women. *The American Journal of Clinical Nutrition*, *72*, 844-852.
- Allagheny, N., Obanu, Z. A., Campbell-Platt, G., and Owens, J. D. (1996). Control of ammonia formation during *Bacillus subtilis* fermentation of legumes. *International Journal of Food Microbiology*, *29*, 321– 333.
- Allison, D. B., Gadbury, G., Schwartz, L. G., Murugesan, R., Kraker, J. L., Heshka, S., Fontaine, K. R., and Hevmsfield, S. B. (2003). A novel soy-based meal replacement formula for weight loss among obese individuals: a randomized controlled clinical trial. *European Journal of Clinical Nutrition*, *57*, 514-522.
- Anderson, J. W., Johnstone, B. M., and Cook-Newell, M. E. (1995). Meta-analysis of effects of soy protein intake on serum lipids. *The New England Journal of Medicine*, *333*, 276-282.
- AOAC. (2000). *Official methods of analysis* of AOAC Internatinal, 17th edition. AOAC International, Gaithersburg, MD.
- Atrea, I., Papavergou, A., Amvrosiadis, I., and Savvaidis, I. N. (2009). Combined effect of vacuum-packaging and oregano essential oil on the shelf-life of Mediterranean octopus (*Octopus vulgaris*) from the Aegean Sea stored at 4°C. *Food Microbiology*, *26*, 166-172.

- Babasaki, K., Takao, T., Shimonishi, Y., and Kurahashi, K. (1985). Subtilosin A, a new antibiotic peptide produced by *Bacillus subtilis* 168: isolation, structural analysis, and biogenesis. *The Journal of Biochemistry (Tokyo)*, *98*, 585–603.
- Barrantes, F. J. (1975). The nicotinic cholinergic receptor. Different compositions evidenced by statistical analysis. *Biochemical and Biophysical Research Communications*, *62*, 407-414.
- Besson, I., Creuly, C., Gros, J. B., and Larroche, C. (1997). Pyrazine production by *Bacillus subtilis* in solid-state fermentation on soybeans. *Applied Microbiology Biotechnology*, *47*, 489-495.
- Buttery, R. G., Ling, L. C., and Stern, D. J. (1997). Studies on popcorn aroma and flavour volatiles. *Journal of Agricultural and Food Chemistry*, *45*, 837-843.
- Cakli, S., Kilinc, B., Dincer, T., and Tolasa, S. (2006). Comparison of the shelf lives of map and vacuum packaged hot smoked rainbow trout (*Onchoryncus mykiss*). *European Food Research and Technology*, *224*, 19-26.
- Campbell-Platt, G. (1980). African locust bean (*Parkia* species) and its West African fermented food product, dawadawa. *Ecology of Food Nutrition*, *9*, 123-132.
- Chairote, G., and Kobayashi, A. (1987). Volatile constituents of 'Toa-nao' (Fermented Soybean). Open File Report ISSN 0857-0051. Faculty of Science, Chiang Mai University, Chiangmai, Thailand.
- Chang, C.-T., Hsu, C.-K., Chou, S.-T., Chen, Y.-C., Huang, F.-S., and Chung, Y.-C. (2009). Effect of fermentation time on the antioxidant activities of Tempeh prepared from fermented soybean using *Rhizopus oligosporus*. *International Journal of Food Science and Technology*, *44*, 799-806.
- Chantawannakul, P., Oncharoan, A., Klanbut, K., Chukeatirote, E., and Lumyong, S. (2002). Characterization of protease of *Bacillus subtilis* strain 38 isolated from traditionally fermented soybean in Northern Thailand. *ScienceAsia*, *28*, 241-245.
- Chein, J. T., Hsieh, H. C., Kao, T. H., and Chen, B.-H. (2005). Kinetic model for studying the conversion and degradation of isoflavones during heating. *Food Chemistry*, *91*, 425-434.

- Chen, H. M., Muramoto, K., Yamakuchi, F., Fujimoto, K., and Nokihara, K. (1998). Antioxidative properties of histidine-containing peptides designed from peptide fragments found in digests of a soybean protein. *Journal of Agricultural and Food Chemistry*, 46, 49-53.
- Chen, Y.-C., Sugiyama, Y., Abe, N., Kuruto-Niwa, R., Nozawa, R., and Hirota, A. (2005). DPPH radical-scavenging compounds from Dou-Chi, a soybean fermented food. *Bioscience, Biotechnology, and Biochemistry*, 69, 999-1006.
- Chien, H.-L., Huang, H.-Y., and Chou, C.-C. (2006). Transformation of isoflavone phytoestrogens during the fermentation of soymilk with lactic acid bacteria and bifidobacteria. *Food Microbiology*, 23, 772-778.
- Cho, M. J., Unblesbay, N., Hsie, F. H., and Clark, A. D. (2004). Hydrophobicity of bitter peptides from soy protein hydrolysates. *Journal of Agricultural and Food Chemistry*, 52, 5895-5901.
- Chouliara, I., Sawaidis, L. N., Riganakos, K., and Kontaminas, M. G. (2004). Preservation of salted, vacuum-packaged, refrigerated sea bream (*Sparus aurata*) fillets by irradiation: microbiological, chemical and sensory attributes. *Food Microbiology*, 21, 351-359.
- Chukeatirote, E., and Thakang, P. (2006). Chemical composition of thua nao-a fermented soybean food of northern Thailand. *Chiang Mai Journal of Science*, 33, 243-245.
- Chukeatirote, E., Chainun, C., Siengsubchart, A., Moukamnerd, C., Chantawannakul, P., Lumyong, S., Boontim, N., and Thakang, P. (2006). Microbiological and biochemical changes in *Thua Nao* fermentation. *Research Journal of Microbiology*, 1, 38-44.
- Chun, J., Kim, J. S., and Kim, J. H. (2008). Enrichment of isoflavone aglycones in soymilk by fermentation with single and mixed cultures of *Streptococcus infantarius* 12 and *Weissella* sp. 4. *Food Chemistry*, 109, 278-284.
- Chun, J., Kim, G. M., Lee, K. W., Choi, I. D., Kwon, G.-H., Park, J.-Y., Jeong, S.-J., Kim, J.-S., and Kim, J. H. (2007). Conversion of isoflavone glucosides to aglycones in soymilk by fermentation with lactic acid bacteria. *Journal of Food Science*, 72, 39-44.

- Chung, H. Y. (1999). Volatile components in fermented soybean (*Glycine max*) curds. *Journal of Agricultural and Food Chemistry*, 47, 2690-2696.
- Chunhachart, O., Itoh, T., Sukchotiratana, M., Tanimoto, H., and Tahara, Y. (2006). Characterization of γ -glutamyl hydrolase produced by *Bacillus* sp. isolated from Thai thua-nao. *Bioscience, Biotechnology, and Biochemistry*, 70, 2779-2782.
- Dajanta K., Wongkham, S., Thirach, P., Baophoeng, P., Apichartsrangkoon, A., Santithum, P., and Chukeatirote, E. (2009). Comparative study of proteolytic activity of protease-producing bacteria isolated from *thua nao*. *Maejo International Journal of Science and Technology*, 3, 269-276.
- Dakwa, S., Sakyi-Dawson, E., Diako, C., Annan, N. T., and Amoa-Awua, W. K. (2005). Effect of boiling and roasting on the fermentation of soybeans into dawadawa (soy-dawadawa). *International Journal of Food Microbiology*, 104, 69-82.
- Dastidar, S. G., Manna, A., Kumar, K. A., Mazumdar, K., Dutta, N. K., Chakrabary, A. N., Motohashi, N., and Shirataki, Y. (2004). Studies on the antibacterial potentiality of isoflavones. *International Journal of Antimicrobial Agents*, 23, 99-102.
- Day, A. J., DuPont, M. S., Ridley, S., Rhodes, M., Rhodes, M. J. C., Morgan, M. R. A., and Williamson, G. (1998). Deglycosylation of flavonoid and isoflavonoid glycosides by human small intestine and liver β -glucosidase activity. *FEBS Letters*, 436, 71-75.
- Delgado-Andrade, C., Rufián-Henares, J. A., and Morales, F. J. (2005). Assessing the antioxidant activity of melanoidins from coffee brews by different antioxidant methods. *Journal of Agriculture and Food Chemistry*, 53, 7832–7836.
- Delgado-Andrade, C., and Morales, F. J. (2005). Unraveling the contribution of melanoidins to the antioxidant activity of coffee brews. *Journal of Agriculture and Food Chemistry*, 53, 1403–1407.
- Di Mambro, V. M., and Fonseca, M. J. V. (2005). Assays of physical stability and antioxidant activity of topical formulation added with different plant extracts. *Journal of Pharmaceutical and Biomedical Analysis*, 37, 287-295.

