

Tawipat Vijitpunyaruk 2007: Process Development of Fried Rice with Shrimp in Retortable Pouch. Master of Science (Food Science), Major Field: Food Science, Department of Food Science and Technology. Thesis Advisor: Mr. Anukul Watthanasuk, Ph.D. 149 pages.

This study aims to develop fried rice with shrimp in retortable pouch to satisfy consumer's requirements. The presurvey of the product profiling indicated that consumers want shrimp fried rice with carrot and scallion but don't want sweet soy sauce, tomato sauce and fried egg. In a study of chemical properties of three rice varieties for making fried rice with shrimp, it was found that three rice varieties were high amylose rice. Amylose content of Leuang Pratew 123 (LP123), Khao Tah Haeng 17 (KTH17) and Patum Thani 60 (PT60) were 27.7%, 26.3% and 26.9%, respectively and all of them had nearly the amount of moisture and protein content. Study the cooking of rice in term of cooking time, cooking temperature of rice flour and characteristic of gel consistency. It was found that LP123 (the highest amylose) had the highest cooking time at 23 minute, gelatinization temperature at 70-74 °C and had a medium gel consistency. In the experiment for selecting rice variety, fried rice with shrimp were examined and then selected rice variety that could make an ideal product by sensory test. The results showed that KTH17 was appropriate due to its friableness of grain and hardness of grain. Therefore, KTH17 was chosen for using as raw material for making fried rice with shrimp. Study of pre-cooked raw materials by dipping rice in boiled water at 2.5, 3.5 and 4.5 minute showed that dipping rice at 4.5 minute had the highest acceptance in appearance, texture and overall acceptable score ($P \leq 0.05$) and the highest light of color. The result of dipping time of shrimp at 1, 2 and 3 minute found that dipping shrimp at 1 minute had the highest texture acceptance and highest in light and red color ($P \leq 0.05$). In study of sterile condition, it was found that the optimum sterilized condition was heating product at 116 °C, with F_0 value of 5 minute. For microbial examination, it was found that the product qualities were in standard of low acid canned food. The proximate composition of product were 58.1% moisture, 10.9% protein, 6.6% lipid, 3.3% ash, 0.3% fiber and 20.8% carbohydrate. In study of product stability, It was found that products are stable when kept at 25, 35 and 45 °C at least 3 months. The consumer acceptances were at the level of like slightly to like very much. From the microbial test, It showed that products were safe to eat. It was concluded that fried rice with shrimp packaged under vacuum condition had better qualities than the product packaged under atmosphere condition at every storage temperature.

Student's signature

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