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Online HPLC analysis of antioxidant activity in tea extracts for study on Chinese drinking-tea habits

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China is the one of birthplace of tea culture and the processing of tea or the drinking method of tea are both tea's native habitats. Tea is featured by their health beneficial, refreshing and thirst quenching effects. However, people's tea-drinking habits changed as the times. Drinking tea with a scientific way is a worthy and usefule problem to us from the past to the present. This study seeks to explore the different antioxidant activity of five kinds of tea by pouring hot water into tea many times which is based on people's tea-drinking habits. The result showed that antioxidant substance of green tea is significantly higher than in white tea, oolong tea, black tea and dark tea by online ABTS+ test, on the other hand, the antioxidant activity of the tea extracts was decreased with the increasing times of making tea. In the end, the main antioxidant substances of tea were quantitatively determinate by LCMS. The major findings suggested that: Both tea had powerful antioxidant capacity; green tea showed the higher antioxidant capacity than others and; four times of pouring hot water into tea was enough to drink by evaluation of antioxidant capacity of tea extracts. This study is usefule for drinking tea in a scientific way.

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Prevalence of fungi and mycotoxins in cocoa beans from cocoa producing areas of Ogun state, Nigeria

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Dried cocoa beans are susceptible to spoilage by filamentous fungi with consequent mycotoxins production which has significant effects on public health and hence food safety. In this study, the prevalence of fungi and mycotoxins in dried cocoa beans in Ogun state Nigeria as basis for quality and safety assessment for international trade was evaluated. Cocoa samples were randomly collected from (75 registered cocoa stores) the cocoa producing areas (Yewa, Ijebu and Egba) in the state and the storage conditions were noted. Fungi were isolated, counted and pure isolates were obtained which were characterized and identified using molecular methods. Also, aflatoxin and ochratoxin were extracted from the cocoa samples with suitable solvents and quantified using enzyme-linked immunosorbent assay. The results showed that the fungi count of the cocoa beans samples from all sampling areas were significantly different (P 0.05). The highest count of 2.0x106 cfu/g, and the least count of 0.2 x106 cfu/g were found in cocoa samples from (Yewa area and Egba area respectively). The dominant species of fungi isolated and identified from the cocoa samples were *A. fumigatus, Penicillium notatum, A. niger, Fusarium verticillioides, and A. flavus with Aspergillus* species as the most prevalent species. *A. oryzae* and *A. nidulans* were also identified from some of the samples while the phylogenetic analysis of the fungi sequences and their evolutionary traits revealed the genetic diversity of DNA composition among the *Aspergillus* strains that were isolated. The total aflatoxin concentration found in the cocoa samples ranges between 17.5 and 20.5 ppb while the total ochratoxin concentrations were between 15.0 and 11.9 ppb. The study established the presence of toxigenic fungi as well as their toxins (aflatoxin and ochratoxin) in cocoa beans from cocoa producing areas in Ogun state Nigeria.

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