

REFERENCES

1. Banchuen J, Thammarutwasik P, Ooraikul B, Wuttijumnong P and Sirivongpaisal P. Effect of germinating processes on bioactive component of Sangyod Muang Phatthalung Rice. *Thai J Agr Sci* 2009; 42(4):191-9.
2. Srijedsadaruk W. Bio-functional components in germinated brown rice production. Khon Kaen University; 2010. 67p.
3. Sunte J, Srijedsaruk V, Tangwongchai R. Effects of soaking and germinating process on gamma-aminobutyric acid (GABA) content in germinated brown rice (Hom mali 105). *Agricultural Sci J* 2007; 38(6)(Suppl):103-6.
4. Usuki S, Ito Y, Morikawa K, Kise M, Ariga T, Rivner M, Yu RK. Effect of pre-germinated brown rice intake on diabetic neuropathy in streptozotocin-induced diabetic rats. *Nutr Metab (Lond)* 2007; 4(25):1-11.
5. Mamiya T, Asanuma T, Kise M, Ito Y, Mizukuchi A, Aoto H, Ukai M. Effects of pre-germinated brown rice on β -amyloid protein-induced learning and memory deficits in mice. *Biol. Pharm. Bull* 2004; 27(7):1041-5.
6. Shoichi I, Ishikawa Y, editors. Marketing of value-added rice products in japan: germinated brown rice and rice bread. *FAO rice conference*; 2004 Feb 12-13; Rome, Italy.
7. Jongdee S, Sudthasarn G, Kenluam R. Instant porridge from germinated brown rice. *Proceedings of rice and temperate cereal crops annual conference* 2008 volume 2/2; 2008 Apr 8-10; Bangkok, Thailand.
8. Gibson RS and Ferguson EL. Micronutrient interactions. Impact on child health and nutrition Washington, DC: International Life Sciences Institute. 1996.
9. Watcharaparpaiboon W, Laohakunjit N and Kerdchoechuen O. An improved process for high quality and nutrition of brown rice production. *Food Sci Technol Int* 2010; 16(2):147-58.
10. Copeland LO, McDonald MB. Principles of seed science and technology. New York: Chapman and Hall; 1995. p.409.

11. Saman P, Vazquez JA and Pandiella SS. Controlled germination to enhance the functional properties of rice. *Process Biochem* 2008; 43(12):1377-82.
12. Fernandez-Orozco R, Frias J, Zielinski H, Piskula MK, Kozłowska H and Vidal-Valverde C. Kinetic study of the antioxidant compounds and antioxidant capacity during germination of *Vigna radiata* cv. emmerald, *Glycine max* cv. jutro and *Glycine max* cv. merit. *Food Chem* 2008; 111(3):622-630.
13. Frias J, Miranda ML, Doblado R and Vidal-Valverde C. Effect of germination and fermentation on the antioxidant vitamin content and antioxidant capacity of *Lupinus albus* L. var. Multolupa. *Food Chem* 2005; 92(2):211-220.
14. Kayahara H, Tsukahara K. Flavor, health and nutritional quality of pre-germinated brown rice. 2000 International Chemical Congress of Pacific Basin Societies; 2000 Dec; Hawaii.
15. Watchraparpaiboon W. Development of high nutritional product of germinated brown rice (Dissertation). King mongkut's university of technology thonburi; 2007. 107p.
16. Jiamjariyatam R. The Effect of Pre-Germinated Brown Rice Flour on Cookie with Pineapple Filling Quality (Dissertation). Kasetsart university; 2008. 174p.
17. Charoenthaikij P, Jangchud K, Jangchud A, Piyachomkwan K, Tungtrakul P, Prinyawiwatkul W. Germination conditions affect physicochemical properties of germinated brown rice flour. *J Food Sci* 2009; 74(9):658-65.
18. Wongbasg C, Jangchud K, Jangchud A, Tungtrakul P, Tadakittisarn S. Germination condition affecting the physical and chemical properties of germinated glutinous brown rice flour. *Proceedings of 47th Kasetsart University Annual Conference: Agro-Industry, Bangkok (Thailand); 2009 Mar 17-20; Bangkok, Thailand.*
19. Jiamyangyuen S, Ooraikul B. The physico-chemical, eating and sensorial properties of germinated brown rice. *J Food Agr Environ* 2008; 6(2):119-24.
20. Usuki S, Ito Y, Morikawa K, Kise M, Ariga T, Rivner M, Yu RK. Effect of pre-germinated brown rice intake on diabetic neuropathy in streptozotocin-induced diabetic rats. *Nutr Metab (Lond)* 2007; 4(25):1-11.

