Identification of Pathogenic and Multidrug Resistant Bacteria in Some Selected Fruits from Major Fruit Markets in Ibadan

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Certification

This is to certify that **Oluwatosin Abiye Adeniji** with matriculation number **LCU/PG/001748** carried out this research work titled **Identification of Pathogenic and Multidrug Resistance Drug Bacteria in Selected Fruits from Major Market in Ibadan** in the Department of Biological Science, Faculty of Natural and Applied Sciences, Lead City University, Ibadan, Oyo state, for the award of Master Degree (M.Sc) in Industrial Microbiology and that this has not been previously submitted.

Dr. Felicia Adesina (Supervisor) — **Date**

Dr. Felicia Adesina (Head of Department) — **Date**

Dedication

This project is dedicated to God Almighty, who in His infinite mercy has granted my wish and also to my husband for his relentless support.

Acknowledgment

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Even though the above-mentioned institutions and persons have assisted in the process of this research work, I alone stand responsible for the errors, if any, found in the work

Table of Contents

List of Figures

List of Plates

List of Tables

Abstract

Multidrug resistance has been a great concern to human health. The occurrence of multidrug resistance among fruit pathogens has unfortunately increased during recent year. Hawking of whole fruit that has been divided into portions (fractional fruits) is very common in Ibadan metropolis and this practise exposes fruits to more microbial colonization. Also, to keep the fruits from spoilage, they are subjected to different preservative treatment, thereby subjecting the microbes on the fruit to challenging environment that may elucidate acquisition of new genes. Eighteen fruit samples of pawpaw(6), watermelon(6) and pineapple(6) hawked in fractions were purchased in order to enumerate mesophilic bacteria in them using standard methods. Heavy metal analysis was also carried out on the fruit using dry digestion method. The isolated bacteria were identified by their colonial, morphological and biochemical characteristics. Pathogens among these bacteria isolates were selected using based on their haemolysis on blood agar medium and the antibiotic suspectibility of the pathogens were determined by kirby-Bauer disk diffusion method on Muller Hinton agar medium. Heavy metal in all fruit samples was less than permitted limit and within the reference range with the exception of Lead which is greater than reference range. Based on methods used, thirty six bacteria strains were obtained and identified as *Staphylococcus cerus, Streptococcus spp., Bacillus substilis Pseudomonas spp, Salmonella spp, Bacillus cerus* Hemolysis test 14 strains to be pathogenic, eight of them where resistant common antibiotics used. However two strains of *Bacillus cereus* were highly multidrug resistant among all the strains obtained. *Bacillus cereus* is a food borne pathogen, capable of secreting toxins in human system, this result calls for serious public health concern.

Keywords: Fruits**,** Haemolysis, Antibiotic Resistance, Fractionated Fruits, Ibadan, *Bacillus cereus*

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