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Extended Abstract

Nutrition and Health 2017: Determination of Proximate and Mineral Composition of Three Traditional Spices - Onimawo I A- Ambrose Alli University

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Abstract

Zingiber officinalis Roscoe, generally known as ginger belongs to the family Zingiberoside's cultivated commercially in India, China, South East Asia, and other parts of the world. It is expended worldwide as a spice and flavouring agent and is qualified to have many medicinal properties Garlic (Allium sativum) is specie of the onion family and it is used as flavour in cooking and pickling, sometimes in the form of whole / grated cloves and sometimes in the form of a cooked extract as in pastes and dressing. It has a typical pungent spice flavour that mellows and sugar-coats considerably with cooking. Locally, in Nigeria garlic is frequently paired with ginger to make stews and soups.

Garlic is used as addition and on preparation of baked properties, puddings, soups, stew, meat products, non-alcoholic beverage gravies and soft candy. In medicine the garlic is used as a digestive stimulant, diuretic and anti-spasmodic. Monodora myristica belongs to the Annonaceae family and is one of the most significant trees of the evergreen forest of West Africa .It is native to Nigeria, where the seed is called as ehuruorehirorabo-lakoshe among the Yorubas. This seeds are popular spice used in cooking to taste and thicken dishes. Medicinal this root is chewed to relieve toothaches and swelling. It is also used in treatment of anaemia, haemorrhoids and sexual weakness .This study will therefore contribute to the knowledge and about the nutrient contents of these traditional spices.

Materials and Methods

Collection and preparation of samples

Samples of traditional spices – garlic, ginger and African nutmeg was bought from an local market at the Ekpoma, Esan West local management area, Edo state, Nigeria. The samples were fresh, viable, and free from disease. The samples were identified and authentic at the Department of Botany by a Plant taxonomist. After which, the samples were properly well-preserved at the Laboratory of the Department of Biochemistry, Ambrose Alli University, Ekpoma. The samples were skinned using a laboratory knife and grinded by using wooden mortar to get a wanted texture. This was done f3 samples respectively. The grinded wet samples are analysed for their nearby compositions at the Department of Animal Production and Health Nutrition Laboratory, Federal University of Technology, Akure.

Determination of mineral content of sample

Mineral contented the different traditional spice samples was assessed following the method of Pear son. et al. (1981). About 1.5g of the sample was burned in a Muffle furnace for 6 hours at 550^{o}C and the resultant ash was cooled in the desiccator after which, 0.1M HCl solution was added to the break up the ash. It was then clean through acid and washed with Whatman paper No. 1 into 100ml volumetric flask, and diluted to 100ml by distilled water. Results Ash signifies the mineral matter left after feeds are burnt in the oxygen and this used as a measure of the mineral content in any sample. African nutmeg was found to have highest ash content (1.39%) compared to the ginger and garlic This means that African nutmeg have good mineral content, and thus serves as a viable tool for nutritional evaluation.This value from the ash content in African nutmeg is lower than the 4.52% reported by the Enwereuzoh. They had earlier postulated that such differences may arise from differences in soil micronutrients and it could also be partly credited to the method of analyses. The solution was studied for some metals with different hollow cathode lamps for calcium (Ca), iron (Fe), and zinc (Zn) used by an atomic absorption spectrophotometer while sodium (Na) content was determined using a Flame Photometer.

The data obtained that this study were subjected to one-way analysis of variance. Results were recorded by they mean ± standard determination of two-repeated determinations.

Discussion and Conclusion

The proximate and some mineral compositions of 3 different traditional spices garlic, ginger and African nutmeg (Monodora myristica)was investigated in this study and marks of the observations are summarised. Moisture contented in any food is an index of its water activity and it is used as a measure of stability and susceptibility to bacterial contamination. Ash characterises the mineral matter left after

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feeds are burnt in oxygen and It is used as a measure of the mineral content in any sample. Crude fat (lipid) contented that the African nutmeg was known the highest than those of ginger and garlic From this stud and it was observed that the lipid content of Monodora myristica (46.48%) was significantly ($p < 0.05$) higher than that of garlic (6.13%) and ginger

Carbohydrate delivers energy to the cells in the body and it is necessary for maintain the plasma glucose level and it spares to the body protein from being easily digested and helps to prevent the use up of protein. the high carbohydrate content observed in garlic advises to its high caloric value and is indicative of its high sugar concentration compared to other spices. They also control the fluid balance of the body and hence, influence the cardiac output. Calcium was the most abundant element found in all the spices evaluated and calcium has been reported to be essential for bone and teeth formation. Zinc is spread widely in plant and animal tissues and occurs in all living cells. Zn dependent enzymes are involved in the macronutrient metabolism absorpation and cell replication. Zinc is well define as trace elements in diabetes as cofactors for insulin In humans, deficiency sicknesses or symptoms include hypogonadism, growth failure, impaired wound healing, and decreased taste and smell acuity . this availability of zinc in African nutmeg seed will aid in the prevention of its deficiency associated diseases. Based on the results its obtained, all traditional spices recorded variable the proportions of the proximate components as well as mineral contents. However, the African nutmeg controlled better moisture, ash, crude protein, crude fat, and crude fibre contents with higher sodium, zinc, and iron mineral contents compared to the other spices examined the garlic while it had a better carbohydrate and calcium levels.

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