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Folate content of cultivated and wild traditional leafy vegetables found in Nigeria

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Folate is an important micronutrient in the prevention of neural tube defects and cardiovascular disease. Given its importance, it is necessary to establish accurately the folate content foods that could contribute significantly to dietary intake. The aim of the study was to quantify the folate content in raw and cooked traditional leafy and non-leafy vegetables because there is a dearth of information on the folate content leafy vegetables found in Nigeria. Therefore the folate content of seven traditional leafy vegetables and one none leafy vegetable found in Nigeria were determined. The vegetables included: *Corchorus olitorius*, *Adansonia digitata*, *Abelmoscus esculentus* (fruit), *Abelmoscus esculentus* (leaves), *Amaranthus hybridus*, *Launaea taraxacifolia*, *Solanum macrocarpon*, and *Crassocephalum crepidioides*. They were further cooked in boiling water, until assessed as cooked according to Nigerian eating habits..

Folate is found in foods mainly as polyglutamate. The analysis of folate in the raw and cooked vegetable samples followed the process of extraction, deconjugation (using chicken pancreas deconjugase), derivatisation (a series of chemical reactions to convert all folate present in the deconjugated sample extracts, to 5-methyltetrahydrofolic acid (THF-5CH₃) monosodium glutamate and / or diglutamate), purification by affinity chromatography with Folate Binding Protein and quantification by HPLC equipped with fluorimetric detection. Folate content in the raw samples ranged from 183.4 µg/100g (FW) in *Corchorus olitorius* to 21.5 µg/100g (FW) in *Solanum macrocarpon* leaves; and in the boiled samples from 48.6 µg/100g (FW) in *Launaea taraxacifolia* to 8.5 µg/100g (FW) in *Solanum macrocarpon*. Loss of folate in the boiled vegetables varied from 46.6% in *Launaea taraxacifolia* to 88.4% in *Adansonia digitata*.

Traditional green leafy vegetables are good sources of folate. However cooking of the vegetables caused a considerable decrease in the folate content of the vegetables. Considering that most leafy vegetables are consumed in their cooked form in Nigeria, preparation methods of traditional leafy vegetables that would allow for optimal retention of folate are necessary.