Nuntiya Yansupap 2007: Effect of Xanthan Gum and Turmeric Powder on Frozen Chicken Green Curry Product Qualities. Master of Science (Agro-Industrial Product Development), Major Field: Agro-Industrial Product Development, Department of Product Development. Thesis Advisor: Associate Professor Rungnaphar Pongsawatmanit, D.Agr. 80 pages.

Chicken green curry is a popular traditional Thai food and most are exported as frozen food. Coconut milk is used as an ingredient in the product and leaded to be a high fat food. In addition, frozen foods can be deteriorated from oxidation during the storage. Consumer survey was conducted from 120 respondents and asked participants to state or describe the quality of the required frozen food especially for curry. The survey indicated that 65 percent concerned about the low fat food and 88 percent agreed for using herb to prevent the deterioration during storage. Therefore, in this study, the effect of xanthan gum and curcumin powder were used in green curry for solving such problems as the fat replacer and antioxidant, respectively. Turmeric powder was prepared from heating using steam showed the higher value of color parameters (L*, a* and b*) and antioxidant activity ($1/EC_{50}$) compared with that prepared from heating with pressure cooker prior to drying. The effect of xanthan gum (0.025% and 0.050%) on the quality of frozen chicken green curry was investigated by reducing the coconut milk content about 25% and 50% compared with that of control (full coconut milk content of the formula), respectively. The viscosity and freeze-thaw stability of liquid part of green curry (without meat and vegetables using filtration) increased with increasing xanthan content after repeated freeze-thaw treatment. Since the green curry containing 0.05% xanthan gum exhibited high viscous appearance, the concentration of 0.025% was selected for next study. The b* parameter after 7 cycles of freeze-thaw treatment of green curry product containing 0.10% turmeric powder was highest compared with those of control and containing 0.025% xanthan gum. The TBARS values indicating rancidity in the product were lowest in the curry containing 0.10% turmeric powder after 1, 4 and 7 freeze-thaw cycles. The results suggest that in terms of viscosity (fat replacers) and antioxidant properties, xanthan gum and turmeric can be applied in frozen chicken green curry for further product development.

_____ _____ ___ / ___ / ___

Student's signature Thesis Advisor's signature