

ABSTRACT

Trivalent chromium is an essential trace element to man and the biologically more active form is a complex of chromium glutathione dinicotinate which is termed glucose tolerance factor (GTF). It functions as a cofactor for insulin and its deficiency may lead to impaired glucose tolerance and hyperlipidaemia.

The total and GTF-chromium content of some common foods was determined in order to identify good dietary sources of chromium, specially those rich in GTF-chromium. Samples were processed by wet ashing and a combination of both dry and wet ashing. Chromium was measured by colorimetry, flame atomic absorption spectrometry and graphite furnace atomic absorption spectrometry.

Bitter gourd (Momordica charantia) small variety had a high total and GTF-chromium content and garlic (Allium sativum) had a moderately high concentration of both total and GTF-chromium. The presence of GTF-chromium in these foods may be related to their hypoglycaemic activity. High values of total and GTF-chromium were also observed in potato (Solanum tuberosum) and in dhal (Cajanuscajan). Among the green leafy

vegetables studied, higher values of total chromium were observed in "Gotukola" (Centella asiatica) and in "Sarana" (Trianthema decandra), which are also of a medicinal value. Samples of these two vegetables obtained in Kandy showed a lower content compared to those obtained in Colombo, and this may probably be related to the low chromium concentration found in ground water in the Kandy district.

Graphite furnace atomic absorption spectrometry was found to be a more sensitive and reliable technique.