Pisak Padthong 2009: Study on the Characteristics and Shelf Life of Goat Milk Yoghurt Fortified with Flour. Master of Science (Food Safety), Major Field: Food Safety, Department of Animal Science. Thesis Advisor: Assistant Professor Sasitorn Nakthong, Ph.D. 103 pages.

The objective of this project was to develop and analyze suitable goat milk yoghurt (GMY) fortified with flours. Six different kinds of flour (corn flour, rice flour, glutinous rice flour, soy flour, cassava flour and oat flour) were used for replacement of skim milk powder (SMP), at 20%, 15%, 15%, 15%, 10% and 5%, respectively. The yogurt mixes were heated to 85^{o}C and held for 5 min, incubated at 42^{o}C until the pH reached 4.4. The mixes were then stored at 4^{o}C for 60 days. Measurements and evaluations of acid development, apparent viscosity, microbiological status, and sensory profiles by an expert panel were conducted at days 1, 7, 21, 42, and 60. The results in part 1 showed all yoghurt formulas were significantly different in pH and Titratable Acidity (T.A.) ($p<0.05$) over period. Total lactic acid bacteria count, appearance flavors score did not showed significantly difference during 21 days ($p > 0.05$). The rice flour formulas had the best result in texture score at d14 ($p<0.05$) and corn flour formulas were significantly differences in apparent viscosity ($p<0.05$). Moreover, all yogurt formulas were detected coliform less than 3 MPN/g while there were not found mold and yeast during storage period. GMY fortified with flour showed a positive results in physical properties i.e. reduced whey separation, firmness, and pseudoplastic properties. It could be concluded that oat flour and tapioca flour showed the best result for improvement texture of GMY.

Part 2; fruit-flavored GMY (orange, blueberry and strawberry flavor) fortified with 6 kinds of flour was compared with control yogurt (sugar 4 %). The yogurt were stored at 4^{o}C for 60 d. Measurements and evaluations of acid development, apparent viscosity, microbiological status, and sensory profiles by an expert panel were conducted at days 1, 7, 21, 42, and 60. The result showed all yoghurt formulas were significantly differences in pH and T.A. over period ($p<0.05$). The pH values were decreased. The T.A. (%) and total lactic acid bacteria were increased during storage time. Moreover, mold and yeast were not found in all formulas during storage period. Sensory evaluation results showed all formulas of fruit-flavored GMY were significantly different from control ($p<0.05$). The mixtures of fruit jam at 20% in GMY fortified with flour were not affected on physical and chemical properties but could be enhanced sensory quality of GMY

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