21. Powell EL. Production and use of pregelatinized starches. In: Whistler RL, Paschall EF, editors. *Starch: Chemistry and technology*. New York: Academy press; 1967. p. 523-35.
22. Vallous NA, Gavrielidou MA, Karapantsios TD and Kostoglou M. Performance of a double drum dryer for producing pregelatinized maize starches. *J Food Eng* 2002; 51:171-183.
23. Mitrevej A, Faroongsarng D and Sinchaipanid N. Compression behavior of spray dried rice starch. *Int J Pharm* 1996; 140:61-68.
24. Wadchararat C, Thongngam M, Naivikul O. Characterization of pregelatinized and heat moisture treated rice flours. *Kasetsart J Nat Sci* 2006; 40(Suppl):144-53.
25. Musiliu OA and Oludele AI. Material properties and compaction characteristics of natural and pregelatinized forms of four starches. *Carbohydrates Polymer* 2010.
26. Mason WR. Starch use in foods. In: BeMiller JN, Whistler RL, editor. *Starch: Chemistry and Technology*, 3rd ed. New York: Academic Press; 2009. p. 746-95.
27. Lii CY, Tsai ML and Tseng KH. Effect of amylose content on the rheological property of rice starch. *Cereal chem.* 1996; 73:415-420.
28. Lai HM, Cheng HH. Properties of pregelatinized rice flour made by hot air or gum puffing. *Int J Food Sci Tech* 2004; 39: 201–12.
29. Lu ZH, Sasaki T, Li YY, Yoshihashi T, Li L, Kohyama K. Effect of amylose content and rice type on dynamic viscoelasticity of a composite rice starch gel. *Food Hydrocolloid* 2009; 23: 1712-9.
30. Srirot K, Piyajomkwan K. *Flour technology*, 4th ed. Bangkok, KU Press; 2007.
31. Kiileit U. Vitamin retention in extrusion cooking. *Food Chem* 1994; 49:149-55.
32. Childs NW. Production and utilization of rice. In: Champagne ET editor. *Rice chemistry and technology*. Minnesota: American association of cereal chemists; 2004. p. 1-24.
33. Park I. A study of molecular structure and functional properties of rice starches (Dissertation). University of California Davis; 2005.

34. Juliano BO. The chemical basis of rice grain quality. In: Chemical aspects of rice quality. Los Banos, Philippines: IRRI; 1979.
35. Shabbir MA. Biochemical and technological characterization of Pakistani rice and protein isolates (Dissertation). University of agriculture, Faisalabad-Pakistan; 2009. 189p.
36. Ninchan B. Physico-chemical properties of rice flour and starch of different Thai varieties (Dissertation). Kasetsart university; 2005. 152p.
37. Toonsakul K. Development of nutritious muffin product for breakfast from brown rice flour (Dissertation). Kasetsart university; 2006. 231p.
38. Pothisook P. Process development of dehydrated brown rice noodle (Dissertation). Kasetsart university; 2005. 154p.
39. Nugij N. Development of reduced calories and reduced sugar butter cake from brown rice flour jasmine 105 variety (Dissertation). Kasetsart university; 2006. 187p.
40. Songthip P. Development of snack bar from brown rice and herb (Dissertation). Kasetsart university; 2008. 112p.
41. Hirunpong P, Tungjaroenchai W. Effect of germination on contents of bioactive components in germinated brown rice of three rice cultivars. 34th Congress on Science and Technology of Thailand; 2008 Oct 31-Nov 2; Bangkok, Thailand.
42. Bewley JD. Seed Germination and Dormancy. *Plant Cell* 1997; 9: 1055-1.
43. Bewley JD, Black M. Seeds: Physiology of development and germination. New York: Plenum Press; 1994.
44. Botha FC, Potgieter GP, Botha AM. Respiratory metabolism and gene expression during seed germination. *J. Plant Growth Regul* 1992; 11:211-24.
45. Nicolás G, Aldasoro JJ. Activity of the pentose phosphate pathway and changes in nicotinamide nucleotide content during germination of seeds of *Cicer arietinum*. L. *J. Exp Bot* 1979; 30:1163-70.
46. Salon C, Raymond P, Pradet A. Quantification of carbon fluxes through the tricarboxylic acid cycle in early germinating lettuce embryos. *J Biol Chem* 1988 ; 263:12278-87.

47. Morohashi Y, Shimokoriyama M. Physiological studies on germination of *Phaseolus mungo* seeds. II. Glucose and organic-acid metabolisms in the early phases of germination. *J. Exp Bot* 1972; 23:54-61.
48. Ehrenshaft M, Brambl R. Respiration and mitochondrial biogenesis in germinating embryos of maize. *Plant Physiol* 1990; 93:295-304.
49. Attucci S, Carde JP, Raymond P, Saint Gès V, Spiteri A, Pradet A. Oxidative phosphorylation by mitochondria extracted from dry sunflower seeds. *Plant Physiol* 1991; 95:390-8.
50. Morohashi, Y., and Bewley, J.D. Development of mitochondrial activities in pea cotyledons during and following germination of the axis. *Plant Physiol* 1980; 66:70-3.
51. Morohashi Y. Patterns of mitochondrial development in reserve tissue of germinated seeds: A survey. *Physiol Plant* 1986; 66: 653-8.
52. Bown AW, Shelp BJ. The metabolism and functions of γ -aminobutyric acid. *Plant Physiol* 1997; 115: 1-5.
53. Khampang E. Development of high quality of rice germs and cereals for food and cosmetic products (Dissertation). King mongkut's university of technology thonburi; 2009. 188p.
54. Khumkah O, Kerdchoechuen O, Laohakunjit N. Change of Vitamin B1, GABA and Phenolics of Germinated Brown Rice and Four Kinds of Cereal. *Agricultural Sci J* 2009; 40(3)(Suppl.):73-6.
55. Horino T, Mori T, Saikusa T. Accumulation of γ -aminobutyric acid (GABA) in the rice germ during water soaking. *Biosci Biotechnol Biochem* 1994; 58:2291-2
56. Taiz L, Zeiger E. Responses of plants to environmental stresses. *Plant Physiol* 2002; 90:178-82.
57. Jiamjariyatam R. The Effect of Pre-Germinated Brown Rice Flour on Cookie with Pineapple Filling Quality (Dissertation). Kasetsart university; 2008. 174p.
58. Lerswanichwatana S. Product Development Beverage from Germinated Rice (Dissertation). Kasetsart university; 2003. 109p.

