

C627176 : MAJOR FOOD TECHNOLOGY

KEY WORD: REDUCED CHOLESTEROL/ LIQUID EGG / THAI-STYLE OMELET/ FREEZING

PRANEE WATTANAPONG : PRODUCTION AND APPLICATION OF REDUCED CHOLESTEROL LIQUID EGG PRODUCT. THESIS ADVISOR : ROMANEE SANGUANDEEKUL, Ph.D., ASST.PROF. SUWIMON KEERATIPIBUL, Ph.D. 85 pp.

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Restricted cholesterol intake is recommended to decrease the risk of coronary heart disease in many countries including Thailand. Because of high quality protein in egg, reduced cholesterol liquid egg product would be the good source of high quality protein for mass consumptions. The objective of this project were to study functional properties and sensory evaluation of reduced liquid egg product when varying amounts of egg white powder, the effect of freezing method (air blast and cryogenic freezing) and frozen storage time at -18°C on liquid egg product and Thai-style omelet.

Varying amounts of egg white powder and skim milk powder did not effect on foam ability ($P>0.05$), but increasing of the former from 0 to 3% resulted in the improvement in gel strength and viscosity ($P\leq 0.05$). As for the sensory evaluation when the liquid egg product was cooked to Thai-style omelet, using 35 semitrained panelists, showed that there were 2 highly acceptable formulae. Both formulae contained 1.5% egg white powder, 5% water, 0.75% carboxyl methylcellulose, 0.25% iota carrageenan, 81.5% and 82.5% liquid egg white, 2% and 3% skim milk powder in formula 5 and 6 respectively. These formulae in liquid form and Thai-style omelet form were frozen by air blast and cryogenic freezing, and then stored at -18°C for 3 months. It was found that gel strength of formula 6 did not change, and its viscosity increased less than that of formula 5. For both formulae, there was no difference in the number of total plate count during storage, but %syneresis increased after stored for 2 months. As for the sensory evaluation, formula 6 received an acceptable eating quality and there was no difference either in frozen Thai-style omelet or Thai-style omelet made from frozen liquid egg product.

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