



BIOTECHNOLOGY SOCIETY OF NIGERIA
(BSN)

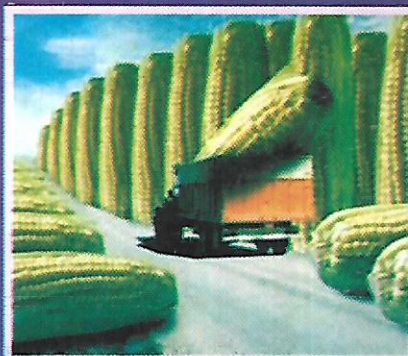


FEDERAL UNIVERSITY OF TECHNOLOGY
Minna, Niger State, Nigeria.

Theme:

**BIOTECHNOLOGY AS A CHANGE AGENT
FOR NATIONAL DEVELOPMENT**

DATE: 27th - 30th August, 2017
VENUE: CPES Hall, Bosso Campus, FUT Minna,
Niger State.



Book of
ABSTRACTS



africana and *Prosopis africana* were the most frequently mentioned plant species. The respondents attributed this loss to urbanization, deforestation, expansion of agricultural activities and unsustainable collection of the plants. Therefore, the need by stakeholders to initiate conservation programs to restore these plants from becoming endangered and/or extinct.

Keywords: Conservation, indigenous knowledge, traditional practitioners, medicinal plants and endangered.

BZH 008

THE ROLE OF NANOTECHNOLOGY IN FOOD INDUSTRIES- A REVIEW

*Aigbogun, E. I., Mohammed, S. S. D., Orukotan, A. A., and Tanko, J. D

Department of Microbiology, Faculty of Science, Kaduna State University, Kaduna

*Corresponding author: aigbogunighodaro@gmail.com

ABSTRACT

This reviewed paper, points on the synoptic roles of nanotechnology in food industries which covers sectors such as food processing, encapsulation of nutraceuticals, food packaging, and food quality monitoring to enhance food safety and security. Nanotechnology refers to the engineering of material structures and sizes ranging from 1 – 100 nm to suit the need of different sector. Nanotechnology possess a great potential applications in all areas of the food sector in ensuring modification of colour and flavour, nutritional values, increasing shelf - life of food, and monitoring the integrity of food via barcodes such as cold chain whenever there is slight change in food storage condition because of its submicroscopic nature. Nanotechnology can also modify permeation of materials by the incorporation of synthesized nanoparticle (Zinc, silver, gold e.t.c) for better packaging system. From the synopsis of this review, it is evidently clear that the role of nanotechnology in food industries cannot be overemphasized. Currently, in nanotechnology, sensors and diagnostic devices with improved sensitivity and selectivity are used to monitor food processes to meet its wholeness and safety.

Keywords: Nanotechnology, Food processing, Packaging, Encapsulation, Quality Monitoring

BZH 009

PRODUCTION AND PARTIAL CHARACTERIZATION OF PROTEASE USING MANGO SEED KERNEL AS CARBON SOURCE BY *Bacillus megaterium*

*¹Gimba, A. Y., ²Shittu, K. O. and ³Abubakar, A.

¹Department of Biological Sciences, Niger State Polytechnic Zungeru, Nigeria

²Department of Biochemistry, Federal University of Technology, PMB65, Minna, Nigeria

*Corresponding author: gimbayaya@yahoo.com, +2347067045652

ABSTRACT

Proteases are the hydrolase enzymes that catalyze the hydrolysis of the peptide bonds in the primary structure of proteins and peptides. Mango seed kernel was evaluated to check the possibility of potential utilization as carbon source for protease production by *Bacillus megaterium*. Protease assay was carried out using casein as substrate and activity extrapolated from standard tyrosine calibration curve. The K_m and V_{max} of protease was extrapolated from Double reciprocal plot. The studies show that protease production by *B. megaterium* was higher using mango seed kernel as carbon source than in glucose. The production was optimal using Mango seed kernel at concentration of 1.5g, pH 5 after 5 days of incubation. The characterization of protease produced by *B. megaterium* grown on mango seed kernel has optimal activity at pH 4, temperature of 60°C and at 1 % casein concentration with high V_{max} and low K_m . It can be concluded that mango seed kernel can be used to replace the costly glucose in microbial enzyme production particularly protease.

Keywords: Protease, Mango seed kernel, Glucose, *Bacillus megaterium*, Casein

BZH 010

MICROBIOLOGICAL QUALITY ASSESSMENT OF RAW SALAD VEGETABLE SOLD IN MINNA METROPOLIS, NIGERIA

*¹Bala, J. D., ¹Adabara, N. U., ¹Kuta, F. A., ¹Abdulsalam, R., ¹Abioye, O. P., ¹Adelere, I. A.,
¹Damisa D. and ¹Murtala, G

¹Department of Microbiology, Federal University of Technology, Minna, Niger State, Nigeria.

*Corresponding author: jerrybrown316@yahoo.com, bala.jeremiah@futminna.edu.ng, +2348037868393

ABSTRACT

A total of twenty five (25) raw salad vegetables were collected and the microbial assessment was investigated using pour plate method. The analysis was carried out on carrots, cucumber, cabbage, lettuce and tomatoes. The results obtained from this present study revealed that the total heterotrophic viable bacterial counts, coliform counts and fungal counts for all the salad vegetables ranged from 1.4×10^6 to 6.2×10^6 cfu/g, 1.1×10^6 - 3.3×10^6 cfu/g and 2.1×10^3 - 4.5×10^5 cfu/g respectively. The data obtained from the microbiological assessment were subjected to One Way Analysis of Variance (ANOVA) which showed that there was significant difference ($p < 0.05$) in the microbial load of the raw salad vegetables from each samples. The microbial isolates were identified as *E. coli*, *Staphylococcus aureus*, *Bacillus subtilis*, *Klebsiella* sp., *Pseudomonas* sp., *Aspergillus niger*, *Mucor* sp., *Penicillium* sp., *Aspergillus flavus* and *Fusarium* sp. *Staphylococcus aureus* and *Aspergillus niger* were found predominant. This suggests that salad vegetables in the present study are of public health concern and