59. Kiing SC, Yiu PH, Rajan A, Wong SC. Effect of germination on γ -oryzanol content of selected sarawak rice cultivars. *Am J App Sci* 2009; 6(9):1658-61.
60. Shahidi F, Ho CT. Phenolic compounds in foods and natural health products. Washington, DC: American Chemical Society; 2005.
61. Liu RH. Whole grain phytochemicals and health. *J Cereal Sci* 2007; 46: 207–219.
62. Adom KK, Liu RH. Antioxidant activity of grains. *J Agr Food Chem* 2002; 50:6182-7.
63. Orozco RF, Frias J, Zielinski H, Piskula MK, Kozłowska H, Valverde CV. Kinetic study of the antioxidant compounds and antioxidant capacity during germination of *Vigna radiata* cv. emerald, *Glycine max* cv. Jutro and *Glycine max* cv. Merit. *Food Chem* 2008; 111:622-30.
64. Nordkvist E, Salomonsson A, Åman P. Distribution of insoluble bound phenolic acids in barley grain. *J Sci Food Agric* 1984; 35:657-61.
65. Cevallos-Casals BA, Cisneros-Zevallos L. Impact of germination on phenolic content and antioxidant activity of 13 edible seed species. *Food Chem* 2010; 119:1485-90.
66. Suwannanon U, Jiamyangyeun S. Effect of temperature, soaking and germinating on radical scavenging activity of germinated brown rice. *J Agr Sci* 2008; 39:429-32.
67. Sawaddiwong R, Jongjareonrak A, Benjakul S. Phenolic content and antioxidant activity of germinated brown rice as affected by germination temperature and extraction solvent. *KMITL Sci J* 2008; 8(2):1-6.
68. Wong DWS, Robertson GH. α -Amylase. In: Whitaker JR, Voragen AGT, Wong DWS editors. *Handbook of Food Enzymology*. New York: Marcel Dekker; 2003. p. 707-18.
69. Ikujelola VC, Fashakin B. The physico-chemical properties of a complementary diet prepared from vegetable proteins. *J Food Agric Env*. 2005; 3:23-6.
70. Watanabe M, Maeda T, Tsukahara K, Kayahara H, Morita N. Application of pregerminated brown rice for breadmaking. *Cereal Chem* 2004; 81(4):450-55.

71. Anawachkul M, Jiamyangyuen S. The study of GABA content and development of GABA enriched yogurt from germinated red rice (Munpoo rice). Proceedings of 47th Kasetsart University Annual Conference: Agro-Industry, Bangkok (Thailand); 2009 Mar 17-20; Bangkok, Thailand.
72. Sutinium D. Development of Instant Nutritious Beverage from Germinated Jasmine Brown Rice for Aged Consumer (Dissertation). Kasetsart university; 2007. 179p.
73. Siller ADCP. In vitro starch digestibility and estimated glycemic index of sorghum products. Texas A&M University; 2006. 100p.
74. Harper JM. Extrusion of foods. Florida: CRC Press; 1981.
75. Srirot K. Flour technology. Bangkok, Text and Journal Publication; 1999.
76. Techawipharat J. Effect of hydrocolloids on physical and rheological properties of rice starch (Dissertation). Mahidol University; 2007. 135p.
77. Suksomboon A. Effect of dry-and wet-milling processes on rice flour, rice starch and rice noodle properties. Kasetsart university; 2007. 162p.
78. Manaois RV. Modification of rice starch properties by addition of amino acids at various pH levels (Dissertation). Central Luzon State University; 2009. 134p.
79. Biliaderis CG. The structure and interactions of starch with food constituents. Can J Physiol Pharmacol 1991; 69:66-78.
80. Eerlingen RC, Delcour JA. Formation, analysis, structure and properties of Type III enzyme resistant starch. J Cereal Sci 1995; 22:129-38.
81. BeMiller JN. Carbohydrate chemistry for food scientists. Minnesota: AACC International; 2007. 389p.
82. Sahin S, Sumnu SG. Physical properties of foods. New York: Springer; 2006.
83. Rengsutthi K, Charoenrein S. Thermal properties and morphology of flour and starch. 34th Congress on Science and Technology of Thailand. Bangkok; 2008 Oct 31-Nov 2; Bangkok, Thailand.
84. Biliaderis CG, Page CM, Maurice TJ, Juliano BO. Thermal characterization of rice starches: A polymeric approach to phase transitions of granular starch. J Agri Food Chem 1986; 34:6-14.