- Dike, E. N., and Odunfa, S. A. (2003). Microbiological and biochemical evaluation of a fermented soyabean product-Soy-dadawadwa. *Journal of Food Science and Technology*, 40, 606-610.
- Eden, J. (1998). Phytoestrogens and the menopause. *Balliere's Clinical Endocrinology and Metabolism*, 12, 581-587.
- Esaki, H., Onozaki, H., Kawakishi, S., and Osawa, T. (1997). Antioxidant activity and isolation from soybeans fermented with *Aspergillus* spp. *Journal of Agricultural and Food Chemistry*, 45, 2020-2024.
- FAO/WHO/UNU (Expert Consultation) (2007). Protein and Amino Acid Requirements in Human Nutrition. Report of a joint FAO/WHO/UNU expert consultation, WHO technical report series no. 935. Food and Agriculture Organization/World Health Organization/United Nations, Geneva, Switzerland.
- Fernández, J., Pérez-Álvarez, J. A., and Fernández-López, J. A. (1997). Thiobarbituric acid test for monitoring lipid oxidation in meat. *Food Chemistry*, 59, 345-353.
- Fontaine, K. R., Yang, D., Gadbury, G. L., Heshka, S., Schwartz, L. G., Murugesan, R., Kraker, J. L., Heo, M., Heymsfield, S. B., and Allison, D. B. (2003). Results of soy-based meal replacement formula on weight, anthropometry, serum lipids & blood pressure during a 40-week clinical weight loss trial. *Nutrition Journal*, 2, 1-7.
- Fuller, M. F., and Garlick, P. J. (1994). Human amino acid requirements: Can the controversy be resolved?. *Annual Review Nutrition*, 14, 217-241.
- Garcia-Alonso, F. J., Bravo, S., Casas, J., Pérez-Conesa, D., Jacob, K., and Periago, M. J. (2009). Changes in antioxidant compounds during the shelf life of commercial tomato juices in different packaging material. *Journal of Agricultural and Food Chemistry*, 57, 6815-6822.
- Garcia-Esteban, M., Ansorena, D., Astiasaran, I., Martin, D., and Ruiz, J. (2004). Comparison of simultaneous distillation extraction (SDE) and solid-phase microextraction (SPME) for the analysis of volatile compounds in dry-cured ham. *Journal of the Science of Food and Agriculture*, 84, 1364-1370.

- Georgetti, S. R., Vicentini, F. T. M. C., Yokoyama, C. Y., Borin, M. F., and Spadaro, A. C. C. (2009). Enhanced *in vitro* and *in vivo* antioxidant activity and mobilization of free phenolic compounds of soybean flour fermented with different β -glucosidase-producing fungi. *Journal of Applied Microbiology*, *106*, 459-466.
- Gibbs, B. F., Zougman, A., Masse, R., and Mulligan, C. (2004). Production and characterization of bioactive peptides from soy hydrolysate and soy-fermented foods. *Food Research International*, *37*, 123-131.
- Gotoh, T., Yamada, K., Yin, H., Ito, A., Kataoka, T., and Dohi, K. (1998). Chemoprevention of *N*-Nitroso-*N*-methylurea-induced rat mammary carcinogenesis by soy foods or biochanin A. *Japanese Journal Cancer Research*, *89*, 137-142.
- Griffis, G., and Wiedermann, L. (1991). Marketing Food Quality Soybeans in Japan. American Soybean Association, Asian Division, St. Louis, MO.
- Grosch, W. (1982). Lipid degradation products and flavour. In I. D. Morton and A. J. Macleod (Eds.), *Food Flavours: Part A. Introduction*, (pp. 325-397). Amsterdam-Oxford-New York: Elsevier Scientific Publishing Company.
- Guadagni, D. G., Buttery, R. G., and Turnbaugh, J. G. (1972). Odor thresholds and similarity rating of some potato chip components. *Journal of the Science of Food and Agriculture*, *23*, 11435-1444.
- Gupta, Y. P. (1983). Nutritive value of food legumes. In S. K. Arora (Ed.), *Chemistry and Biochemistry of Legumes* (pp. 287-327). London: Edward Arnold Publish.
- Guss, P. L., Richardson, T., and Stahmann, M. A. (1967). The oxidation-reduction enzymes of wheat. III. Isoenzymes of lipoxidase in wheat fractions and soya bean. *Cereal Chemistry*, *44*, 606-610.
- Hammerschmidt, P. A., and Pratt, D. E. (1978). Phenolic antioxidants of dried soybean. *Journal of Food Science*, *43*, 556-559.
- Han, B.-Z., Rombouts, F. M., and Nout, M. J. R. (2004). Amino acid profiles of sufu, a Chinese fermented soybean food. *Journal of Food Composition and Analysis*, *17*, 689-698.

- Hattori, T., Ohishi, H., Yokota, T., Ohoami, H., and Watanabe, K. (1995). Antioxidative effect on crude antioxidant preparation from soybean fermented by *Bacillus natto*. *Lebensmittel-Wissenschaft und-Technologie*, 28, 135-138.
- Hesseltine, C. W. (1965). A millennium of fungi, food and fermentation. *Mycologia*, 59, 149-197.
- Hoeck, J. A., Fehr, W. R., Murphy, P. A., and Welke, G. A. (2000). Influence of genotype and environment on isoflavone contents of soybean. *Crop Science*, 40, 48-51.
- Hosoi, T., and Kiuchi, K. (2003). Natto-A Food Made by Fermenting Cooked Soybeans with *Bacillus subtilis* (natto). In E. R. Farnworth (Ed.), *Handbook of Fermented Functional Foods* (pp. 267-290). Boca Raton: CRC Press.
- Hu, J., Calomme, M., Lasure, A., Bruyne, T., Pieters, L., Vlietinck, A., and Vanden Berghe, D. (1995). Structure-activity relationship of flavonoids with superoxide scavenging activity. *Biological Trace Element Research*, 47, 327-331.
- Hurrell, R. F. (1982). Maillard reaction in flavour. In I. D. Morton, and A. J. Macleod (Eds.), *Food Flavours; Part A. Introduction* (pp. 399-438). Amsterdam-Oxford-New York: Elsevier Scientific Publishing Company.
- Ibe, S., Kumada, K., Yoshiba, M., and Onga, T. (2001). Production of natto which contains a high level of isoflavone aglycone. *Nippon Shokuhin Kagaku Kogaku Kaishi*, 48, 27-32.
- Ikeda, G., Tomizawa, A., Imayoshi, Y., Iwabuchi, H., Hinata, T., and Sagara, Y. (2006). Flavor Design of Sesame-flavored Dressing Using Gas Chromatography/Olfactometry and Food Kansei Model. *Food Science and Technology Research*, 12, 261-269.
- Imsande, J. (2003). Sulfur nutrition and legume seed quality. In Y. P. Abrol, and A. Ahmad (Eds.), *Sulfur in plants* (pp. 295-304). Dordrecht, the Netherlands: Kluwer Academic Publishers.

