



UNIVERSITI PUTRA MALAYSIA

**ISOLATION AND IDENTIFICATION OF FOODBORNE PATHOGEN IN
CHICKEN DISHES FROM SELECTED STALL AROUND SERDANG
AREA**

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PENGESAHAN

Dengan ini adalah disahkan bahawa projek yang bertajuk “ISOLATION AND IDENTIFICATION OF FOODBORNE PATHOGEN IN CHICKEN DISHES FROM SELECTED STALL AROUND SERDANG AREA” telah disiapkan serta dikemukakan kepada Jabatan Mikrobiologi oleh Nur Maisarah binti Ahmad Jailani (161049) sebagai syarat untuk kursus BMY 4999 projek.

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ABSTRACT

Everyone need food. But, due to the improper handling during the preparation of the food, it may lead to foodborne illness. Foodborne illness already become one of the major issues worldwide because not only it gives bad effect to the health problem, it may also give a negative impact towards economy. This illness can be transmitted during the intake of food that contain sufficient number of foodborne pathogen. In this study, two cooked chicken dishes were collected from different randomly chosen food stalls in Serdang area. The samples are chicken cooked in coconut gravy and chicken cooked with chili paste. The conventional method were used to analyse the food samples for foodborne pathogen. The identification of unknown bacteria isolates were done by using 13 different biochemical tests. From a total of 25 isolates, four were detected as *Bacillus cereus*, *Corynebacterium xerosis*, *Micrococcus luteus* and *Enterobacter aerogenes*. From a total of four organisms detected, two of them were foodborne pathogens; *Bacillus cereus* and *Enterobacter aerogenes*.

ABSTRAK

Semua orang memerlukan makanan. Tetapi, akibat daripada cara yang tidak betul dalam pengendalian penyediaan makanan, ia boleh membawa kepada penyakit bawaan makanan. Penyakit bawaan makanan sudah menjadi salah satu isu utama di seluruh dunia kerana bukan sahaja ia memberi kesan buruk kepada masalah kesihatan, ia juga boleh memberi kesan negatif terhadap ekonomi. Penyakit ini boleh disebarluaskan dengan pengambilan makanan yang mengandungi jumlah patogen bawaan makanan yang mencukupi. Dalam kajian ini, dua hidangan ayam yang sudah dimasak di ambil dari gerai berbeza yang dipilih secara rawak di kawasan Serdang. Sampel makanan yang diambil adalah ayam masak lemak dan juga ayam masak sambal. Teknik pengkulturan konvensional digunakan untuk menganalisa sampel makanan jika terdapat sebarang patogen. Identifikasi bakteria yang tidak diketahui dijalankan dengan menggunakan 13 jenis ujian biokimia yang berbeza. Daripada keseluruhan 25 bakteria yang tidak diketahui, empat dikenalpasti sebagai *Bacillus cereus*, *Corynebacterium xerosis*, *Micrococcus luteus* dan *Enterobacter aerogenes*. Daripada empat organisme tersebut, dua daripadanya dikenalpasti sebagai patogen bawaan makanan.

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CHAPTER 1

INTRODUCTION

Malaysia is known as a country of food-loving peoples. Despite the varieties of food found here, the foodborne disease has arisen as one of the health problems. One of the major causes of this problem comes from the unhygienic practice of food preparation and food serving leading to food contamination. Tropical climate in Malaysia and high moisture content in air is also another factor that favor for rapid bacteria growth.

As reported by the World Health Organization (WHO), foodborne diseases are responsible for the high levels of morbidity and mortality in the general population and especially in immunocompromised groups of people. These groups include infants and young children, the elderly, pregnant women, patients undergone organ transplant, and patients undergoing chemotherapy (WHO, 2014; Al-Hijazeen et al., 2014). Several foods like ground meats are identified as a vehicle for transmission of enteric pathogenic bacteria to humans (Al-Hijazeen et al., 2014).

The health problems caused by foodborne pathogens have become a serious issues nowadays. In Malaysia, food sell at open stall was associated with many cases of food poisoning and a number of deaths. It is hypothesized that food sell at open stalls is contaminated by microorganisms and probably the foodborne pathogens. To test this hypothesis, Serdang town (the first green town in Malaysia) is chosen to be the area of interest to test the hygiene level of food sell at the open stall.

In this study, chicken dishes bought from randomly chosen open stalls were used as the source to sample for food pathogen. Several tests were done to identify the microorganisms grown from the chicken sample. The microorganism is then classified to be either foodborne pathogen or not.

Thus the objectives of this study are:

- 1) To screen for any foodborne pathogens from chicken dishes at selected stall in Serdang area
- 2) To identify the common foodborne pathogens found in the food (if any)
- 3) To evaluate the hygienic level of food sell at open stall in Serdang area

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