85. Slade L, Levine H, Wang M, Ievolella J. DSC analysis of starch thermal properties related to functionality in low-moisture baked goods. *J Therm Anal* 1996; 47: 1299-314.
86. Tester RF, Morrison WR. Starch: the polysaccharide fraction. In Frazies PJ, Donald AM, Richmond P editors. *Starch Structure and Functionality*. U.K.: The Royal Society of Chemistry; 1990. p. 147-63.
87. Adebawale KO, Lawal OS. Microstructure, physicochemical properties and retrogradation behavior of Mucuna bean (*Mucuna pruriens*) starch on heat moisture treatments. *Food Hydrocolloids* 2003; 17:265-72.
88. Batey IL. Interpretation of RVA Curves. In: Crosbie GB, Ross AS editors. *The RVA handbook*. Minnesota: American Association of Cereal Chemists; 2007. p. 1-15.
89. Newport Scientific. Applications manual for the Rapid Visco™ Analyzer. Warriewood: Newport Scientific Pty; 1998.
90. Bushuk W. editor. *Rheology: Theory and application to wheat flour dough*. Minnesota: American Association of Cereal Chemists, Inc.; 1985.
91. Hamann DD, Macdonald GA. *Rheology and texture properties of surimi based food*. New York: Marcel Dekker; 1992.
92. Weipert D. The Benefits of Basic Rheometry in Studying Dough Rheology *Cereal Chem* 1990; 67(4):311-7.
93. Chung WK, Meullenet JF. Effect of protein and starch fractions on thermal and pasting properties of rice flour. In: Norman RJ, Meullenet JF, editors. *B.R. Wells Rice Research Studies 2001*. Fayetteville: Arkansas Agricultural Experiment Station; 2001. p. 239-47.
94. Varavinit S, Shobsngob S, Varayanond W, Chinachoti P, Naivikul O. Effect of amylose content on gelatinization, retrogradation and pasting properties of flours from different cultivars of Thai rice. *Starch/Stärke* 2003; 55: 410–5.
95. Singh V, Okadome H, Toyoshima H, Isobe S, Ohtsubo K. Thermal and physicochemical properties of rice grain, flour and starch. *J Agric Food Chem* 2000; 48:2639-47.

96. Rungruangaree P. Effect of pregelatinized rice flour and protein supplementation on quality of bread from rice flour (Dissertation). Kasetsart university; 1998. 144p.
97. Chua KJ, Chou SK. Low-cost drying methods for developing countries. *Trends in Food Sci Technol* 2003; 14: 519–28.
98. Karbassi A, Mehdizadeh Z. Drying rough rice in a fluidized bed dryer. *J Agric Sci Technol* 2008; 10:233-41.
99. Timabud T, Theprungsri C, Chalermchat Y. Physical properties and 2-Acetyl-1-Pyrroline content of aroma coated rice dried by fluidization. *Agricultural Sci J* 2010; 41:1(Suppl.):504-7.
100. Shinn B. Evaluation of drum drying. In: Radley JA, editor. *Starch production technology*. London: Applied science; 1976. p. 229-37.
101. Phaonechoke W. Production of oxidized-pregelatinized tapioca starch for use as binding agent in batters (Dissertation). Chulalongkorn university; 2004. 152p.
102. Pradistduang S. Modification of flour. *Kasetsart J Nat Sci* 1991; 25(5):318-25.
103. Chainui J, Sasakun T. Modification of high amylose rice flours by pregelatinization acid hydrolysis. Mahidol university; 2002.
104. Na Nakorn K. Effect of amylose content and processing conditions on functional properties of pregelatinized rice starches. Prince of Songkla university; 2009; 104p.
105. Kerr RW. *Chemistry and industry of starch*. 2nd ed. New York: Academy press; 1950.
106. Sevatson E, Huber GR. Extruders in the food industry. In: MN. Riaz MN, editor. *Extruders in food applications*. Pennsylvania: Technomic Publishing Co., Inc.; 2000.
107. Cheewapramong P. Use of near-infrared spectroscopy for qualitative and quantitative analyses of grains and cereal products (Dissertation). University of Nebraska – Lincoln; 2007. 152p.
108. Bryant RJ, Kadan RS, Champagne ET, Vinyard BT, Boykin D. Functional and digestive characteristics of extruded rice flour. *Cereal Chem* 2001; 78(2):131-7.

109. Kadan RS, Bryant RJ, Pepperman AB. Functional properties of extruded rice flours. *J Food Sci* 2003; 68(5): 1669-72.
110. Chuang GC, Yeh AI. Effects of product temperature and moisture content on viscoelastic properties of glutinous rice extrudates. *Cereal Chem* 2002; 79(1):36-40.
111. Jimoh KO, Olurin TO, Aina JO. Effect of drying methods on the rheological characteristics and colour of yam flours. *Afr J Biotechnol* 2009; 8(10): 2325-8.
112. Falade KO, Onyeoziri NF. Effects of cultivar and drying method on color, pasting and sensory attributes of instant yam (*Dioscorea rotundata*) flours. *Food Bioprocess Technol* 2009.
113. Collado LS, Corke H. Heat-moisture treatment effects on sweet potato starches differing in amylose content. *Food Chem* 1999; 65:339-46.
114. Whistler RL, Paschal EF. *Starch: Chemistry and technology*. Vol 2. New York: Academy press; 1967.
115. Doublier JL, Melcion JP, de Melcion F, Mercier C. Extrusion cooking and drum drying of wheat starch: I Physical and macromolecular modification. *Cereal Chem* 1986; 61(6): 543-83.
116. Laullen TE, editor. Properties and food uses of unmodified starch discussion and demonstration. AACC short course on starch: Structure, properties and food uses; 1996 Aug 27-29; Bangkok, Thailand.
117. Hosney RC. Interaction of starch and water. AACC short course on starch: Structure, properties and food uses; 1996 Aug 27-29; Bangkok, Thailand.
118. Lai HM, Cheng HH. Properties of pregelatinized rice flour made by hot air or gum puffing. *Int J Food Sci Tech* 2004; 39: 201–12.
119. Youngsook L. Characteristics of Pregelatinized Flour from Glutinous Rice and Theirs Utilization. In; Bureau of rice research and development, editor. Research report on rice processing and development year 1997-2007. Bangkok: Ministry of Agriculture and Cooperatives; 2008. p. 249-68.
120. Hagenimana A, Ding X, Fang T. Evaluation of rice flour modified by extrusion cooking. *J Cereal Sci* 2005; 43(2006):38–46.