- Inatsu, Y., Nakamura, N., Yiroko, Y., Fushimi, T., Watanasiritum, L., and Kawamoto, S. (2006). Characterization of *Bacillus subtilis* strains in thua nao, a traditional fermented soybean food in northern Thailand. *Letters in Applied Microbiology*, *43*, 237-242.
- Ishimi, Y., Yoshida, M., Wakimoto, S., Wu, J., Chiba, H., Wang, X., Takeda, K., and Miyaura, C. (2002). Genistein, a soybean isoflavone, affects bone marrow lymphopoiesis and prevents bone loss in castrated male mice. *Bone*, *31*, 180-185.
- Iwai, K., Nakaya, N., Kawasaki, Y., and Matsue, H. (2002). Antioxidative functions of natto, a kind of fermented soybean: effect on LDL oxidation and lipid metabolism in cholesterol-fed rats. *Journal of Agricultural and Food Chemistry*, *50*, 3597-3601.
- Izumi, T., Piskula, M. K., Osawa, S., Obata, A., Tobe, K., Saito, M., Kataoka, S., Kubota, Y., and Kikuchi, M. (2000). Soy isoflavone aglycones are absorbed faster and in higher amounts than their glucosides in humans. *Journal of Nutrition*, *130*, 1695-1699.
- Jackson, C. J. C., Dini, J. P., Lavandier, C., Rupasinghe, H. P. V., Faulkner, H., Poysa, V., Buzzell, D., and DeGrandis, S. (2002). Effects of processing on the content and composition of isoflavones during manufacturing of soy beverage and tofu. *Process Biochemistry*, *37*, 1117-1123.
- James, C. S. (1995). Determination of nitrogen and protein by the Kjeldahl method using the Kjeltac instrument. *Analytical Chemistry of Food* (pp. 88-89). Oxford: The Alden Press.
- Jayaprakasha, G. K., Singh, R. P., and Sakariah, K. K. (2001). Antioxidant activity of grape seed (*Vitis vinifera*) extracts on peroxidation models *in vitro*. *Food Chemistry*, *73*, 285-290.
- Jeff-Agboola, Y. A., and Oguntuase, O. S. (2006). Effect of *Bacillus sphaericus* on proximate composition of soybean (*Glycine max*) for the production of soy iru. *Pakistan Journal of Nutrition*, *5*, 606-607.
- Jeleń, H. H. (2003). Use of solid phase microextraction (SPME) for profiling fungal volatile metabolites. *Letters in Applied Microbiology*, *36*, 263-267.

- Jideani, I. A. O., and Okeke, C. R. (1991). Comparative-study of microorganisms and sensory attributes of condiments from the fermentation of different seeds. *Plant foods for Human Nutrition*, 41, 27-34.
- Jung, K.-O., Park, S.-Y., and Park, K.-Y. (2006). Basic nutritional investigation: longer aging time increases the anticancer and antimetastatic properties of *doenjang*. *Nutrition*, 22, 539–545.
- Kao, T. K. Lu, Y. F., Hsieh, H. C., and Chen, B. H. (2004). Stability of isoflavone glucosides during processing of soymilk and tofu. *Food Research International*, 37, 891-900.
- Karahadian, C., and Johnson, K. A. (1993). Analysis of headspace volatiles and sensory characteristics of fresh corn tortillas made from fresh masa dough and spray-dried masa flour. *Journal of Agricultural and Food Chemistry*, 41, 791-799.
- Kathkonen, M. P., and Heinonen, M., (2003). Antioxidant activity of anthocyanins and their aglycones. *Journal of Agricultural and Food Chemistry*, 51, 628–633.
- Kato, H., Doi, Y., Tsugita, T., Kosai, K., Kamiya, T., and Kurata, T. (1981). Changes in volatile flavour components of soybeans during roasting. *Food Chemistry*, 7, 87-94.
- Kawazu, K., Zhang, H., and Kanzaki. (1996). Accumulation of benzoic acid in suspension of culture cells of *Pinus thunbergii* Oarl in response to phenylacetic acid administration. *Bioscience, Biotechnology, and Biochemistry*, 60, 1410-1412.
- Kiers, J. L., Nout, M. J. R., Rombouts, F. M., Nabuurs, M. J.A., and van der Meulen, J. (2002). Inhibition of adhesion of enterotoxigenic *Escherichia coli* K88 by soya bean tempe. *Letters in Applied Microbiology*, 35, 311–315.
- Kim, J. Y., Woo, H. J., Ahn, C. W., Nam, H. S., Shin, Z. I., and Lee, H. J. (1999). Cytotoxic effects of peptides fractionated from bromelain hydrolyzates of soybean protein. *Food Science and Biotechnology*, 8, 333-337.
- Kim, J.-A., and Chung, I.-M. (2007). Change in isoflavone concentration of soybean (*Glycine max* L.) seeds at different growth stages. *Journal of the Science of Food and Agriculture*, 87, 496-503.

- Kim, N. Y., Song, E. J., Kwon, D. Y., Kim, H. P., and Heo, M. Y. (2008). Antioxidant and antigenotoxic activities of Korean fermented soybean. *Food and Chemical Toxicology*, *46*, 1184-1189.
- Kim, S. H., Song, H. K., Ahn, J. K., Kim, J. T., Hahn, S. J., and Chung, I. M. (2004a). Changes of phenol compounds according to storing years in soybean. *Korean Journal of Crop Science*, *49*, 82-88.
- Kim, S. L., Chi, H. Y., Kim, J. T., Lee, Y. H., Park, N. K., Son, J. R., and Kim, S. J. (2006). Isoflavone content and its relationship with other seed quality traits of soybean cultivars collected in South Korea. *Korean Journal of Crop Science*, *51*, 81-88.
- Kim, W., Choi, K., and Kim, Y. (1996). Purification and characterization of a fibrinolytic enzyme produced from *Bacillus* sp. strain CK 11-4 screened from Chungkook-Jang. *Applied and Environmental Microbiology*, *62*, 2482-2488.
- Kim, Y., Cho, J.-Y., Kuk, J.-H., Moon, J.-H., Cho, J.-I., Kim, Y.-C., and Park, K.-H. (2004b). Identification and antimicrobial activity of phenylacetic acid produced by *Bacillus licheniformis* isolated from fermented soybean, Chungkook-Jang. *Current Microbiology*, *48*, 312-317.
- Kirk, R. S., and Sawyer, R. (1991). *Pearson's Composition and Analysis of Foods* (461-491). 9th edition. London: Longman Publication.
- Kiuchi, K., and Watanabe, S. (2004). Industrialization of Japanese natto. In K. H. Steinkraus (Ed.), *Industrialization of Indigenous Fermented Foods* (pp. 193-246). 2nd edition. Marcel Dekker, New York.
- Klein, C., Kaletta, C., and Entian, K. D. (1993). Biosynthesis of the Lantibiotic Subtilin is regulated by histidine kinase/response regulator system. *Applied and Environmental Microbiology*, *59*, 296-303.
- Klimczak, I., Malecka, M., Szlachta, M., and Gliszczyńska-Swigło, A. (2007). Effect of storage on the content of polyphenols, vitamin C and the antioxidant activity of orange juices. *Journal of Food Composition and Analysis*, *20*, 313-322.
- Kolapo, A. L., Popoola, T. O. S., and Sanni, M. O. (2007). Evaluation of biochemical deterioration of locust bean Daddawa and soybean Daddawa-two Nigerian condiments. *American Journal of Food Technology*, *2*, 440-445.

