

## **Encapsulization of *Channa striatus* Extract by Spray Drying Process**

### **Abstract**

*Channa Striatus* is known as snakehead fish or local name as haruan, has been always associated with its medical value especially in wound healing. This fish is rich in protein as well as others biochemical compounds such as polyunsaturated fatty acids and antioxidants. Usually, the haruan is extracted and marketed in the form of liquid concentrated as health food supplement. In this study, encapsulated haruan extract were produced using spray drying process. The main purpose is for easy handling and the preservation of the biochemical compounds. The biochemical compound in the powder produced is expected to have properties such as more stable and longer shelf life. K-carrageenan was used as coating material for the encapsulation during the spray drying process. The properties of encapsulated powder produced were observed in term of particle size distribution, Fish Protein Hydrolysates (FPH) and moisture content. The process parameters of spray drying process studied were hot air inlet flow rate, temperature and the liquid feed flow rate. The experimental run and optimization were designed using Box-Been method as suggested by Response Surface Methodology (RSM). The optimum operation conditions for highest protein extracted with lowest moisture content and smallest particle size distribution were obtained at hot air inlet temperature and flow rate of 144.51°C and 400 mL h<sup>-1</sup>, respectively; whereas, the liquid feed flow rate is at 47 m<sup>-3</sup> h<sup>-1</sup>. The optimal properties of encapsulated powder obtained were 5.2850 µm, 91% of protein and 8.7% in moisture content. © 2010 Asian Network for Scientific Information.