121. Guha M, Ali SZ, Bhattacharyah S. Twin-screw extrusion of rice flour without a die: effect of barrel temperature and screw speed on extrusion and extrudate characteristics. *J Food En* 1997; 32: 251-67.
122. Ding QB, Ainsworth P, Tucker G, Marson H. The effect of extrusion conditions on the physicochemical properties and sensory characteristics of rice-based expanded snacks. *J Food Eng* 2005; 66: 283–9.
123. Gramham HD. Food colloids. Westport, Connecticut: AVI Publishing Company; 1977.
124. Quintero-Fuentes X, McDonough CM, Rooney LW, Almeida-Dominguez H. Functionality of rice and sorghum flours in baked tortilla and corn chips. *Cereal Chem* 1999; 76(5):705-10.
125. Krogdahl A, Holm H. Proteinase inhibitorer i soyabonner. *Naringsforsk* 1979; 1:2-11.
126. Hurrell RF, Carpenter KJ. Maillard reactions in foods. In: Hoyem T, Kvale O editors. Physical, chemical and biological changes in food caused by thermal processing. London: Applied Science Publishers Ltd; 1977. p. 168-84.
127. Eichner K. The influence of water content on non-enzymic browning reaction in dehydrated foods and model systems and the inhibition of fat oxidation by browning intermediates. In: Duckworth RB editor. Proc. of an International Symposium on Water Relations of Foods, Glasgow, 1974. London: Academic Press; 1975 p. 417-34.
128. Adrian J. Nutritional and physiological consequences of the Maillard reaction. *World Rev Nutr Diets* 1974; 19: 71-122.
129. Mercier C. Structure and digestibility alterations of cereal starches by twin screw extrusion cooking. In: Linko P, Malkki Y, Olkku J, Larinkari J editors. Food process engineering, vol. 1: Food processing systems. London: Applied Science Publishers Ltd; 1980 p. 795-807.
130. Archer MC, Tannenbaum SR. Vitamins. In: Tannenbaum SR editor. Nutritional and safety aspects of food processing. New York: Marcel Dekker, and Basel; 1979 p. 47-95.

131. Fadahunsi IF. The effect of soaking, boiling and fermentation with *Rhizopus oligosporus* on the water soluble vitamin content of bambara groundnut. *Pakistan J Nutr* 2009; 8 (6): 835-40.
132. Khalil AH, Mansour EH. The effect of cooking, autoclaving and germination on the nutritional quality of faba beans. *Food Chem* 1995; 54:177-82.
133. Davidson S, Passmore R, Brock JF, Truswell AS. Losses of food and nutrients in food processing. In: *Human Nutrition and Dietetics*. Edinburgh: Churchill Livingstone; 1979 p.210-3.
134. De Muelenaere HJH, Buzzard JL. Cooker extruder in service of world feeding. *Food Technol* 1969; 23:345-51.
135. Khatoon N, Prakash J. Nutrient retention in microwave cooked germinated legumes. *Food Chemistry* 2006; 97:115-21.
136. Seena S, Sridhar KR, Arun AB, Young C. Effect of roasting and pressure-cooking on nutritional and protein quality of seeds of mangrove legume *Canavalia cathartica* from southwest coast of India. *J Food Comp Anal* 2006; 19:284-93.
137. Kaushik G, Satya S, Naik SN. Effect of domestic processing techniques on the nutritional quality of the soybean. *Mediterr J Nutr Metab* 2010; 3:39-46.
138. Chinnasarn, S. and Manyasi, R., 2010, Chemical and physical properties of taro flour and the application of restructured taro strip product. *World Appl Sci J* 9(6):600-604.
139. Mbaeyi IE, Onweluzo JC. Effect of sprouting and pregelatinization on the nutritional quality of sorghum (*Sorghum bicolor* L.). *Proceedings of the 26th Annual NIFST Conference, 4th-8th October 2003, Owerri*.
140. Jisha S, Padmaja G, Moorthy SN, Rajeshkumar K. Pre-treatment effect on the nutritional and functional properties of selected cassava-based composite flours. *Innov Food Sci Emerg Technol* 2008; 9:587-92.
141. Ahmed M, Akter S, Eun JB. Peeling, drying temperatures, and sulphite-treatment affect physicochemical properties and nutritional quality of sweet potato flour. *Food Chem* 2010; 121(1):112-8.

