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Analysis of Tea Polyphenols Using Differential Pulse Voltammetry and High Performance Liquid Chromatography

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Oral Presentation O12.1

ANALYSIS OF TEA POLYPHENOLS USING DIFFERENTIAL PULSE VOLTAMMETRY AND HIGH PERFORMANCE LIQUID CHROMATOGRAPHY

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Tea is currently the second most popular beverage in the world, with only water being consumed more. For centuries, people have consumed tea for the taste, but as of late, it has been consumed for its medical benefits. Teas contain organic compounds known as polyphenols that have been shown to act as antioxidants in the body. The focus of this research was on analysis of these polyphenols. In order to do this, different types of teas, all of which come from the same plant, were brewed. These teas are white, green, oolong, and black. A number of other flavored teas and blends were looked at as well. In looking at the teas, there were several things that we looked for. We wanted to know the differences in the total amount of polyphenols present in each of the teas, the types of polyphenols present (along with how much of each was in the teas), as well as whether or not these polyphenols would decay over time. Previous work involved a number of spectroscopic techniques, but recent studies on teas has involved the use of differential pulse voltammetry, which is able to directly measure the reduction potentials of the polyphenols in order to better quantify their concentrations. High performance liquid chromatography is also being used which will separate out each individual polyphenol and help us to identify which ones are present in the teas. There are no definitive results that have arisen yet, and so work on the teas will continue into the foreseeable future.