Thesis Title	Development of Instant Egg Soup By Freeze-dry Process	
Author	Miss. Jittapat Yaempae	
M.S.	Food Science and Technology	
Examining Committee:	Assoc. Prof. Dr. Pairote Wiriyacharee	Chairman
	Asst. Prof. Lakkana Rujanakraikarn	Member
	Mrs. Srisuwan Naruenartwongsakul	Member

Abstract

The instant egg soup is the new product developed as a new choice for instant food consumer in term of better quality and nutritional value. As the product was efficiently processed by using suitable process to keep the good quality and its nutritional value, therefore the freeze-dry process was used. The process involved sublimation so that the product would not be destroyed by high temperature. The product itself had also good odor and flavor including good structure and texture, since its shape was not even shrink and collapse. In addition, this product was a convenience one as it could rehydrate readily and quickly.

The study of optimal formulation and process of the freeze-dried egg soup, it was found that the developed instant egg soup contained 45% egg, 9% carrot, 5.5% shallot, 4.5% seaweed, 9% minced pork and 27% pork soup. Moreover the seasoning in the soup was composed of 1% white pepper, 12% monosodium glutamate, 10% maltose, 5% granulated sugar, 15% soy sauce and 57% salt. The optimal process of the product was to mix together all of the ingredients mentioned above then individual quick freezing (IQF) at –34 ° C for 30 minutes was monitored and followed by sublimation at 30 ° C under pressure of lower than 133 x 10^{-3} mBar. The drying time was 36 hours (for 3.6 kg of product). The product was ready to rehydrate with hot water for 2 minutes.

The study of packaging conditions using aluminium foil and its shelf-life showed that the product packed with oxygen absorber had better physical and sensory acceptability than the others. Its shelf-life was longer than 4 months and it seemed to be longer since no quality was changed when the product was kept at that condition. However, the product packed in vacuum condition had its shelf life about of 3months.

The instant egg soup being produced by suitable formulation and process had the colour in Hunter value; L(77.27) a*(-0.44) b*(33.87) and rehydration value 83.1%. The product had 1.79% moisture content, Aw 0.09, 45.4% protein, 26.1% fat, 2.2 % crude fiber and 9.8% ash. As far as microbiological tests were concerned, the bacterial count of the product was less than 30 cfu / g, no yeasts and mould were

observed. The panalists accepted the final product with mean ideal ratio scores of colour, appearance, flavour and texture of egg, so as to the texture of carrot and pork including its flavour concerning the saltiness, overall flavour and acceptability by the scores of 0.86, 0.87, 0.93, 0.84, 1.02, 0.94, 0.93, 0.92 and 0.84 respectively.