- Kosuge, T., and Kamiya, H. (1962). Discovery of a pyrazine in a natural product: tetramethylpyrazine from cultures of a strain of *Bacillus subtilis*. *Nature*, *193*, 776.
- Kunioka, M., and Goto, A. (1994). Biosynthesis of poly (γ -glutamic acid) from L-glutamic acid, citric acid, and ammonium sulfate in *Bacillus subtilis* IFO3335. *Applied Microbiology Biotechnology*, *40*, 867-872.
- Kuo, L. C., Cheng, W. Y., Wu, R. Y., Huang, C. J., and Lee, K. T. (2006). Hydrolysis of black soybean isoflavone glycosides by *Bacillus subtilis* natto. *Applied Microbiology and Biotechnology*, *73*, 314-320.
- Kwak, C. S., Lee, M. S., and Park, S. C. (2007). Higher antioxidant properties of Chungkukjang, a fermented soybean paste, may be due to increased aglycone and malonylglycoside isoflavone during fermentation. *Nutrition Research*, *27*, 719-727.
- Kwon, D. Y., Jang, J. S., Lee, J. E., Kim, Y. S., Shin, D. H., and Park, S. (2006). The isoflavonoid aglycone-rich fractions of Chungkookjang, fermented unsalted soybeans, enhance insulin signaling and peroxisome proliferator-activated receptor-c activity in vitro. *BioFactors*, *26*, 1-14.
- Kwon, D. Y., Jang, J. S., Hong, S. M., Lee, J. E., Sung, S. R., Park, H. R., and Park, S. (2007). Long-term consumption of fermented soybean-derived Chungkookjang enhances insulinotropic action unlike soybeans in 90% pancreatectomized diabetic rats. *European Journal of Nutrition*, *46*, 44-52.
- Larroche, C., Besson, I., and Gros, J.-B. (1999). High pyrazines production by *Bacillus subtilis* in solid substrate fermentation on ground soybeans. *Process Biochemistry*, *34*, 667-674.
- Lee, S.-J., and Ahn, B. (2009). Comparison of volatile compounds in fermented soybean paste using simultaneous distillation and extraction (SDE) with sensory characterisation. *Food Chemistry*, *114*, 600-609.
- Lee, E.-J., Volkov, V. I., Byun, M.-W., and Lee, C.-H. (2002). Detection of free radicals in gamma-irradiated soybean paste and model system by electron spin resonance spectroscopy. *Radiation Physics and Chemistry*, *64*, 61-66.

- Lee, C. H., Yang, L., Xu, J. Z., Yeung, S. Y. V., Huang, Y., and Chen, Z.-Y. (2005b). Relative antioxidant activity of soybean isoflavones and their glycoside. *Food Chemistry*, *90*, 735-741.
- Lee, H. P., Gourley, L., Duffy, S. W., Esteve, J., Lee, J., and Day, N. E. (1991). Dietary effects on breast-cancer risk in Singapore. *The Lancet*, *337*, 1197-1200.
- Lee, I.-H., Hung, Y.-H., and Chou, C.-C. (2007a). Total phenolic and anthocyanin contents, as well as antioxidant activity of black bean koji fermented by *Aspergillus awamori* under different culture conditions. *Food Chemistry*, *104*, 936-942.
- Lee, J. H., Renita, M., Fioritto, R., Martin, S. K. S., Schwartz, S. J., and Vodovotz. (2004). Isoflavone characterization and antioxidant activity of Ohio soybeans. *Journal of Agricultural and Food Chemistry*, *52*, 2647-2651.
- Lee, M. Y., Park, S.-Y., Jung, K.-O., Park, K.-Y., and Kim, S. D. (2005a). Quality and functional characteristics of Chungkukjang prepared with various *Bacillus* sp. isolated from traditional Chungkukjang. *Journal of Food Science*, *70*, M191-M196.
- Lee, S. J., Chung, I. M., Ahn, J. K., Kim, J. T., Kim, S. H., and Hahn, S. J. (2003). Variation in isoflavone of soybean cultivars with location and storage duration. *Journal of Agricultural and Food Chemistry*, *51*, 3383–3389.
- Lee, S. K., Heo, S., Bae, D. H., and Choi, K. H. (1998). Medium optimization for fibrinolytic enzyme production by *Bacillus subtilis* KCK-7 isolated from Korean traditional *Chungkookjang*. *Korean Journal of Applied Microbiology and Biotechnology*, *26*, 226–231.
- Lee, Y. B., Elliott, J. G., Rickanarud, D. A., and Hagberg, E. C. (1978). Predicting protein efficiency ratio by the chemical determination of connective tissue content in meat. *Journal of Food Science*, *43*, 1359-1362.
- Lee, Y.-W., Kim, J.-D., Zheng, J., and Row, K.H. (2007b). Comparisons of isoflavones from Korean and Chinese soybean and processed products. *Biochemical Engineering Journal*, *36*, 49-53.

- Leejeerajumnean, A., Duckham, S. C., Owens, J. D., and Ames, J. M. (2001). Volatile compounds in *Bacillus*-fermented soybeans. *Journal of the Science of Food and Agriculture*, 81, 525-529.
- Leejeerajumnean, A. (2003). Thua nao: alkali fermented soybean from *Bacillus subtilis*. *Silpakorn University International Journal*, 3, 277-292.
- Leifert, C., Li, H., Chidburee, S., Hampson, S., Workman, S., Sigee, D., Epton, H.A.S., and Harbour, A. (1995). Antibiotic production and biocontrol activity by *Bacillus subtilis* CL27 and *Bacillus pumilus* CL45. *Journal of Applied Bacteriology*, 78, 97-108.
- Lin, C.-H., Wei, Y.-T., and Chou, C.-C. (2006). Enhanced antioxidant activity of soybean koji prepared with various filamentous fungi. *Food Microbiology*, 23, 628-633.
- Liu, D., Zhen, W., Yang, Z., Carter, J.D., Si, H., and Reynolds, K.A. (2006). Genistein acutely stimulates insulin secretion in pancreatic β -cells through a cAMP-dependent protein kinase pathway. *Diabetes*, 55, 1043–1050.
- Liu, K. (2004). Soy isoflavones: Chemistry, processing effects, health benefits, and commercial production. In K. Liu (Ed.), *Soybean as Functional Foods and Ingredients* (pp. 51-72). Champaign, Illinois: AOCS Press.
- Lo, Y.-C. M., Koziel, J. A., Cai, L., Hoff S. J., Jenks, W. S., and Xin, H. (2008). Simultaneous chemical and sensory characterization of volatile organic compounds and semi-volatile organic compounds emitted from swine manure using solid phase microextraction and multidimension gas chromatography-mass spectrometry-olfactometry. *Journal of Environmental Quality*, 37, 521-534.
- MacLeod, G., and Ames, J. (1988). Soy flavour and its improvement. *Critical Reviews in Food Science and Nutrition*, 27, 218-400.
- Makela S. I., Pykkänen L. H., Santti R. S., and Adlercreutz H. (1995). Dietary soybean may be antiestrogenic in male mice. *Journal of Nutrition*, 125, 437-445
- Makishima, M., Honma, Y., Hozumi, M., Nagata, N., and Motoyoshi, K. (1993) Differentiation of human monoblastic leukemia U837 cells induced by inhibitors of myosin light chain kinase and prevention of differentiation by

- granulocyte macrophage colony stimulating factor. *Biochimica Biophysica Acta*, 1176, 245-249.
- Manzocco, L., Calligaris, S., Mastrocola, D., Nicoli, M. C., and Lericci, C.R. (2001). Review of nonenzymatic browning and antioxidant capacity in processed foods. *Trends in Food Science and Technology*, 11, 340–346.
- Maruo, B., and Yoshikawa, H. (1989). The secondary metabolism I *Bacillus subtilis*: Molecular Biology and Industrial Application. In B. Maruo, and H. Yoshikawa (Eds.), *Industrial Application of B. subtilis* (pp. 143-161). New York: Elsevier Science Publishing.
- Matsukawa, Y., Marui, N., Sakai, T., Satomi, Y., Yoshida, M., Matsumoto, K., Nishino, H., and Aoike, A. (1993) Genistein arrests cell cycle progression at G2-M. *Cancer Research*, 53, 1328-1331.
- Matsumoto, I., Akimoto, T., and Imai, S. (1993). Effects of the temperature and inoculum size on natto appearance number of *B. natto* temperature hardness and color tone during fermentation. *Journal of the Japanese Society for Food Science and Technology*, 40, 75-82.
- Matsumoto, I., Akimoto, T., and Imai, S. (1995). Effects of soybean cooking condition on the quality of natto. *Journal of the Japanese Society for Food Science and Technology*, 42, 338-343.
- Mbarki, R., Miloud, N. B., Selmi, S., Dhib, S., and Sadok, S. (2009). Effect of vacuum packaging and low-dose irradiation on the microbial, chemical and sensory characteristics of chub mackerel (*Scomber japonicus*). *Food Microbiology*, 26, 821-826.
- McCue, P., and Shetty, K. (2003). Role of carbohydrate-cleaving enzymes in phenolic antioxidant mobilization from whole soybean fermented with *Rhizopus oligosporus*. *Food Biotechnology*, 17, 27-37.
- Messina, M., and Bennink, M. (1998). Soyfoods, isoflavones and risk of colonic cancer: a review of the in vitro and in vivo data. *Baillie`re's Clinical Endocrinology and Metabolism*, 12, 707–728.
- Mhammedi, A., Peypoux, F., Besson, F., and Michel, G. (1982). Bacillomycin F, a new antibiotic of iturin group: isolation and characterization. *The Journal of Antibiotic (Tokyo)*, 35, 306–311.

