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Abstract

Live Poster Session

Major: Chemistry

Faculty Mentor: Brian Bellott

Flavonoid Concentration Determination of Soybeans

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The objective of this research is to determine the specificity and concentration of flavonoids which are present in soybean. Crude soybean samples are used and analyzed in sodium acetate as a medium used to isolate the flavonoids and reduce interference from other components. The flavonoids are extracted with methanol and the absorbance of the flavonoid supernatant solution is analyzed with the use of ultraviolet-visible light (UV-Vis) spectroscopy. UV-Vis spectroscopy is used to determine the absorbance vs. concentration ratio of the flavonoids in the solution and to determine a standard concentration curve. Soybeans have the scientific nate of Glycine mas L. Merr and are an edible legume which originate from east Asia. Soybeans have a variety of different uses which include human and animal consumption and many inedible items as well. There are many different active compounds in soybeans, one of which is flavonoids. Flavonoids are important because they have been found to provide many different health benefits. Flavonoids have been linked to helping reduce the risk of heart disease, high cholesterol and even breast cancer. They have also been linked to preventing cardiovascular disease, osteoporosis and different types of cancers. Flavonoid properties are similar to those of antioxidants and can be thought of as acting like hormones in plants, like estrogen, and demonstrate many of the same benefits for humans as hormones do. In plants and fungi, flavonoids act as secondary metabolites. This research has benefits because creating a protocol which can be used to determine the concentration of flavonoids in different types of soybeans can provide better insight into the health benefits of soybeans.