Introduction

Beer is a highly complex beverage that contains a diversity of substances from the hops, barley, and yeast. Among these, bitter acids are of primary interest. The two types of bitter acids in beer are 3,3-dimethylfuran-2-carboxylic acid (3,3-DMFCA) and 3,3-dimethylfuran-2-carboxylic acid (3,3-DHCA). These compounds are produced during fermentation and storage, and contribute significantly to the flavor and aroma of beer.

Data Analysis

The analytical figures of merit for this assay were described previously. The limits of quantification were 200 µg/g for both the ECD and UV methods. The Beer 1 and Beer 2 compounds were quantified in the Beer 1 and Beer 2 samples at levels of 100 µg/g, and the Beer 3 compound was quantified in the Beer 3 sample at a level of 1 µg/g.

Gradient HPLC with diode-array detection and electrochemical array detection was used to measure numerous phenols, phenolic acids and polyphenols in beer and other samples. This approach was used to measure beer stability over a two week period. This approach was used to measure the ability of various analytes to be detected in the presence of other analytes.

Results and Discussion

The Spectra-Effects therapy makes use of both spectrophotometric and electrochemical methods. The latter provides identification and quantitation of the latter component in a sample at an excitation wavelength of 500 nm and a detection wavelength of 600 nm. The data for the stability of a variety of analytes in an Ultra IPA sample tested over a two week period are presented in Figure 1. It is evident that the analytes were stable in the samples over the period of measurement.

Conclusions

The polyphenol method can be used as a standard approach to accurately and sensitively measure terpenoids, phenols, acids, and polyphenols in beer and other samples. The electrochemical method can be used to measure the stability of various analytes in the presence of other analytes.

References
