فرم چکیده سخنرانی ژورنال کلاب دانشجویان دکترا

گروه مهندسی بهداشت محیط-دانشکده بهداشت

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عنوان مقاله:

Effects of oil types and pH on carcinogenic polycyclic aromatic

Hydrocarbons (PAHs) in grilled chicken

چکیده:

The effects of oil types and the pH of marinade were investigated on the formation of carcinogenic

polycyclic aromatic hydrocarbons (EPA priority 16 PAHs) in grilled chicken. The formation of PAHs in grilled chicken breast with different marinades after charcoal-grilling for 3 min/side was evaluated using high performance liquid chromatography with a photodiode array detector (HPLC-DAD). Compared with the control marinade treatment (without vegetable oil), the addition of commercial palm oil and sunflower oil that contained significantly different amounts of polyunsaturated and saturated fatty acids led to a significant (p < 0.05) increase in the PAH levels in grilled chicken from 190.1 mg/kg to 457.6 mg/kg and 376.6 mg/kg, respectively and there was only a slight difference between both oil marinade treatments due to the presence of antioxidant compounds in the commercial vegetable oils. The pH values of the marinade treatments for both acidic and alkali marinades using citric acid and sodium bicarbonate, respectively, produced the highest pH value (7.51, alkali marinade) which resulted in a major increase of more than 70% in the PAH levels in grilled chicken. The results of this study suggested that the addition of oil and/or alkali ingredients in the marinade could be important in increasing the levels of PAHs in grilled

meat products.