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PANIDA WONGSIRIRUNGSEE : DEVELOPMENT OF PICKLED VEGETABLE PRODUCTS WITH REDUCED SODIUM CONTENT. THESIS ADVISOR : VISITH CHAVASIT, Ph.D., PRAPAISRI P. SIRICHAKWAL, Ph.D., SOMSRI CHAROENKIATKUL, D.Sc., KIATI JITTIJARUNGLARB, B.Sc. 141 p. ISBN 974-661-517-4

Pickled vegetables are popular food products in many parts of the world. Pickled vegetable usually have high sodium content for preserving and flavoring purposes. They are therefore limited or not allowed during diet therapy for patients with degenerative diseases. Two kinds of pickled vegetables, pickled mustard greens (lactic acid fermentation) in can and pickled ginger (vinegar pickling), were used as the model for development of reduced-sodium pickled vegetables, due to their popularity among Thai consumers and difference in preservation methods. The reduced-sodium products were developed based on the sensory and chemical qualities of selected popular commercial brands of the pickled vegetables. Canned reduced-sodium pickled mustard greens were prepared using the industrial process modified by the addition of a fresh water washing step, and using KCl, MSG Plus™ and galangal in the soaking/packing brine. Nine recipes of canned reduced-sodium pickled mustard greens were developed by varying vegetable washing period (0. 5, and 10 min) and KCl concentration in soaking/packing brine (2.5, 3.5, and 4.5%). Scores of sensory overall acceptability of the canned reduced-sodium products were in the range of "like slightly" to "like moderately" (6 to 7) on a nine-point hedonic scale. Sodium content in the most sensory-acceptable canned reduced-sodium products could be reduced by 50%, whereas potassium content increased by 1625%. For the bottled reduced-sodium pickled ginger, 6 recipes were developed by substituting salt in pickling brine with potassium chloride by 50, 60, 70, 80, 90, and 100%. Scores of sensory overall acceptability of the bottled reduced-sodium pickled ginger were in the range of "like slightly" to "like moderately" (6 to 7) on a nine-point hedonic scale, which were more acceptable than scores of the commercial brands. Sodium content in the bottled reduced-sodium pickled ginger could be reduced by 79%, whereas potassium content increased by 865%. Both of the reduced-sodium pickled vegetables could be stored for at least 3 months without changes in sensory, chemical and microbial qualities. However, the bottled pickled ginger needed to be stored under refrigerated conditions to preserve color. Acceleration tests indicated that both products had shelf life of at least 2 years. Costs of raw material of reduced-sodium products were 5.20 and 9.20 baht per 100 g of drained weight for canned pickled mustard greens and bottled pickled ginger, respectively.