- Miliauskas, G., Venskutonis, P. R., and van Beek, T. A. (2004). Screening of radical scavenging activity of some medicinal and aromatic plant extracts. *Food Chemistry*, 85, 231-237.
- Milner, M., and Makise, K. (2002). Natto and its active ingredient nattokinases-A potent and safe thrombolytic agent. *Alternative and Complementary Therapies*, 8, 157-194.
- Mitchell, J. H., Gardner, P. T, McPhail, D. B., Morrice, P. C., Collins, A. R., and Duthie, G. G. (1998). Antioxidant efficacy of phytoestrogens in chemical and biological model systems. *Archives of Biochemistry and Biophysics*, 360, 142-148.
- Miura, T., Yuan, L., Sun, B., Fujii, H., Yoshida, M., Wakame, K., and Kosuna, K. (2002). Isoflavone aglycone produced by culture of soybean extracts with basidiomycetes and its anti-angiogenic activity. *Bioscience, Biotechnology, and Biochemistry*, 66, 2626-2631.
- Moktan, B., Saha, J., and Sarkar, K. (2008). Antioxidant activities of soybean as affected by *Bacillus*-fermentation of kinema. *Food Research International*, 41, 586-593.
- Motta, A. S., Cladera-Olivera, F., and Brandelli, A. (2004). Screening for antimicrobial activity among bacteria isolated from Amazon basin. *Brazilian Journal of Microbiology*, 35, 307-310.
- Muñoz, N., Ortigosa, M., Torre, P., and Izco, J. M. (2003). Free amino acids and volatile compounds in an ewe's milk cheese as affected by seasonal and cheese-making plant variations. *Food Chemistry*, 83, 329-338.
- Muramatsu, K., Katsumata, R., Watanabe, S., Tanaka, T., and Kiuchi, K. (2001). Development producing natto *Bacillus*. *Journal of the Japanese Society for Food Science and Technology*, 48, 287-298.
- Murcia, M. A., Jiménez, A. M., and Martínez-Tomé, M. (2009). Vegetables antioxidant losses during industrial processing and refrigerated storage. *Food Research International*, 42, 1046-1052.
- Murota, K., Shimizu, S., Miyamoto, S., Izumi, T., Obata, A., Kikuchi, M., and Terao, J. (2002). Unique uptake and transport of isoflavone aglycones by human

- intestinal Caco-2 cells: comparison of isoflavonoids and flavonoids. *The Journal of Nutrition*, 132, 1956-1961.
- Nagata, C., Takatsuka, N., Kurisu, Y., and Shimizu, H. (1998). Decreased serum total cholesterol concentration is associated with high intake of soy products in Japanese men and women. *Journal of Nutrition*, 128, 209-213.
- Naik, H. R., Lehr, J. E., and Pienta, K. J. (1994). An *in vitro* and *in vivo* study of antitumor effects of genistein on hormone refractory prostate cancer. *Anticancer Research*, 14, 2617-2620.
- Naim, M., Gestetner, B., Zilkah, S., Birk, Y., and Bondi, A. (1974). Soybean isoflavones: characterization, determination, and antifungal Activity. *Journal of Agricultural and Food Chemistry*, 22, 806-810.
- Nakajima, N., Nozaki, N., Ishihara, K., Ishikawa, A., and Tsuji, H. (2005). Analysis of isoflavone content in tempeh, a fermented soybean, and preparation of a new isoflavone-enriched tempeh. *Journal of Bioscience and Bioengineering*, 100, 685-687.
- Nam, K. C., and Ahn, D. U. (2003). Combination of aerobic and vacuum packaging to control lipid oxidation and off-odor volatiles of irradiated raw turkey breast. *Meat Science*, 63, 389-395.
- Nielsen, N. C. (1985). Structure of soy proteins. In A. M. Altschul, and H. L. Wilcke (Eds.), *New protein foods, Vol. 5. Seed storage proteins* (pp. 27-64). Orlando: Academic Press.
- Nikkuni, S., Karki, T.B., Vilku, K. S., Suzuki, T., Shindoh, K., Suzuki, C., and Okada, N. (1995). Mineral in Nepal and amino acid contents of Kinema, a fermented soybean food prepared in Nepal. *Food Science and Technology International*, 1, 107-111.
- Nout, M. J. R., Bakshi, D., and Sarkar, P. K. (1998). Microbiological safety of kinema, a fermented soya bean food. *Food Control*, 9, 357-362.
- Odunfa, S. A. (1986). Dawadawa. In N. R. Reddy, M. D. Pierson, and D.K. Salunkhe (Eds.), *Legume-based Fermentated Foods*, (pp.173-189). Boca Raton: CRC Press.

- Ogawa, Y., Yamaguchi, F., Yuasa, K., and Tahara, Y., (1997). Efficient production of γ -polyglutamic acid by *Bacillus subtilis* (natto) in jar fermenters. *Bioscience, Biotechnology, and Biochemistry*, *61*, 1684-1687.
- Ogbadu, C. O., and Okagbue, R.N. (1988). Bacterial fermentation of soybeans for daddawa production. *Journal of Applied Bacteriology*, *65*, 353-356.
- Ohta, T. (1986). Natto. In N. R. Reddy, M. D. Pierson, D. Merle, and D. K. Salunkhe (Eds.), *Legume-based Fermentated Foods* (pp. 85-93). Boca Raton: CRC Press.
- Okamoto, A., Hanagata, H., Kaqamura, Y., and Yanagida, F. (1995). Anti-hypertensive substances in fermented soybean, natto. *Plant Foods for Human Nutrition*, *47*, 39-47.
- Omafuvbe, B. O. (2006). Effect of salt on the fermentation of soybean (*Glycine max*) into daddawa using *B. subtilis* as starter culture. *African Journal of Biotechnology*, *5*, 1001-1005.
- Omafuvbe, B. O. (2008). Effect of temperature on biochemical changes induced by *Bacillus subtilis* (SDA3) during starter culture fermentation of soybean into condiment (soy-Daddawa). *American Journal of Food Technology*, *3*, 33-41.
- Omafuvbe, B. O., Shonukan, O. O., and Abiose, S. H. (2000). Microbiological and biochemical changes in the traditional fermentation of soybean for soy-daddawa-Nigerian food condiment. *Food Microbiology*, *17*, 465-474.
- Omafuvbe, B. O., Abiose, S. H., and Shonukan, O. O. (2002). Fermentation of soybean (*Glycine max*) for soy-daddawa production by starter cultures of *Bacillus*. *Food Microbiology*, *19*, 561-566.
- Omura, K., Hitosugi, M., Zhu, X., Ikeda, M., Maeda, H., and Tokudome, S. (2005). A newly derived protein from *Bacillus subtilis natto* with both antithrombotic and fibrinolytic effects. *Journal of Pharmacological Sciences*, *99*, 247 – 251.
- Ouoba, L. I. I., Diawara, B., Annan, N. T., Poll, L., and Jakobsen, M. (2005). Volatile compounds of Soumbala, a fermented African locust bean (*Parkia biglobosa*) food condiment. *Journal of Applied Microbiology*, *99*, 1413-1421.

