

Research Title	PRODUCTION OF INSTANT CHILI SAUCE POWDER USING FOAM-MAT DRYING
Researcher	Mr.NARATIP POONNAKASEM
Organization	Food Technology, School of Culinary Arts, Suan Dusit University
Year	2019

The objectives of this research were to study factors that affect foam-mat drying process of chili sauce, shelf life and acceptance of instant chili sauce powder (ICSP). First, secondary data of commercial chili sauce in Thailand and abroad was surveyed. It was found that there were 12 brands in Thailand and 6 popular brands abroad. Questionnaire was prepared using focus group from representative target group. The questionnaire was used to collect data from 400 consumers. The data showed that there were 4 popular chili sauce brands including Sriraja Panich[®], Rosa[®], Heinz[®] and Golden Mountain[®]. The Sriraja Panich[®] was determined as a prototype. Then, effect of albumin powder (foaming agent) at 3 levels of 2, 4 and 6% of total weight on phycochemical properties was studied. It was found that increasing of albumin powder level lead to increasing of foam expansion and decreasing of foam density, so 6% albumin powder level was chosen. For study of drying temperature at 3 levels of 60, 70 and 80^oC, it was found that 80^oC condition lead to the lowest moisture content and water activity and the highest water solubility index and water absorption index. The optimum drying temperature of 80^oC was selected for foam-mat drying process. Acetic powder was considered to add in ICSP to improve flavor and reduce pH by ratio of ICSP: acetic powder = 5:1. For shelf-life study, microbiology test data of initial ICSP had total viable count, yeast and mold, coliform and *E.coli* following a Thai community product standard of seasoning powder. Storage test of ICSP in 3 different packagings of NYLON, AL-LAM and OPP & AL-LAM at room temperature for 12 weeks was done. It was found that product had higher lightness and lower redness and yellowness during storage. Plots of moisture content of ICSP in all types of packaging vs time were linear model. The packaging that could protect moisture permeable were ranked following AL-LAM > OPP & AL-LAM > NYLON. Shelf-life prediction of ICSP using moisture content as criteria was done. From the model, the ICSP in AL-LAM packaging could be stored for 13 month. Packaging prototype was created. Nutrition facts data showed that energy of 15 g serving size of ICSP (recombined solution) was 15 kcal. For acceptance test of 100 panelists, sensory scores were ranging from 6.6 – 7.4. Moreover, the data showed that the product was easy to use, packaging was appropriate and 98% consumer had purchase intention.