142. Otegbayo BO, Osamuel F, Fashakin JB. Effect of parboiling on physico-chemical qualities of two local rice varieties in Nigeria. *J Food Technol Afr* 2001 6(4):130-2.
143. Muyonga JH, Ramteke RS, Eipeson WE. Predehydration steaming changes physicochemical properties of unripe banana flour. *J Food Process Pres* 2001; 25(1):35-47.
144. AOAC. Official Methods of Analysis. Association of Official Analytical Chemists, Vancouver: Arlington; 1994.
145. Komatsuzaki, N., Tsukahara, K., Toyoshima, H., Suzuki, T., Shimizu, N., and Kimura, T. Effect of soaking and gaseous treatment on GABA content in germinated brown rice, *J Food Eng* 2007; 78:556-60.
146. Liu S, Zhang Z, Luo QLH, Zheng W. Spectrophotometric determination of vitamin B1 in a pharmaceutical formulation using triphenylmethane acid dyes. *J Pharm Biom Anal* 2002; 30:685-94.
147. Rattanachitthawat S., Suwannalert P., Riengrojpitak S., Chaiyasut C. and Pantuwatana S., Phenolic content and antioxidant activities in red unpolished Thai rice prevents oxidative stress in rats, *J. Med. Plant Res.*, 2010; 4:796-801.
148. Ferreira E., Rita A.N., Souza B. and Batista A.R., Effect of drying method and length of storage on tannin and total phenol concentrations in Pigeon pea seeds, *Food Chem.*, 2004; 86:17-23.
149. AACC. Approved Methods of the American Association of Cereal Chemists. No.61. 9th ed. Minnesota, American Association of Cereal Chemists; 1995.
150. Kim YS, Wiesenborn DP, Orr PH, Gront LA. Differential scanning calorimetry. *J Food Sci* 1995; 6(5):1060-5.
151. Hagenimana A, Ding PPX. Study on thermal and rheological properties of native rice starches and their corresponding mixtures. *Food Res Int* 2005; 38:257-66.
152. Schoch TJ. In: Whistler RL, editor. *Methods in Carbohydrate Chemistry*, Vol. IV. New York: Academic Press; 1964. p. 106-8.
153. Unnikrishnan KR, Bhattacharya KR. Swelling and solubility behaviour of parboiled rice flour. *J Food Technol* 1981; 16:403-8.

154. Sodhi NS, Singh N. Morphological, thermal and rheological properties of starches separated from rice cultivars grown in India. *Food Chem* 2003; 80:99-108.
155. Kennedy G, Burlingame B. Analysis of food composition data on rice from a plant genetic resources perspective. *Food Chem* 2003; 80:589-96.
156. Wu W, Cheng FM, Liu ZH, Wei KS. Difference of phytic acid content and its relation to four protein composition contents in grains of twenty-nine japonica rice varieties from Jiangsu and Zhejiang provinces, China. *Rice Sci* 2007; 14(4):311-4.
157. Wilson TA, Ausman LM, Lawton CW, Hegsted DM, Nicolosi RJ. Comparative cholesterol lowering properties of vegetable oils: beyond fatty acids. *J Am Coll Nutr* 2000; 19:601-7.
158. Anderson RA. Wild rice: nutritional review. *Cereal Chem* 1976; 53(6):949-55.
159. Heinemann RJB, Fagundes PL, Pinto EA, Penteado MVC, Lanfer-Marquez UM. Comparative study of nutrient composition of commercial brown, parboiled and milled rice from Brazil. *J Food Comp Ana* 2005; 18(4):287-96.
160. Cristina M, Rosefl M. Rice. In: Cristina M, Rosefl M editors. *Gluten-Free Cereal Products and Beverages*. Newyork: Elsevier Inc; 2008: p. 81-100.
161. Srijedsadaruk W. Bio-functional components in germinated brown rice production (Dissertation). Khon Kaen University; 2008. 67p.
162. Moongngarm A, Saetung N. Comparison of chemical compositions and bioactive compounds of germinated rough rice and brown rice. *Food Chem* 2010.
163. Capanzana MV, Buckle KA. Optimisation of germination conditions by response surface methodology of a high amylose rice (*Oryza sativa*) cultivar. *Lebensm-Wiss u-Technol* 1997; 30:155-63.
164. Akpapunam MA, Achinewhu SC. Effects of cooking, germination and fermentation on the chemical composition of Nigerian Cowpea (*Vigna unguiculata*). *Qual Plant Plant Foods Hum Nutr* 1985; 35:353-58.
165. Begley PT. The Biosynthesis and Degradation of Thiamin (vitaminB1). *Nat Prod Rep* 1996;177-85.

