

UNIVERSITI TEKNOLOGI MARA

THE ISOLATION AND DETECTION OF PATHOGENIC BACTERIA IN 'NASI LEMAK DAUN PISANG' IN PUNCAK ALAM

HAZIRAH BINTI RAZALI

BACHELOR OF ENVIRONMENTAL HEALTH AND SAFETY (HONS.) FACULTY OF HEALTH SCIENCES

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Declaration by Student

Project entitled "Isolation and Detection of pathogenic bacteria in Nasi Lemak Daun Pisang in Puncak Alam" is a presentation of my original research work. Wherever contributions of others are involved, every effort is made to indicate this clearly, with due reference to the literature, acknowledgement of collaborative research and discussions. The project was done under the guidance of Tuan Hj Mohd Pozi Bin Mohd Tahir as Project Supervisor and Mr Mohd Fahmi Bin Mastuki as co-supervisor. It has been submitted to the Faculty of Health Sciences in partial fulfilment of the requirement for the Degree of Bachelor in Environmental Health and Safety (Hons.)

Student's signature:

(Hazirah Binti Razali) 2011253486 890521-14-5676

Date: 317/2018

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Bismillahirahmannirrahim.

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ABSTRACT

Foodborne disease has become one of the major problems not only in Malaysia but throughout the global where it is caused by bacterial contamination which lead to food poisoning. Nasi Lemak Daun Pisang are chosen in this studies because of the demand not only during morning for breakfast but also during night for supper. So it is crucial to conduct a studies because of its daily demand and the availability. The objectives of this study was to isolate and identify any potential bacteria that can cause food poisoning from Nasi Lemak Daun Pisang in Puncak Alam as well as to determine the prevalence. A total of 60 Nasi Lemak Daun Pisang were studied for the presence of pathogenic bacteria such as S. aureus, E.coli, Salmonella spp, Camplylobacter spp, Bacillus cereus, Shigella spp, Pseudomonas spp, Klebsiella spp and Proteus vulgaris. Using stomacher (25 g) of each sample was homogenized. It was serially diluted up to 10⁻⁴ using 0.1 % peptone water as diluent. The dilutions were first inoculated on nutrient agar for Aerobic colony count (ACC) using Surface-Spread Plate technique and plate were inoculated for overnight at 35°C. Colony were selected from dilutions that have ranged between 30-300 and inoculated on Blood, Emb, Macconkey and Myp agar for isolation and identification of bacteria. The identification of the bacteria were determined by their morphology, cultural characteristics and biochemical profile. Bacteria load ranged from ACC were 3.25×10^3 to 1.0×10^7 cfu/g. Among all sources of samples are categorized in borderline results except for Sample 3 from Mesra, Petronas which results in unsatisfactory condition as according to the Centre for Food Safety, Food and Environmental Hygiene Department Guidelines 2014 and ICMSF Guidelines 1980. Among Gram-negative rods E.coli (20 %) were isolated most frequently followed by Shigella spp, Klebsiella pneumonia, Salmonella spp as each carry (15%) and Proteus vulgaris (10%). Staphylococcus aureus was majority isolated from all samples. This study reveals that Nasi Lemak Daun Pisang carry high potential of bacterial contamination and it is suggested that in a future to conduct a study on different packaging of Nasi Lemak and its variety of ingredient which might contribute different genera of bacteria isolated. Improvement on proper monitoring throughout the processing of food may reduce the contaminations.

Keywords: Serial dilutions, ACC, Bacterial load