

İTÜ FEN BİLİMLERİ ENSTİTÜSÜ DERS TEKLİF FORMU

Dersin Adı	Gıda Analizleri: Teori ve Uygulamalar
İngilizce Adı	Food Analysis: Theory and Applications
Dili	İngilizce
Türü	Zorunlu
Kodu	GID 521
Kredisi	(3-0) 3
Yarıyılı	Güz
Öğretim Üyesi	Prof. Dr. Artemis Karaali
Ön Koşulu	GID 221E, GID 232
Anabilim Dalı / Programı	Gıda Mühendisliği / Gıda Mühendisliği
Amacı	Provide a knowledge on analytical methods used to elucidate the composition of foods, their chemical and physical properties as well as to investigate their authenticity . Apply this knowledge with particular emphasis on analytical chemistry to food analysis by providing various examples for individual food commodity types.

İçerik

Introduction : Bodies engaged in food analyses, standards used, legislative aspects

Sampling and techniques : Related statistical concepts, types of samples and sampling, and sample handling

Proximate analysis for nutrition labelling : A compendium of all available methods for moisture, protein , lipid, carbohydrate analyses, as well as the analyses for quantifying and characterizing individual components of proteins, lipids and carbohydrates: the respective principles, procedures, applications, cautions for , advantages and disadvantages individual methods

Wet and dry ashing, low temperature plasma ashing, microwave ashing: principles and instrumentation, applications; post ashing procedures(alkalinity and solubility of ash)

Mineral analyses on ash: gravimetric, titrimetric, colorimetric methods, ion-selective electrodes, atomic absorption and atomic emission spectroscopies, ICP-AES

Analysis of Vitamins (bioassays, microbiological assays, physico-chemical methods, UV-vis spectrophotometry, fluorometry, liquid chromatography)

Enzymes: Determination of enzymic activity, applications of enzymes in other analyses as analytical aids

Contaminants : Mycotoxins, Pesticides, Animal drugs

Food additives: SO₂, Food dyes (qualitative and quantitative)

Analyses for Authenticity Testing

Analysis of Sensory Attributes: Objective Methods for Color and Texture Analyses

Student Presentations on selected topics

Kaynaklar

Nielsen, S.S. 1998. Food analysis. 2nd edition. Aspen Publishers, Gaithersburg, MD.

Pomeranz, Y. and C.E. Meloan. 1987. Food Analysis: Theory and Practice. The AVI, NY.

Nollet, L.M.L. 1992. Food analysis by HPLC. Marcel Dekker, NY.