- Ouoba, L. I. I., Diawara, B., Jespersen, L., and Jakobsen, M. (2007). Antimicrobial activity of *Bacillus subtilis* and *Bacillus pumilus* during the fermentation of African locust bean (*Parkia biglobosa*) for Soumbala production. *Journal of Applied Microbiology*, 102, 963-970.
- Owens J. D., Allagheny, N., Kipping, G., and Ames, J. M. (1997). Formation of volatile compounds during *Bacillus subtilis* fermentation of soya beans. *Journal of the Science of Food and Agriculture*, 74, 132-140.
- Paik, S. H., Chakicherla, A., and Hansen, J. N. (1998). Identification and characterization of structural and transporter genes for, and the chemical and biological properties of Sublancin 168, a novel lantibiotic produced by *Bacillus subtilis* 168. *The Journal of Biological Chemistry*, 273, 23134-23142.
- Parejo, I., Viladomat, F., Bastida, J., Rosas-Romero, A., Saavedra, G., Murcia, M. A., Jiménez, A. M., and Codina, C. (2003) Investigation of Bolivian plant extracts for their radical scavenging activity and antioxidant activity. *Life Sciences*, 73, 1667-1681.
- Park, D., Huang, T., and Frishman, W. H. (2005). Phytoestrogens as cardioprotective agents. *Cardiology Reviews*, 13, 13–17.
- Park, K.-Y., Jung, K.-O., Rhee, S.-H., and Choi, Y. H. (2003). Antimutagenic effects of *doenjang* (Korean fermented soypaste) and its active compounds. *Mutation Research/Fundamental and Molecular Mechanisms of Mutagenesis*, 523–524, 43–53.
- Parkouda, C., Nielsen, D. S., Azokpota, P., Ouoba, L. I. I., Amoa-Awua, W. K., Thorsen, L., Hounhouigan, J. D., Jensen, J. S., Tano-Debrah, K., Diawara, B., and Jakobsen, M. (2009). The microbiology of alkaline-fermentation of indigenous seeds used as food condiments in Africa and Asia (review). *Critical Reviews in Microbiology*, 35, 139-156.
- Peluso, M. R., Winters, T. A., Shanahan, M. F., and Banz, W. J. (2000). A Cooperative Interaction between Soy Protein and Its Isoflavone-Enriched Fraction Lowers Hepatic Lipids in Male Obese Zucker Rats and Reduces Blood Platelet Sensitivity in Male Sprague-Dawley Rats. *Journal of Nutrition*, 130, 2333-2342.

- Pereira, A. P., Ferreira, I. C. F. R., Marcelino, F., Valentão, P., Andrade, F., Seabra, R., Estevinho, L., Bento, A., and Pereira, J. A. (2007). Phenolic compounds and antimicrobial activity of olive (*Olea europaea* L. cv. Cobrancosa) leaves. *Molecules*, *12*, 1153-1162.
- Pereira, J. A., Ferreira, I. C. F. R., Marcelino, F., Valentão, P., Andrade, F., Seabra, R., Estevinho, L., Bento, A., and Pereira, J. A. (2006). Table olives from Portugal: phenolic compounds, antioxidant potential and antimicrobial activity. *Journal of Agricultural and Food Chemistry*, *54*, 8425-8431.
- Peterson, G., and Barnes, S. (1991). Genistein inhibition of the growth of human breast cancer cells: independence from estrogen receptors and the multi-drug resistance gene. *Biochemical and Biophysical Research Communications*, *179*, 661-667.
- Peterson, G., and Barnes, S. (1993). Genistein and biochanin A inhibit the growth prostate cancer cells but not epidermal growth factor receptor autophosphorylation. *Prostate*, *22*, 335-345.
- Peterson, T. G., Ji, G. P., Kirk, M., Coward, L., Falany, C. N., and Barnes, S. (1998). Metabolism of the isoflavones genistein and dichanin A in human breast cancer cell lines. *The American Journal of Clinical Nutrition*, *68*, 1505S-1511S.
- Popoola, T. O. S., and Akueshi, C. O. (1985). Microorganisms associated with the fermentation of soybean for the production of 'daddawa' (A condiment). *Nigerian Food Journal*, *2*, 194-196.
- Potter, S. M. (1995). Overview of proposed mechanisms for the hypocholesterolemic effect of soy. *Journal of Nutrition*, *68*, 1375S-1379S.
- Potter, S. M., Baum, J. A., Teng, H., Stillman, R. J., Shay, N. F., and Erdman, J. W. Jr. (1998). Soy protein and isoflavones: their effects on blood lipids and bone density in postmenopausal women. *The American Journal of Clinical Nutrition*, *68*, 1375S-1379S.
- Prajapati, J. B., and Nair, B. M. (2004). The history of fermented foods. In E. R. Farnworth (Ed.), *Handbook of Fermented Functional Foods* (pp. 1-26). Boca Raton: CRC Press.

- Prakash, D., Upadhyay, G., Singh, B. N., and Singh, H. B. (2007). Antioxidant and free radical-scavenging activities of seeds and agri-waste of some variety of soybean (*Glycine max*). *Food Chemistry*, *104*, 783-790.
- Pratt, D. E., and Birac, P. M. (1979). Source of antioxidant activity of soybeans and soy products. *Journal of Food Science*, *44*, 1720-1722.
- Proestos, C., Chorianopoulos, N., Nychas, G.-J. E., and Komaitis, M. (2005). RP-HPLC analysis of the phenolic compounds of plant extracts: investigation of their antioxidant capacity and antimicrobial activity. *Journal of Agricultural and Food Chemistry*, *53*, 1190-1195.
- Qin, L., and Ding, X. (2007). Formation of taste and odor compounds during preparation of Douchiba, a Chinese traditional soy-fermented appetizer. *Journal of Food Biochemistry*, *31*, 230-251.
- Rauth, S., Kichina, J., and Green, A. (1997). Inhibition of growth and induction of differentiation of metastatic melanoma cells in vitro by genistein: chemosensitivity is regulated by cellular. *British Journal of Cancer*, *75*, 1559-1566.
- Reineccius, G. (2006). Changes in food flavor due to processing. In G. Reineccius Ed.), *Flavor Chemistry and Technology* (pp. 103-137). 2nd edition. Boca Raton: CRC Press.
- Rice-Evans, C. A., Miller, N. J., Bolwell, P. G., Bramley, P. M., and Pridham, J. B. (1995). The relative antioxidant activities of plant derived polyphenolic flavonoids. *Free Radical Research*, *22*, 375-383.
- Rossell, J. B. (1994). Measurement of Rancidity. In J. C. Allen, and R. J. Hamilton (Eds.), *Rancidity in Foods* (pp. 22-53). 3rd edition. Glasgow: Blackie Academic and Professional, An Imprint of Chapman and Hall.
- Rufian-Henares, J. A., and Morales, F. J. (2007a). Functional properties of melanoidins: in vitro antioxidant, antimicrobial and antihypertensive activities. *Food Research International*, *40*, 995-1002.
- Rufian-Henares, J.A., and Morales, F.J. (2006). A new application of a commercial microtiter plate-based assay for assessing the antimicrobial activity of Maillard reaction products. *Food Research International*, *39*, 33-39.

