

NIGERIA 2017

F. M. B. 05 UNIVERSITY OF TECHNOLOGY  
MINNA, NIGERIA.



---

**30th** **BSN**  
**ANNUAL INTERNATIONAL CONFERENCE**

---

27TH - 30TH AUGUST, 2017

Book of  
**ABSTRACTS**

- Production Supported by*
- \* **Biotechnology Society of Nigeria**
  - \* **Federal University of Technology, Minna**
  - \* **School of Life Sciences**  
*Federal University of Technology, Minna*

# CONTENTS

## BIOTECHNOLOGY FOR ZERO HUNGER (BZH)

001	EVALUATION OF GENETIC DIVERSITY IN AERIAL YAM ( <i>Dioscorea bulbifera</i> L.) USING MORPHOLOGICAL AND SIMPLE SEQUENCE REPEATS (SSR) MARKERS
002	RESISTANCE OF COWPEA ( <i>Vigna unguiculata</i> L. Walp) CULTIVARS TO SINGLE AND DOUBLE INFECTIONS WITH POTYVIRUS AND SOBEMOVIRUS ISOLATES
003	EFFECT OF NITROGEN FERTILIZER RATES ON GROWTH, FRUIT and SEED YIELD OF TWO OKRA VARIETIES ( <i>Abelmoschus esculentus</i> L. Moench)
004	EVALUATION OF OPTIMAL CULTURE MEDIUM FOR THE MYCELIA GROWTH OF <i>Magnaporthe oryzae</i> Strains (RICE BLAST PATHOGEN)
005	THE EFFECTS OF THE DISEASES CAUSED BY ECTOPARASITES OF FRESH WATER FISHES -A REVIEW
006	EFFECT OF DIFFERENT STERILIZING AGENTS IN CONTROLLING MICROBIAL CONTAMINATION AND BROWNING IN COCONUT ( <i>Cocos nucifera</i> L.) INFLORESCENCE CULTURE
007	THREATENED MEDICINAL PLANTS OF KANO FLORA AND THE NEED FOR URGENT CONSERVATION
008	THE ROLE OF NANOTECHNOLOGY IN FOOD INDUSTRIES- A REVIEW
009	PRODUCTION AND PARTIAL CHARACTERIZATION OF PROTEASE USING MANGO SEED KERNEL AS CARBON SOURCE BY <i>Bacillus megaterium</i>
010	MICROBIOLOGICAL QUALITY ASSESSMENT OF RAW SALAD VEGETABLE SOLD IN MINNA METROPOLIS, NIGERIA
011	MOLECULAR IDENTIFICATION AND MORPHOMETRIC CHARACTERIZATION OF HATCHERY BRED <i>Clarias batrachus</i> Lin, <i>Clarias gariepinus</i> Bur AND THEIR HYBRIDS
012	CHARACTERIZATION OF AFRICAN YAM BEAN USING SEED PROTEIN MARKER
013	EVALUATION OF MORPHOLOGICAL PARAMETER OF SOME SESAME ACCESSION ( <i>Sesamum indicum</i> L.) INDIGENOUS TO THE NORTH CENTRAL NIGERIA
014	MUTAGENIC EFFECTS OF COLCHICINE ON THE MORPHOLOGY AND YIELD OF TOMATO
015	EVALUATION OF LEAF EXTRACTS OF FOUR PLANT SPECIES AGAINST RICE BLAST PATHOGEN ( <i>Magnaporthe oryzae</i> )
016	MOLECULAR PHYLOGENY OF NIGERIA DATE PALM ( <i>Phoenix dactylifera</i> L.) USING RAPD AND ISSR MARKERS
017	EVALUATION OF SINGLE NUCLEOTIDE POLYMORPHISM (SNP) MARKER (LEOH19) FOR SELECTION OF <i>BW</i> -GENE OF TOMATO

