

Abstract:

Nitrate content in vegetables is concerned with food safety. In recent years, several studies have addressed a possible relationship between nitrate exposure and childhood type 1 insulin-dependent diabetes mellitus (van Maanen et al., 2000). Nitrate included in vegetables accounts for 50-90 % of uptake (Sohn and Yoneyama, 1996). Nitrate concentration in leafy *Cruciferae* and spinach is high. On the other hand, spinach also contains oxalate in a relatively high level. Uptake of oxalate is related to causing urinary stones. Metabolism of ascorbic acid, nitrate and oxalate is related each other, in addition, even cations and the other anions. Therefore, it is important to quantify nitrate, oxalate and the other major organic acids (malate and citrate) in spinach. Non-suppressed IC with electrical conductivity detection in which a low conductivity eluent is used, is for simultaneous determination of organic acids and inorganic anions in food samples. But oxalate has not been detected (Ding et al., 1997). In this study, we describe new conditions to analyse nitrate and organic acids in spinach simultaneously.