

Thesis Title Determination of Proteins in Fish Sauce by Flow
Injection Analysis

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M.S. Chemistry

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ABSTRACT

A simple flow injection colorimetric procedure has been proposed for determining total proteins in fish sauce samples via ammonia in sample solutions obtained from Kjeldahl digestion. The method is based on diffusion of ammonia through a PTFE membrane from an alkaline (NaOH/EDTA) medium to an indicator (bromothymol blue) stream, resulting in the change in absorbance at 660 nm of the indicator. This absorbance change is proportional to the ammonia concentration present in the digest. The optimum conditions for the flow injection system namely wavelength of absorption, concentra-

tions of reagents used, pH of reagents, flow rate, PTFE membrane, diameter and length of the mixing tubings. Under optimum condition, linear calibration curves over the ranges 0.2-1.0, 1.0- 5.0 and 5.0- 10.0 mM of NH_4Cl were established. The precision of the method was 1.7%. Approximately 60 samples could be injected per hour. The method was applied to the determination of total proteins in fish sauce samples. A comparative determination of total proteins in fish sauce samples was also carried out by automatic distillation titration method. Results obtained by both methods were in good agreement.