004	RELATIONSHIP BETWEEN ANTISICKLING POTENCY OF PLANTS AND THEIR AMINO ACID COMPOSITIONS
005	MOLECULAR CHARACTERIZATION LIGNOCELLULOSE DEGRADING BACTERIA ISOLATED FROM GUT OF MOLE CRICKETS FOUND IN BOKKOS LGA
006	PCR DETECTION OF TET A AND TET B GENES IN BACTERIAL ISOLATES FROM ABATTOIRS
007	ANTIOXIDANT AND HEPATOPROTECTIVE POTENTIAL OF METHANOL EXTRACT OF HONEY BEE ( <i>Apis mellifera</i> ) PROPOLIS IN CARBON TETRACHLORIDE INDUCED LIVER DAMAGE
008	EVALUATION OF THE ANTIMALARIAL AND LIVER FUNCTION POTENTIALS OF METHANOL EXTRACT OF <i>Chrysophyllum albidum</i> stem bark in <i>Plasmodium berghei</i> - INFECTED MICE
009	ASSESSMENT OF SHELF LIFE AND MICROBIAL CONTAMINANTS OF SOME BREAD SOLD IN MINNA, NIGER STATE, NIGERIA
010	PRELIMINARY INVESTIGATION INTO THE THERMOSTABILITY POTENTIAL OF SALMOVAC VACCINE DEVELOPED USING LOCAL STRAINS OF SALMONELLA IN NIGERIA
011	BITTER KOLA-MEDIATED BIOSYNTHESIS OF SILVER NANOPARTICLES: ANTIMICROBIAL AND APPLICATION AS PAINT ADDITIVE
012	SUBCHRONIC TOXICOLOGICAL STUDIES OF CALYX OF <i>Annonasenegalensis</i> USED AS A SLURRY SAUCE
013	ANALYSIS OF MALNUTRITION AND ASSOCIATED FACTORS AMONG CHILDREN UNDER FIVE YEARS IN KAURA LOCAL GOVERNMENT, KADUNA STATE, NIGERIA
014	EVALUATING THE USE OF MICROSCOPIC EXAMINATION AND RAPID DIAGNOSTIC TESTS TO DIAGNOSE MALARIA IN NORTH CENTRAL NIGERIA
015	ANTIPLASMODIUM ACTIVITY OF LEAF EXTRACTS OF <i>Cassia nigricans</i> VAHL. (CAESALPINACEAE)
016	ANTIPLASMODIAL ACTIVITY OF TOTAL ALKALIODS EXTRACT AND FLAVONOIDS FRACTION FROM STEM BARK OF <i>Enantiachlorantha</i> IN MICE
017	MOLECULAR DETECTION OF <i>bla</i> CTX-M AND <i>bla</i> SHV GENES AMONG AEROBIC GRAM NEGATIVE SURGICAL SITE BACTERIAL PATHOGENS AT A TERTIARY HEALTHCARE FACILITY IN ABUJA
018	ANTI-FUNGAL ACTIVITY OF OIL EXTRACT FROM <i>Citrus sinensis</i> FRUIT BARK ON DERMATOPHYTE AND NON- DERMATOPHYTE FUNGI
019	<i>In-vitro</i> ANTIBACTERIAL ACTIVITY OF CASTOR ( <i>Ricinus communis</i> ) SEED OIL ON SELECTED PATHOGENS ISOLATED FROM HUMAN

... from standard tyrosine calibration curve. The  $V_{max}$  and  $K_m$  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

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

<sup>1</sup>Department 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  $1.4 \times 10^6$  to  $6.2 \times 10^6$  cfu/g,  $1.1 \times 10^6$  -  $3.3 \times 10^6$  cfu/g and  $2.1 \times 10^3$  -  $4.5 \times 10^5$  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

harbours microorganisms that could be hazardous to human health. Hence consumers should maintain the highest possible level of hygiene during the process of preparation.

**Keywords:** Microorganisms; Quality assessment; Raw salad vegetables

BZH 011

**MOLECULAR IDENTIFICATION AND MORPHOMETRIC CHARACTERIZATION OF HATCHERY BRED *Clarias batrachus* Lin, *Clarias gariepinus* Bur AND THEIR HYBRIDS**

**\*<sup>1</sup>Olufeagba, S. O., <sup>1</sup>Raji. A., <sup>2</sup>Ravinder, K. and <sup>2</sup>Majumdar, K.**

<sup>1</sup>National Institute for Freshwater Fisheries Research, New Bussa, Niger State, Nigeria

<sup>2</sup>Centre for Cellular and Molecular Biology, Uppal Road, Hyderabad, India

**\*Corresponding author:** E.mail:olabodekainji@gmail.com

**ABSTRACT**

Artificial hybridization of Asian catfish (*Clarias batrachus*) and African catfish (*Clarias gariepinus*) was carried out to study the performance of their progenies in indoor rearing system. Confirmation of successful hybridization was done using morphometric traits and molecular markers specific for mitochondrial (cytochrome b) of *C. batrachus*. At fertilization till embryonic shield stage, hybrids of *C. gariepinus*♀ X *C. batrachus*♂ had 89% survival and 85% hatchability for the treatment. However, the hybrids between *C. gariepinus*♂ X *C. batrachus*♀ showed 98.2% survival at fertilization and 95% hatchability. All the hatchlings from *C. gariepinus*♀ X *C. batrachus*♂ had various types of deformities which probably led to their death within few hours of hatching. The highest total weight and body length was recorded in hybrid of *C. batrachus*♀ X *C. gariepinus*♂ when compared with the pure breed progenies. Analysis of the mitochondrial cytochrome b gave confirmation of hybridization between *C. batrachus*♀ X *C. gariepinus*♂. This is the first known report where mitochondrial (cytochrome b) marker was used to confirm hybridization between *C. batrachus* and *C. gariepinus* using Clcy forward primer:TCCCTATTATTACTATGCCTTA;Clcy reverse primer:CAGGCTGCTAGTGGGTTTAAAA).

**Keywords:** Hybridization; Cytochrome b; *Clarias gariepinus*; *C. batrachus*