Thesis Title FORMULATION OF PUMPKIN SEEDS SNACKS AND DIETARY SURVEYS OF CHILDREN WITH PRESUMPTIVE SYMPTOMS OF BLADDER STONE DISEASE

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ABSTRACT

Pumpkin seeds is very riched in phosphorus content and has been used to lower the urinary calcium oxalate crystals. The formulation of pumpkin seeds snacks may be useful for supplementation to children with presumptive symptoms of bladder stone disease. Five snacks and one relish has been formulated. There were Malet Fugthong Kwon, Krayasaad, Medkanoon, Kao Mou Mee, Kao Kreb Malet Fugthong and Nam Prik Ong.

All six pumpkin seeds formulae had been analysed for their nutritive value and tested for acceptability with sensory test by ten selected judge panelists as well as the determination of peroxide value to estimate the shelf life. They were well accepted by the panelist although some tests showed that the flavor influenced the overall acceptability of the test. The level of peroxide value was less than 7.3 milliequivalent per kilogram dry sample during the 6 week storage. The limited amount as recommended by Ministry of Public Health is 10 milliequivalent per kilogram sample.

Only Malet Fugthong Kwon was chosen for supplementation to the children in hyperendemic area of Ubolrajthani province due to the highest phosphorus content. Twenty three school-age children and twelve adolescents were evaluated for nutritional status, dietary intake prior to and after supplementation of fortified pumpkin seeds snacks. Weight for age, height for age, and weight for height based on Thai and WHO growth references were three indices used in the interpretation of their nutritional status.

There were 35 % and 17 % of Protein energy malnutrition in the school-age and adolescent respectively. Dietary intake as determined by chemical analysis found that the caloric distribution of protein, fat and carbohydrate were 10.3, 8.9 and 80.8 % whereas upon supplementation the amount increased to 14.0, 32.6 and 53.5 % respectively. The calcium and phosphorus contents were three and four folds of the control period. Therefore, it is suggested that, the supplementation of pumpkin seeds snack of 60 mg phosphorus/kg/day could improve the major nutrient intakes of the individual and lead to minimize the risk of bladder stone disease.