



Effects of different drying methods on selected essential macro-mineral contents of four vegetable leaves

Aderonke MOSURO

Lead City University, Nigeria

Abstract

The high nutrient content, all year-round availability and self-propagating nature of green leafy vegetables (GLV) in tropical climates make them a viable nutritional option for humans and livestock. Their inherent high moisture is however a major barrier to potential preservation, packaging, storage and inclusion in dietary formulation. Effective dehydration without significant losses to inherent nutrients such as vitamins, minerals, amino acids and energy is a major challenge where GLV are concerned. This experiment was conducted to identify the drying method with the least impact on the macro-mineral profile of seven leafy vegetables. Five essential macro-mineral profiles of seven phytonutrients-rich GLV (*Telfaria occidentalis*, *Celosia argentea-green*, *Vernonia amygdalina*, *Moringa oleifera*, *Launea taraxacifolia*, *Curcubita maxima*, *Celosia argentea-red*) were investigated in this study using 3×7 factorial arrangements in a completely randomized design. Samples were air-dried (AD), oven-dried (OD) and freeze-dried (FD). The dried, milled GLV leaves were assayed for calcium, magnesium, phosphorus, potassium and sodium. Data were subjected to ANOVA at $\alpha 0.05$. Calcium (0.23%), magnesium (0.27%), phosphorus (0.34%), potassium (0.59%) and sodium (0.17%) in AD samples and 0.23% (calcium), 0.17% (sodium) in FD samples were higher ($P < 0.05$) than all other FD and OD samples. 0.26% (magnesium), 0.58% (potassium) and 0.33% (phosphorus) in FD samples were similar to 0.21% (calcium) and 0.16% (sodium) in OD samples. Least ($P < 0.05$) values of 0.25% (magnesium) 0.30% (phosphorus) and 0.58% (potassium) were in OD samples. Significant interactions of drying methods and leaf types were observed on macro-mineral profiles of GLV in this study. The three selected drying methods successfully preserved inherent macro-minerals, but Air Drying was the preferred method.

Biography

Aderonke Mosuro holds a doctorate degree in Agricultural-Biochemistry and Nutrition from the University of Ibadan, Nigeria. She is a lecturer in Human Nutrition and Dietetics at

the Faculty of Basic, Medical and Applied Sciences, Lead City University, Nigeria. Her interest in metabolism of vitamin and minerals has led to significant contributions to knowledge in effective green leafy vegetables preservation through drying methods and has successfully demonstrated the replacement of vitamin-mineral premix with leaf meal composites in rats and broiler chickens. She has presented papers at reputable local and international conferences. Her published articles in refereed conference proceedings and peer reviewed journals exceed thirty.



Publication

1. Vitamin and provitamin profiles of selected vegetables as affected by different drying methods mosuro, a. o agricultural biochemistry and nutrition unit, department of animal science, university of ibadan, ibadan, nigeria. **department of agricultural science, tai solarin university of education, ijebu-ode, nigeria
2. Assessment of nutritive value in mixtures of oil palm slurry and cassava peels using in vitro gas production techniques mosuro, a. o agricultural biochemistry and nutrition unit, department of animal science, university of ibadan, ibadan, nigeria
3. Performance of pre-weaned West African Dwarf lambs fed rumen epithelial scrappings mosuro, a. o agricultural biochemistry and nutrition unit, department of animal science, university of ibadan, ibadan, nigeria

9th International Conference on Food Science & Technology
March 18-19, 2020 | Frankfurt, Germany

Author Citation: Aderonke MOSURO, Effects of different drying methods on selected essential macro-mineral contents of four vegetable leaves, Food Technology 2020, 9th Conference on Food Science & Technology, March 18-19, 2020, Frankfurt, Germany, 15