166. Eitenmiller RR, Landen Jr WO, Ye L. Vitamin Analysis for the Health and Food Sciences. New York: Taylor & Francis Group, LLC; 2008.
167. Kim SD, Kim SH, Hong EH. Composition of soybean sprout and its nutritional value. Korean Soybean Digest 1993; 10:1-9.
168. Park DY, Cho SJ, Shin YC. Change of protein pattern of mungbean seeds, *phaseolusaureus* during germination. Korean J Food Sci Technol 1986; 18:162-8.
169. Ribeiro MLL, Mandarino JMG, Carrao-Panizzi MC, Oliveira MCN, Campo CBH, Nepomuceno AL. Isoflavone content and b-glucosidase activity in soybean cultivars of different maturity groups. J Food Comp Ana 2006; 20:19-24.
170. Duenas M, Hernandez T, Estrella I, Fernandez D. Germination as a process to increase the polyphenol content and antioxidant activity of lupin seeds (*Lupinus angustifolius* L.). Food Chem 2009; 117:599-607.
171. Fras J, Miranda-Zarate ML, Vidal-Valverde C. Effect of germination and fermentation in the antioxidant vitamin content and antioxidant capacity of *Lupinus albus* L., var. Multolupa. Food Chem 2005; 92(21): 1-220.
172. Harmuth-Hoene AE, Seiler K.). Einfluß verschiedener xtrusionsbedingungen auf die Proteinqualit/it bei Weizenvollkorn-Extrudaten. Getreide Mehl Brot 1984; 8: 245-9.
173. Hayakawa K, Kimura M, Kasaha K, Matsumoto K, Sansawa H, Yamori Y. Effects of a gamma-aminobutyric acid-enriched dairy product on the blood pressure of spontaneously hypertensive and normotensive Wistar-Kyoto rates. Brit J Nutr 2004; 92(3):411-417.
174. Ohtsubo K, Suzuki K, Yasui Y, Kasumi T. Bio-functional components in the processed pre-germinated brown rice by a twin-screw extruder. J Food Comp Anal 2005; 8:303-306.
175. Asadullah, K, Omer MT, Syed AA, Khalid J, Askari B. Study to evaluate the impact of heat treatment on water soluble vitamins in milk. J Pak Med Assoc 2010; 60(11):909-12.
176. Ochoa-Martinez LA, Brennan JG, Niranjana K. Spouted bed dryer for liquid foods. Food Control 1993; 4(1):41-5.

177. Sandhya Rani M.P. and Bhattacharya, K.R. Rheology of rice flour pastes: effect of variety, concentration, and temperature and time of cooking. *J Texture Stud* 1989; 20:127-37.
178. Morris VJ. Starch gelation and retrogradation. *Trends Food Sci* 1990; 1:2-6.
179. Czuchajowska Z, Otto T, Paszezynska B, Byung-Kee B. Composition, thermal behavior and gel texture of prime and tailing starches from garbanzo beans and peas. *Cereal chem* 1998; 75:466-72.
180. Fredriksson H, Silverio J, Anderson R, Eliasson AC, Aman P. The influence of amylose and amylopectin characteristics of gelatinization and retrogradation properties of different starches. *Carbohydr Polym* 1998; 35:119-34.
181. Yuryev VP, Kalistratova EN, Van Soest JGJ, Niemann C. Thermodynamic properties of barley starch with different amylose content. *Starch/Stärke* 1998; 50:463-66.
182. Varavinit S, Shobsngob S, Varayanond W, Chinachoti P, Naivikul O. Effect of amylose content on gelatinization, retrogradation and pasting properties of flours from different cultivars of Thai rice. *Starch/Stärke* 2003; 55:410-5.
183. Sandhu KS, Singh N, Malhi NS. Some properties of corn grains and their flours I: Physicochemical, functional and chapati-making properties of flours. *Food Chem* 2007; 101:938-46.
184. Lai H.M. Effects of hydrothermal treatment on the physicochemical properties of pregelatinized rice flour. *Food Chem* 2001; 72:455-63.
185. Guraya H, Lima I, Champagne E. Method of creating starch-like ultra-fine rice flour and effect of spray drying on formation of free fatty acid. *Starch* 2010; 62:173-80.
186. Blanche S, Sun X. Physical characterization of starch extrudates as a function of melting transitions and extrusion conditions. *Adv Polym Technol* 2004; 23:277-90.
187. Akdogan H. Pressure, torque, and energy responses of a twin screw extruder at high moisture contents. *Food Res Int* 1996; 29: 423-29.
188. Chang YH, Ng PKW. Effects of extrusion process variables on quality properties of wheat-ginseng extrudates. *Int J Food Prop* 2011; 14:914-25.

189. Menegassi B, Pilosof AMR, Areas JAG. Comparison of properties of native and extruded amaranth (*Amaranthus cruentus* L. - BRS Alegria) flour. *Food Sci Technol* 2011; 44:1915-21.
190. Karim AA, Norziah MH, Seow CC. Methods for the study of starch retrogradation. *Food Chem* 2000; 71:9-36.
191. Bello-Perez LA, Ottenhof MA, Agama-Acevedo E, Farhat IA. Effect of storage time on the retrogradation of banana starch extrudate. *J Agric Food Chem* 2005; 53:1081-6.
192. Malumba P, Massaux C, Deroanne C, Masimango T, Bera F. Influence of drying temperature on functional properties of wet-milled starch granules. *Carbohydr Polym* 2009; 75:299-306.
193. Malumba P, Janas S, Roiseux O, Sinnaeve G, Masimango T, Sindic M, Deroanne C, Bera F. Comparative study of the effect of drying temperatures and heat-moisture treatment on the physicochemical and functional properties of corn starch. *Carbohydr Polym* 2010; 79:633-41.
194. Vandeputte GE, Vermeylen R, Geeroms J, Delcour JA. Rice starches. III. Structural aspects provide insight in amylopectin retrogradation properties and gel texture. *J Cereal Sci* 2003; 38:61-8.
195. Yu S, Ma Y, Sun DW. Impact of amylose content on starch retrogradation and texture of cooked milled rice during storage. *J Cereal Sci* 2009; 52:1-30.
196. Chung HJ, Liu Q, Pauls KP, Fan MZ, Yada R. In vitro starch digestibility, expected glycemic index and some physicochemical properties of starch and flour from common bean (*Phaseolus vulgaris* L.) varieties grown in Canada. *Food Res Int* 2008; 41:869-75.
197. Banchathanakij R, Supphantharika M. Effect of different β -glucans on the gelatinisation and retrogradation of rice starch. *Food Chem* 2009; 114:5-14.
198. Suksomboon A. Effect of dry- and wet-milling processes on rice flour and rice noodle properties (Dissertation). Kasetsart university; 2007. 162p.
199. Vasanthan T, Bhatti RS. Physicochemical properties of small- and large-granule starches of waxy, regular and high-amylose barleys. *Cereal Chem* 1996; 73:199-207.

