

Food Science & Nutrition

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The science of food encompasses food science, food technologies, and their applications across the food industry. Learn more about this exciting field and the positive impact in keeping our food safe, nutritious, delicious, and sustainable. Food science draws from many disciplines, including biology, chemical engineering, and biochemistry to better understand food processes and improve food products for the general public. As the stewards of the field, food scientists study the physical, microbial, and chemical makeup of food. They apply their findings to develop the safe, nutritious, and sustainable foods and innovative packaging that line supermarket shelves today. Determination of phytohormones have attracted increasing attentions in food safety field. In this study, an efficient and quantitative method was developed which can simultaneously determinate thirteen phytohormones in fruits and vegetables using solid phase extraction (SPE) combined with high performance liquid chromatography–diode array detection (HPLC–DAD). The samples were extracted with 80% methanol containing 0.5% (V/V) formic acid, and the extracts were then concentrated and purified using primary secondary amine (PSA) and C18 tandem dual SPE cartridges. The analytes were separated on a Waters XBridge™ C18 column and eluated utilizing a gradient elution program of water and methanol. Mean recoveries of the thirteen analytes varied from 74.69 to 92.40%, with relative standard deviations < 3.57%. The limits of detection and quantitation were 0.005–0.018 mg/kg and 0.02–0.10 mg/kg, respectively. The phytohormones in kiwi fruit, strawberry, bean sprout, and green pepper were detected using the above method, respectively. Only the IAA content of 0.14 mg/kg was detected for the strawberry from a supermarket, which was lower than the prescribed limit in food safety standards (0.2 mg/kg). Food Science and Technology is an exciting multidisciplinary field that prepares students with a comprehensive knowledge of the biological, physical and engineering sciences to develop new food products, design innovative processing technologies, improve food quality and nutritive value, enhance the safety of foods and ensure the wholesomeness of our food supply. Food Science majors apply the principles learned in the basic sciences such as food chemistry, biochemistry, genetics, microbiology, food engineering and nutrition to provide consumers with safe, wholesome and attractive food products that contribute to their health and well-being. The undergraduate curriculum is approved by the Institute of Food Technologists

(IFT) and offers two tracks, a Food Science Option and an Industry Option. These tracks provide promising career opportunities in areas such as food product/ process design, technical service, research and development, quality assurance, food safety, food law, regulatory oversight, technological innovation, marketing, corporate sales, sensory evaluation, and operations management. There are numerous opportunities available for corporate internships, scholarships and study abroad programs that provide real-world experience and enhance opportunities for employment after completing a baccalaureate degree. Food Science Option The Food Science option provides a strong knowledge base and fundamental understanding of chemistry, biology, engineering, physics, statistics, genetics, biochemistry, microbiology, and nutrition that is applied toward the preservation, processing, packaging and distribution of foods that are wholesome, affordable and safe. The goal of the curriculum is to prepare Food Scientists for career opportunities in food and allied industries, or for further studies in graduate or professional schools. See an academic advisor for specific course listings. Food Science Degree Plan, Food Industry Option The Food Industry option integrates knowledge from the basic disciplines of chemistry, microbiology, physics and biology and applies scientific principles from food engineering, food processing operations, sensory evaluation, food safety, HACCP, quality assurance and management to produce foods that are wholesome, affordable and safe. The goal of the curriculum is the prepare Food Technologists for careers in food and related industries. These careers may involve food processing, manufacturing, technical service, food product development, operations management, regulatory oversight and other technology based opportunities. Phenylpropanoids and their derivatives are plant secondary metabolites widely present in fruits, vegetables, cereal grains, beverages, spices and herbs. They are known to have multifaceted effects which include antimicrobial, antioxidant, anti-inflammatory, antidiabetic, anticancer activities and as well as exhibits renoprotective, neuroprotective, cardioprotective and hepatoprotective effects. Owing to their antioxidant, antimicrobial and photoprotective properties, these compounds have wide application in the food (preservation, packaging films and edible coating), pharmaceutical, cosmetic and other industries such as textile (colorant), biofuel (antioxidant additive) and sensors (sensing biologically relevant molecules). Phenylpropanoids are present in commercially available dietary supplements and skin care products.