

Effect of selected preservatives on nutritional indices of *Phaseolus lunatus* (lima beans)

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The Quest for food sustainability as well as maintaining the nutritional value of food crops and products over the years have necessitated the use of both natural and artificial preservatives. This research was undertaken to investigate the effect of selected preservatives on the nutritive indices of *Phaseolus lunatus* (Lima Beans). The *P. lunatus* used for this research was obtained in bags. It was prepared and sent for analysis in laboratory prior to storage with selected preservatives. The selected preservatives were gotten and prepared for the preservation following the standard protocol. The lima beans were divided into airtight vessels and label it group A to D which were preserved with selected preservatives, DDVP (sniper), birds eye pepper, Wood Ash respectively while the group D serving as control and were left untreated with any preservative. The beans mixed with preservative were left to stay for 6 months. Standard methods were used to assess the effect of the preservatives on the proximate constituents, mineral concentrations and amino acid contents respectively of the preserved groups compared with the control. The results showed that Lima beans is rich in essential amino acids with Lysine showing the highest concentration among the essential amino acid for the pepper preserved and was noticed to be same across all the essential amino acids while wood ash preserved group show dis-improvement in amino acid concentration. The observed improvements in some parameters showed that the chemical in some groups are more effective at some aspect while natural preservatives at some other points. Its effectiveness for a longer shelf life and stop or delay the growth of bacteria, suppress the reaction when food comes in contact with oxygen or heat, they also prevent the loss of some essential amino-acids and some vitamins enhance the food flavors and colors. The results of this study showed that some of the selected preservatives used on the lima beans suggested that it could improve the shelf life and improve nutritive values.

Conclusion:

Additives and preservatives for a very long time have been of great importance to farmers and food processing industries. Natural methods of preservation usually aim to exclude air, moisture and microorganisms, or to provide environments in which organisms that may result to spoilage cannot survive. In recent time, several inorganic chemicals are used as food preservatives. They are important as it helps to increase shelf life of crops and stop or

delay the growth of bacteria, hinders the reaction when food comes in contact with air, moisture or heat, they also prevent the loss of some essential nutrients and as well enhance the food flavours and colours. It has been reported that chemicals which are used as preservatives have some possible influence to the nutritive indices of foods. Even though natural preservatives have been used over the years, artificially produced chemical like sniper and aluminum phosphide were comparatively studied and compared some of the natural preservatives pepper and wood ash. It was observed that the chemical more effective at some aspect while natural preservatives at some other points.

Keywords:

Nutrition, Preservatives, Preservation, Lima bean, Legumes, Proximate, Minerals.

Biography

Chibuzo Carole Nweze PhD is an Associate Professor of [Biochemistry](#) with [Nasarawa State University](#), Keffi, Nigeria. Her area of interest is in Food, [Nutrition](#), Phyto and Industrial Biochemistry. She has numerous publications in outstanding local and International journals. Her research expertise is majorly on Nutraceuticals and Functional foods where she has carried out studies on many indigenous flora for health and diseases management. She has presented reputable trendy papers in many conferences, Workshops and Seminars globally. She has supervised many undergraduate and postgraduate students in mind blowing current issues in Biochemistry research. She is a professional member of many international academic bodies.