

**Suitability assessment of detergent analysis method as an alternative method for non enzyme gravimetric method in dietary fiber analysis**

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**Abstract**

The quantification of dietary fiber has become essential in food analysis due to increasing recognition as a health protector. Enzyme gravimetric method and non enzyme gravimetric method are presently available for this purpose. These two methods have practical limitations due to high running cost and time. The study aimed at assessing the suitability of detergent analysis method as an alternative method for non enzyme gravimetric method. Samples of vegetables, green leafy vegetables, fruits and cereals with starch content varying from low to high were selected and analyzed using both detergent analysis method and non enzyme gravimetric method in triplicates. Non enzyme gravimetric method involves solubilizing sugar and other water soluble compounds by incubating together with precipitating water soluble fiber component using ethanol. The final weight was corrected for moisture, ash and protein. In detergent analysis method, digestion of non fiber components was done by neutral detergent solution which was primarily consisted of sodium lauryl sulphate and ethylenediaminetetraacetic acid (EDTA) while heating. The residue was vacuum filtered and washed to remove impurities. The dietary fiber values resulted by the two methods were compared using two-sample t-test at 95% confidence level. Detergent analysis method and non enzyme gravimetric method resulted in overall mean values of 3.88 and 4.13 g/100g indicating that there was no significant difference ( $P > 0.05$ ) among the two detection methods. The statistical analysis of mean values of dietary fiber contents of green leafy vegetables and vegetables also showed that there was no significant difference ( $P > 0.05$ ) in the two methods. Hence the detergent analysis method could be used as an alternative method for non enzyme gravimetric method in analyzing dietary fiber content in a manner that would save the time and chemicals.

**Keywords:** Detergent analysis method, Non enzyme gravimetric method, Dietary Fiber