Perchlorate analysis of vegetables grown in Chiang Rai, Thailand

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Abstract: Perchlorate is one of the contaminants found naturally in the environment. The consumption of food containing large amount of perchlorate affects the absorption of iodine in human body and interrupts hormone production of thyroid gland. In this work, perchlorate concentrations in five different kinds of vegetables grown in Chiang Rai, Thailand were analysed by perchlorate ion selective electrode. 50 samples of vegetables were collected from the local markets in Chiang Rai. The analyzed vegetables were cabbage, Chinese cabbage, bok choy, Chinese kale and yardlong bean. The average perchlorate concentrations for cabbage, Chinese cabbage, bok choy, Chinese kale and yardlong bean were 126.2, 150.2, 180.5, 160.4, 110.2 µg/kg, respectively. The levels of perchlorate found in vegetables were lower than the allowed levels set by the European Commission (200 µg/kg). If there are no other contaminants, these vegetables are safe for consumption.

Keywords: Perchlorate; Food analysis; Ion selective electrode; Chiang Rai, Northern Thailand