- Rufián-Henares, J. A., and Morales, F. J. (2007). Antimicrobial activity of melanoidins. *Journal of Food Quality*, 30, 160–168.
- Ruiz-Capillas, C., and Moral, A. (2001). Residual effect of CO₂ on hake (*Merluccius merluccius* L.) stored in modified and controlled atmospheres. *European Food Research and Technology*, 212, 413-420.
- Ruth, S. M., Dings, L., Aprea, E., and Odake, S. (2005). Comparison of volatile flavour profile of kidney beans and soybeans by GC-MS and PTR-MS. *Food Science and Technology Research*, 11, 63-70.
- Saito, K., Jin, D. H., Ogawa, T., Muramoto, K., Hatakeyama, E. Yasuhara, T., and Nokihara, K. (2003). Antioxidative properties of tripeptide libraries prepared by the combinatorial chemistry. *Journal of Agricultural and Food Chemistry*, 51, 3668-3674.
- Sakurai, Y. (1960). Report of the researches on the production of high-protein food from fermented soybean products. Fukagawa P.O., Tokyo, Food Research Institute, Ministry of Agriculture and Forestry.
- Sarkar, P. K., Tamang, J. P., Cook, P. E., and Owens, J. D. (1994). Kinema-a traditional soybean fermented food: proximate composition and microflora. *Food Microbiology*, 11, 47-55.
- Sarkar, P. K., Hasenack, B., and Nout, M. J. R. (2002). Diversity and functionality of *Bacillus* and related genera isolated from spontaneously fermented soybeans Indian kinema, and locust beans African soumbala. *International Journal of Food Microbiology*, 77, 175-186.
- Sarkar, P. K., Jones, L. J., Craven, G. S., Somerset, S. M., and Palmer, C. (1997). Amino acid profiles of kinema, a soybean-fermented food. *Food Chemistry*, 59, 69-75.
- Sarkar, P. K., and Tamang, J. P. (1995). Changes in the microbial profile and proximate composition during natural and controlled fermentation of soybeans to produce kinema. *Food Microbiology*, 12, 317-325.
- Sarkar, P. K., Cook, P. E., and Owens, J. D. (1993). *Bacillus* fermentation of soybeans. *World Journal of Microbiology and Biotechnology*, 9, 295-299.
- Shahidi, F., Janitha, P. K., and Wanasundara, P. D. (1992). Phenolic antioxidants. *Critical Reviews in Food Science*, 32, 67-103.

- Shenin, I. D., Kruglikova, L. F., Kal'ko, G. N., and Novikova, I. I. (1995). The characteristics of alirin B-1 – the basic component of a fungicidal preparation produced by the *Bacillus subtilis* 10-VIZR strain. *Antibiotiki i Khimioterapiya*, 151, 159-165.
- Shon, M.-Y., Lee, J., Choi, J.-H., Choi, S.-Y., Nam, S.-H., Seo, K.-I., Lee, S.-W., Sung, N.-J., and Park, S.-K. (2007). Antioxidant and free radical scavenging activity of methanol extract of *chungkukjang*. *Journal of Food Composition and Analysis*, 20, 113-118.
- Shu, C.-K. (1998). Pyrazine formation from amino acids and reducing sugars, a pathway other than Strecker degradation. *Journal of Agricultural and Food Chemistry*, 46, 1515-1517.
- Shu, C.-K. (1999). Pyrazine formation from serine and threonine. *Journal of Agricultural and Food Chemistry*, 47, 4332-4335.
- Sinnhuber, R. O., Yu, I. C., and Yu, T. C. (1958). Characterization of the red pigment formed in the 2-thiobarbituric acid determination of oxidative rancidity. *Food Research*, 23, 624-634.
- Stecchini, M. L., Giavedoni, P., Sarais, I., and Lericci, C. R. (1993). Antimicrobial activity of Maillard reaction products against *Aeromonas hydrophila*. *Italian Journal of Food Science*, 5, 147–150.
- Stein, T., Düsterhus, S., Stroh, A., and Entian, K.-D. (2004). Subtilosin production by two *Bacillus subtilis* subspecies and variance of the sbo-alb cluster. *Applied and Environmental Microbiology*, 70, 2349-2353.
- Steinhaus, P., and Schieberle, P. (2007). Characterization of the key aroma compounds in soy sauce using approaches of molecular sensory science. *Journal of Agricultural and Food Chemistry*, 55, 6262-6269.
- Steinkraus, K. H. (1983). Miscellaneous oriental fermentations, Chinese soy sauce, pastes and related fermented foods. In K. H. Steinkraus (Ed.), *Handbook of Indigenous Fermented Foods* (pp. 530-571). New York: Marcel Dekker.
- Steinkraus, K. H. (1991). African alkaline fermented foods and their relation to similar fermented foods in other parts of the world. In A. Westby, and P. J. A. Reilly (Eds.), *Traditional African Foods: Quality and Nutrition* (pp. 87-92). Stockholm: International Foundation for Science.

- Steinkraus, K. H., (1996). Indigenous Fermented Foods Involving an Alkaline Fermentation. In K. H. Steinkraus (Ed.), *Handbook of Indigenous Fermented Foods* (pp. 349-362). 2nd edition. New York: Marcel Dekker.
- Stephan, A., and Steinhart, H. (1999). Quantification and sensory studies of character impact odorants of different soybean lecithin. *Journal of Agricultural and Food Chemistry*, 47, 4357-4364.
- Sugawara, E., Ito, T., Odagiri, S., Kubota, K., and Kobayashi, A. (1985). Comparison of compositions of odor components of natto and cooked soybeans. *Agricultural and Biological Chemistry*, 49, 311-317.
- Sumi, H., Hamada, H., Tsushima, H., Mihara, H., and Muraki, H. (1987). A novel fibrinolytic enzyme (nattokinase) in the vegetable cheese Natto: A typical and popular soybean food in the Japanese diet. *Experientia*, 43, 1110-1111.
- Sundhagul, M., Smanmathuroj, P., and Bhodacharoen, W. (1972). Thua-Nao: A fermented soybean food of northern Thailand. I. Traditional processing method. *Thai Journal of Agricultural Science*, 5, 43-56.
- Taira, H. (1990). Quality of soybeans for processed foods in Japan. *Japan Agricultural Research Quarterly*, 24, 224-230.
- Taira, H., and Suzuki, N. (1983). Lipid content and fatty acid composition of natto. *Report National Food Research Institute*, 43, 58-61.
- Taira, H., Suzuki, N., Tsukamoto, C., Kainuma, Y., Tanaka, H., and Saito, M. (1987). Suitability for natto processing of small seed cultivars and quality of the natto: Quality of soybean seeds grown in Japan. *Report National Food Research Institute*, 51, 48-58.
- Tamang, J. P. (1993) Studies on the microflora of some traditional fermented foods of Darjeeling hills and Sikkim. Ph.D. Thesis. Siliguri, University of North Bengal, India.
- Tamang, J. P., Sarkar, P. K., and Hesseltine, C. W. (1988). Traditional fermented foods and beverages of Darjeeling and Sikkim-a review. *Journal of the Science of Food and Agriculture*, 44, 375-385.
- Tamang, J. P., and Nikkuni, S. (1996). Selection of starter cultures for the production of kinema, a fermented soybean food of the Himalaya. *World Journal of Microbiology and Biotechnology*, 12, 629-635.

- Tamehiro, N., Okamoto-Hosoya, Y., Okamoto, S., Ubukata, M., Hamada, M., Naganawa, H., and Ochi, K. (2002). Bacilysocin, a Novel Phospholipid Antibiotic Produced by *Bacillus subtilis* 168. *Antimicrobial Agents and Chemotherapy*, 46, 315-320.
- Tanaka, T., Muramatsu, K., Kim, H.-R., Watanabe, T., Takeyasu, M., Kanai, Y., and Kiuchi, K. (1998). Comparison of volatile compounds from Chungkuk-Jang and Itohiki-Natto. *Bioscience, Biotechnology, and Biochemistry*, 62, 1440-1444.
- Tangjitjaroenkun, J., Kitpreechavanich, V., Suthirawut, S., Chim-anage, P., Praprilong, W., Krusong, W., and Yongsmith, B. (2004). Improvement of high vitamin B12 Thua nao by mixed cultures of soybean oligosaccharide and the use of bacteria and yeasts. *Kasetsart Journal (Natural Science)*, 38, 123-130
- Tavaria, F. K., Dahl, S., Carballo, F. J., and Malcata, F. X. (2002). Amino acid catabolism and generation of volatiles by lactic acid bacteria. *Journal of Dairy Science*, 85, 2462-2470.
- Teng, D.-F., Lin, C.-S., and Hsieh, P.-C. (2004). Fermentated Whole soybeans and Soybean Paste. In Y. H. Hui, L. Meunier-Goddik, A. S. Hansen, J. Josephsen, W.-K. Nip, P. S. Stanfield, and F. Toldrá (Eds.), *Handbook of Food and Beverage Fermentation Technology* (pp. 532-539). New York: Marcel Dekker, Inc.
- Terlabie, N. N., Sakyi-Dawson, E., and Amoa-Awua, W. K. (2006). The comparative ability of four isolates of *B. subtilis* to ferment soybeans into daddawa. *International Journal of Food Microbiology*, 106, 145-152.
- Thornycroft, I. H. (1989). The role of oestrogen replacement therapy in the prevention of osteoporosis. *American Journal of Obstetrics and Gynecology*, 160, 1306–1310.
- Toda, T., Sakamoto, A., Takayanagi, T., and Yokotsuka, K. (2000). Changes in isoflavone compositions of soybean foods during cooking process. *Food Science and Technology Research*, 6, 314–319.
- Toda, T., Sakamoto, A., Takayanagi, T., and Yokotsuka, K. (2001). Changes in isoflavone compositions of soybean during soaking in water. *Food Science and Technology Research*, 7, 171–175.

