UNIVERSITI TEKNOLOGI MARA

Aluminium in Baked Chicken Wrapped in Aluminium Foil

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Project paper submitted in partial fulfillment of the requirements for the degree of Bachelor in Environmental Health and Safety (Hons.)

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Declaration by Student

Project entitled "*Aluminium Content in Baked Chicken Wrapped in Aluminium Foil*" 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 Tuan Haji Hashim Bin Ahmad as Project Supervisor. It has been submitted to the Faculty of Health Sciences in partial fulfillment of the requirement for the Degree of Bachelor in Environmental Health and Safety (Hons).

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Abstract

Aluminium in Baked Chicken Wrapped in Aluminium Foil

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Introduction: Aluminum is the most abundant metal found in the earth's crust. Food is the main source of aluminum intake. Aluminum in the food supply comes from natural sources, water used in food preparation, and food additives. Some aluminum is present naturally in most foods (Soni et al., 2001) Daily intake by humans is estimated to be 1-10 mg. Nowadays, it is common practice to wrap meat and fish and grill or cook them in the oven in order to prevent water uptake and avoid direct heat. The widespread use of aluminium foils makes them a significant potential source of dietary aluminium. **Methodology**: Chicken were cut into 15 portion. Raw sample of chicken were analysed to determine the natural concentration of aluminium in the chicken. Chicken then wrapped in aluminium foil and another portion were added with 10 ml lemon juice and being baked in microwave in three different condition (150 ^{0}C for 60 minutes, 200 ^{0}C for 40 minutes and 250 ^{0}C for 20 minutes). Aluminium concentration in the baked chicken were then analyzed using GFAAS.**Result:** The study found that there are significance difference ($P<0.05$) in the mean value of aluminium concentration in chicken wrapped in aluminium foil with the aluminium concentration in the raw sample. The study also found that the value of aluminium concentration in chicken that has been added with lemon juice are higher than the chicken only wrapped with aluminium foil ($P<0.05$). There are also significance difference ($P<0.05$) of aluminium concentration in chicken baked in those 3 condition. **Conclusion:** In conclusion, there are leaching of aluminium from aluminium foil into the baked chicken. There were increase of aluminium concentration in baked chicken wrapped with aluminium foil compared to the concentration of aluminium in the raw sample of the chicken meat. Other than that,cooking with low pH or in acidic condition has increase the aluminium leaching into the food.

Keywords : *Aluminium, Aluminium foil, pH, chicken meat*