

**UNIVERSITI TEKNOLOGI MARA**

**OCCURRENCE AND ESTIMATION OF  
AFLATOXINS EXPOSURE IN RICE IN  
SELANGOR, MALAYSIA**

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**Project paper submitted in partial fulfilment requirements for  
the degree of Bachelor in Environmental Health and Safety**

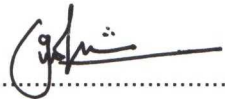
**Faculty of Health Sciences**

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## Declaration by Student

Project entitled “**Occurrence and Estimation of Aflatoxins Exposure in Rice in Selangor, Malaysia**” 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, and acknowledgement of collaborative research and discussions. The project was done under the guidance of **Dr. Mehdi Sameni** as Project Supervisor and **Dr. K. Subramaniam** 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).

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## ABSTRACT

### Occurrence and Estimation of Aflatoxins Exposure in Rice in Selangor, Malaysia

Anis Nabilah Binti Norahmad Zaki

**Introduction:** Aflatoxins are a group of naturally occurring mycotoxins which produced by *Aspergillus flavus* and *Aspergillus parasiticus* and can be found in a large variety of food and animal feed. Rice is the most important staple food crop in Malaysia and the main source of carbohydrate.

**Objective:** The aim of this study was to investigate the occurrence and concentration of aflatoxins (B<sub>1</sub>, B<sub>2</sub>, G<sub>1</sub> and G<sub>2</sub>) in rice and to evaluate the daily intake of this toxicant from rice consumption.

**Methodology:** Rice samples were collected from four different cities of Selangor province including Klang, Kuala Selangor, Petaling and Gombak. The occurrence of aflatoxins was investigated in 96 rice samples. Analyses were done using LC-ESI-MS/MS.

**Result:** The total positive sample of aflatoxins B<sub>1</sub>, B<sub>2</sub>, G<sub>1</sub> and G<sub>2</sub> was 42.71% in concentrations ranged from 1.330 to 4.452 ng/g. The average daily intake estimated for total aflatoxins was 28 ng/kg body weight.

**Conclusion:** The results showed that 42.71% of total analysed rice samples were contaminated with aflatoxins. Considering the tropical weather in Malaysia, rice stored under this condition is very susceptible to aflatoxins contamination.

**Keywords:** Aflatoxins, Rice, Food safety, LC-ESI-MS/MS