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THIPOL SATARPAI : DETERMINATION OF SOME ORGANIC AND
INORGANIC SPECIES IN PROCESSED FOODS BY ION CHROMATOGRAPHY. THESIS

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Ph.D. 140 pp.

An ion chromatography (IonPac AS 18 column of 4×250 mm dimension) with suppressed conductimetric detection and an automated KOH generator were used to simultaneous determination of the contents of some organic acids namely, acetic acid, formic acid, succinic acid, malic acid, tartaric acid, ascorbic acid and citric acid and inorganic anions namely, fluoride, chloride, bromide, nitrite, nitrate, phosphate and benzoate. The method required no special sample pretreatment. The separation of all anions was achieved by the gradient elution as follows : eluting with 5 mM KOH (1 to 15 min) and then ramping to 40 mM KOH (15 to 35 min). For anions studied, linear calibration curves were obtained within the concentration ranges of the anions analysed in all samples. The limit of detections for the organic anions were in the range of 0.09 - 3.06 mg/L while those for the inorganic anions were in the range of 0.14 - 1.21 mg/L. The processed foods selected for this study were tea leaves, instant tea beverages, ham and canned tuna.

For the samples of tea leaves and instant tea beverages, the %recoveries of the anions were found to be in the range of 83.9 to 113.6 % while those for the samples of ham and canned tuna were in the range of 78.9 to 135.1 % except the %recovery of ascorbic acid was in the range of 44.5 to 106.8 %. The precisions of the method were within the accepted ranges.

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Thesis Advisors's signature 1. 2.