

Nutritional evaluation of *Moringa oleifera* leaves using three drying methods

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ABSTRACT:

Moringa oleifera, is a tropical plant with many useful parts. Nutritionally, it is noted for high protein and vitamin A content. In recent times a lot of interest has been generated in the nutritional benefits of this plant, so there is a need to process it in a cost effective manner that will conserve the nutrients and ensure its availability as a food supplement. The objective of this study is to determine the optimal conditions (method, temperature and humidity) for drying *Moringa oleifera* leaves for maximum nutrient conservation. Leaves of *M. oleifera* were either solar, mechanical or room temperature dried and milled into powder. The powders were analysed for moisture and protein by proximate method; vitamin C by indophenol method; vitamins A, vitamin E, and lutein/zeaxanthin using HPLC. pH was measured with a pH meter; water activity by dielectric & conductivity method; mould and yeast by ISO 7954 (1987) and mycotoxins by HPLC. The fresh leaves were also analysed. The results showed that drying decreased protein levels in the leaves up to 19%. Vitamin levels decreased (63% to 85%) depending on vitamin type, with all the drying methods used. Although beta-carotene and vitamin C levels were less affected by drying at room temperature, this method did not offer convenient moisture content and water activity for good storage of powder. Both solar and mechanical drying offered products with good moisture and water activity levels that are convenient for storage as well as appreciable nutrient levels.

Keywords:

Physicochemical parameters, Ground water pollution, Permissible limit, Industrial area.