Abstract

Vitamin A and iron deficiency is observed mainly among the population in rural, dry and arid zones. Oxalic acid may course nutrient deficiencies and also contribute to the formation of kidney stones. It is probably due to the non availability and poor knowledge of vitamin A ,iron and oxalic acid rich foods. Although vitamin A and iron are most bioavailable in foods of animal origin, the high cost of these foods make them less accessible to most people in Sri Lanka.

This project was aimed to identify cheap sources rich in provitamin A, iron and oxalic acid and to evaluate the concentrations of different green leafy vegetables. Further bioavailability of beta-carotene was calculated in terms of retinol equivalent, iron and oxalic acid in terms of mg/100g of edible portion.

All plant pigments were extracted with acetone and running through a open column chromatography to separate beta-carotene. The eluted was determined by spectrophotometry. In the iron estimation measure the absorbance of complex form, between iron (II) and 1,10-phenanthrolene, and determined amount by using spectrophotometry. Oxalic acid converted into form of insoluble calcium oxalate and separating it by centrifugation. Again it was converting back to oxalic acid by using conc.H_2SO_4, and quantified by titrametically with $KMnO_4$ solution of standard normality.

Of the green leafy vegetables, retinol equivalent was highest in kathurumurunga (22.94µg/g) closely followed by murunga (16.79µg/g) and kura-thampala (15.55µg/g). Hin-gotukola (53.98mg) pochchi gotukola (42.95mg) and rathu-thampala (40.43mg) were the highest amounts of iron content found in 100g of edible portion and the murunga (165.25mg), kathurumurunga (122.01mg) and nivithi (78.98mg) leaves are the leafy vegetables that contain highest amount of oxalic acid in 100g of edible portion.