200. Eliasson AC. Viscoelastic behaviour during the gelatinization of starches. *J Texture Stud* 1986; 17:253-65.
201. Ring SG. Some studies on starch gelation. *Starke* 1985; 3: 80-3.
202. Tsai ML, Li CF, Lii CY. Effects of granular structure on the pasting behaviour of starches. *Cereal Chem* 1997; 74:750-57.
203. Keetels CJAM, Vliet T. Gelation and retrogradation of concentrated starch gels. In Lineback DR, Phillips GO, Williams PA, Wedlock DJ, editors. *Gums and stabilizers for the food industry*. New York: IRL; 1994. p.271-80.
204. Li JY, Yeh AI. Relationships between thermal, rheological characteristics and swelling power for various starches. *J Food Eng* 2001; 50: 141-8.
205. Kaur L, Singh J, Singh N. Effect of glycerol monostearate on physicochemical, thermal, rheological and noodle making properties of corn and potato starches. *Food Hydrocolloids* 2005; 19: 839-49.
206. Singh J, Kaur L, Singh N. Effect of acetylation on some properties of corn and potato starches. *Starch* 2004; 56: 586-601.
207. Singh J, McCarthy OJ, Singh H, Moughan PJ, Kaur L. Morphological, thermal and rheological characterization of starch isolated from New Zealand Kamo Kamo fruit - A novel source. *Carbohydr Polym* 2007; 67:233-44.
208. Wang SS, Chiang WC, Zhao BL, Zheng XZ, Kim IH. Experimental analysis and computer simulation of starch–water interaction during phase transition. *J Food Sci* 1991; 56(1):121-4.
209. Wen LF, Rodis P, Wasserman BP. Starch fragmentation and protein insolubilization during twin-screw extrusion of corn meal. *Cereal Chem* 1990; 67(3):268-75.
210. Lii CY, Shao YY, Tseng KH. Gelation mechanism and rheological properties of rice starch. *Cereal Chem* 1995; 72:393-400.
211. Svegmarm K, Hermansson AM. Microstructure and rheological properties of composites of potato starch granules and amylose: A comparison of observed and predicted structure. *Food Structure* 1993; 12:181-93.
212. Badrie N, WA Mellowes. Effect of extrusion variables on cassava extrudates. *J Food Sci* 1991; 56(5):1334-7.

213. Singh S, Gamalath S, Wakeling L. Nutritional aspects of food extrusion: a review. *Int J Food Sci Technol* 2007; 42(8):916-29.
214. Sun J, Hou C, Zhang S. Effect of protein on the rheological properties of rice flour. *J Food Process Preserv* 2008; 32:987-1001.
215. Hoover R, Manuel H. The effect of heat-moisture treatment on the structure and physicochemical properties of normal maize, waxy maize, dull waxy maize and amylomaize V starch. *J Cereal Sci* 1996; 23:153-62.
216. Hsu S, Lu S, Huang C. Viscoelastic changes of rice starch suspensions during gelatinization. *J Food Sci* 2000; 65:215-20.
217. Doublier JL, Choplin L. A rheological description of amylose gelation. *Carbohydr Res* 1989; 193:215-26.
218. Lambert IA, Kokini JL. Effect of L-Cysteine on the rheological properties of heat flour. *Cereal Chem* 2001; 78(3):226-30.
219. Leach HW. Gelatinization of starch. In: *Starch: Chemistry and Technology*. Volume 1. Whistler RL, Paschal EF. editors. New York: Academic Press; 1965. p. 289-307.
220. Yoshii Y, Arisaka M. Properties of high amylose starch paste. *J Appl Glycosci* 1999; 41(1):1-7.
221. Colonna P, Doublier JL, Melcion JP, De Monredon F, Mercier C. Extrusion cooking and drum drying of wheat starch, I. Physical and macromolecular modifications. *Cereal Sci* 1984; 61:538-43.
222. Rolfe JB, Kadan RS, Champagne BT, Boykin D. Functional and digestive characteristics of extruded rice flour. *Cereal Chem* 2001; 78(2):131-37.
223. Ngamnikom P, Songsermpong S. The effects of freeze, dry, and wet grinding processes on rice flour properties and their energy consumption. *J Food Eng* 2011; 104:632-8.
224. Fichtali J, Van de Voort FR. Fundamental and practical aspects of twin screw single extrusion. *Cereal Foods World* 1989; 34:921-9.