- Troszynska, A. A., and Ciska, E. (2002). Phenolic compounds of seed coats white and coloured varieties of pea (*Pisum sativum* L.) their total antioxidant activity. *Czech Journal of Food Sciences*, 20, 15-22.
- Tseng, Y. H., Lee, Y. L., Li, R. C., and Mau, J. L. (2005). Non-volatile flavor components of *Ganoderma tsugae*. *Food Chemistry*, 90, 409-415.
- Tsuji, K., and Tsuji, E. (1986). Effect of natto-feeding on cholesterol level of rats. *Japanese Journal of Nutrition*, 44, 41-44.
- Tsukamoto, Y., Ichise, H., Kakuda, H., and Yamaguchi, M. (2000). Intake of fermented soybean (*natto*) increases circulating vitamin K₂ (menaquinone-7) and γ -carboxylated osteocalcin concentration in normal individuals. *Journal of Bone and Mineral Metabolism*, 18, 216-222.
- Visessanguan, W., Benjakul, S., Potachareon, W., Panya, A., and Riebroy, S. (2005). Accelerated proteolysis of soy proteins during fermentation of thua-nao inoculated with *Bacillus subtilis*. *Journal of Food Biochemistry*, 29, 349-366.
- Wang, D., Wang, L.-J., Zhu, F.-X., Zhu, J.-Y, Chen, X.D., Zou, L., Saito, M., and Li, L.-T. (2008). *In vitro* and *in vivo* studies on the antioxidant activities of the aqueous extracts of Douchi (a traditional Chinese salt-fermented soybean food). *Food Chemistry*, 107, 1421-1428.
- Wang, H., and Murphy, P. A. (1994). Isoflavone composition of American and Japanese soybean in Iowa: effects of variety, crop year, and location. *Journal of Agricultural and Food Chemistry*, 42, 1674-1677.
- Wang, H., Nair, M. G., Strasburg, G. M., Chang, Y., Booren, A. M., Gray, J. I., and DeWitt, D. L. (1999). Antioxidant and anti-inflammatory activities of anthocyanins and their aglycon, cyaniding, from tart cherries. *Journal of Natural Products*, 62, 294-296.
- Wang, L. J., Yin, L.-J., Li, D., Zou, L., Saito, M., Tatsumi, E., and Li, L. T. (2007). Influences of processing and NaCl supplementation on isoflavone contents and composition during douchi manufacturing. *Food Chemistry*, 10, 1247-1253.
- Watanabe, T., Ebine, H., and Ohta, T. (1975). Natto bacilli and their characteristics. In S. C. Kohrin (Ed.), *Soybean Food* (pp. 124-125). Tokyo.

- Wei, H. Bowen, R., Cai, Q., Barnes, S., and Wang, Y. (1995). Antioxidant and antipromotional effects of soybean isoflavone genistein. *Proceeding of the Society for Experimental Biology and Medicine*, 208, 124-130.
- Wei, Q., and Chang, S. K. C. (2004). Characteristics of fermented natto products as affected by soybean cultivars. *Journal of Food Processing and Preservation*, 28, 251-273.
- Wei, Q., Wolf-hall, C., and Chang, K. C. (2001). Natto characteristics as affected by steaming time, *Bacillus* strain, and fermentation time. *Journal of Food Science*, 66, 167-173.
- Wei, Q.-K., Chen, T.-R., and Chen, J.-T. (2008). Use of *Bacillus subtilis* to enrich isoflavone aglycones in fermented natto. *Journal of the Science of Food and Agriculture*, 88, 1007-1011.
- Yamabe, S., Kobayashi-Hattori, K., Kaneko K., Endo H., and Takita T. (2007). Effect of soybean varieties on the content and composition of isoflavone in rice-koji miso. *Food Chemistry*, 100, 369-374.
- Yamaguchi, N., Toda, T., Teramoto, T., Okuhira, T., Sugawara, E., and Ito, T. (1993), Effect of sugars on microbiological pyrazine formation by *Bacillus natto* in synthetic liquid medium. *Nippon Shokuhin Kogyo Gakkaishi*, 40, 841-848.
- Yamamoto. T., Harabuchi, Y., Mukai, M., Kedo, S., Naruse, A., and Hayashi, U. (1978). Study of utilization of natto bacilli: effect of number of inoculation in media on production of sticky material. *Natto Kagaku Kenkyu Kaishi*, 2, 41-52.
- Yanfang, Z., and Wenyi, T. (2009). Flavor and taste compounds analysis in Chinese solid fermented soy sauce. *African Journal of Biotechnology*, 8, 673-681.
- Yen, G. C., and Duh, P. D. (1994). Scavenging effect of methanolic extracts of peanut hulls on free-radical and active-oxygen species. *Journal of Agriculture and Food Chemistry*, 42, 629-632.
- Yin, L.-J., Li, L.-T., Li, Z.-G., Saito, M., and Tatsumi, E. (2004). Change in isoflavone contents and composition of sufu (fermented tofu) during manufacturing. *Food Chemistry*, 87, 587-592.

- Yin, L.-J., Li, L.-T., Liu, H., Saito, M., and Tatsumi, E. (2005). Effects of fermentation temperature on the content and composition of isoflavones and β -glucosidase activity in sufu. *Bioscience, Biotechnology, and Biochemistry*, *69*, 267-272.
- Yokota, T., Hattori, T., Ohishi, H., Hasegawa, K., and Watanabe, K. (1996). The effect on antioxidant-containing fraction from fermented soybean food on atherosclerosis development in cholesterol-fed rabbits. *Lebensmittel-Wissenschaft und-Technologie*, *29*, 751-755.
- Yoshida, Y. (1998). Umami taste and traditional seasonings. *Food Reviews and International*, *14*, 213-246.
- Youn, H. K., Choi, H. S., Hur, S. H., and Hong, J. H. (2001). Antimicrobial activities of viscous substance from chongkukjang fermented with different *Bacillus* sp. *Journal of Food Hygiene and Safety*, *16*, 188-93.
- Yun, I.-S. (2005). Antibacterial, free radical scavenging, and proliferative effects of Korean fermented soybean paste (Doenjang) extracts. *Agricultural Chemistry and Biotechnology*, *48*, 138-143.
- Zarkadas, C. G., Voldeng, H. D., Yu, Z. R., Shang, K., and Pattison, P. (1997). Comparison of the protein quality of five new northern adapted Natto soybean cultivars by amino acid analysis. *Journal of Agriculture and Food Chemistry*, *45*, 2013–2019.
- Zheng, G., and Slavik, M. F. (1999). Isolation, partial purification and characterization of a bacteriocin produced by a newly isolated *Bacillus subtilis* strain. *Letters in Applied Microbiology*, *28*, 363-367.
- Zuber, P., Nakano, M. M., and Marahiel, M. A. (1993). Peptide antibiotics. In A. L. Sonenshein, J. A. Hoch, and R. Losick (Eds.), *Bacillus subtilis and Other Gram-Positive Bacteria: Biochemistry, Physiology, and Molecular Genetics* (pp. 897–916). Washington, DC: American Society for Microbiology.