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Analytical techniques in food safety

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Editorial

Food analysis is the control dealing with the study, development, application of analytical procedures for defines the properties of foods and their constituents. Analytical processing involves the interaction between analysts and collections of aggregated data that may have been reformulated into alternate representational forms as a means for improved analytical performance [1].

The most common analytical methods for food quality estimation are mass spectrometry (ms), capillary electrophoresis (ce), infrared spectroscopy (ir) usually coupled to liquid (lc) or gas chromatography (gc) and nuclear magnetic resonance (nmr) spectroscopy. The conditions of the analysis judge the best method. In selecting a method deliberation is given to some or all the following criteria: precision, accuracy, ruggedness, equipment, sensitivity, selectivity, robustness, scale of operation, ruggedness, analysis time, availability of and cost. For food analyses, the types of instruments used with nuclear magnetic resonance (nmr) and high-performance liquid chromatography (hplc), spectroscopy, atomic absorption spectroscopy (aas) gas chromatography (gc), and to name a few common examples. There are 3 types of analytical techniques are there: grouping methods, regression analysis and multiple equation models [2]. These are three stages of the data analysis process: clean, evaluate and summarize. The regulatory authority require extra tests such as taking the temperature at specified points to make sure it reaches the required temperature, passing the product through an x-ray or other machine to check for physical hazards, or taking microbial swabs to make sure the equipment is within the limits . Microbiological analysis of food products is the use of biochemical, biological, chemical methods and molecular for the identification, detection, or enumeration of microorganisms in a material (e.g. Environmental, food, drink, clinical sample). For detection and identification of microorganisms in cultures, both liquid and solid, liquid culture media are employed. Microscopes are usually used to descry microbes in cultures, and biochemical and serological techniques are used to changes of various organisms [3].

The microbial limit test (mlt) is performed to identify how many and which type of viable microorganisms are present in non-sterile pharmaceutical, healthcare or cosmetics manufacturing samples that range from raw materials to finished products.

Limit tests are a category of impurity tests in which an unknown sample is compared to a standard sample that contains the impurity at the product limit. These tests do not give quantitative results, only qualitative “pass/fail” results based on the specified limit [4].

Limit tests are carried out to determine the inorganic impurities present in product. Limit test of chloride is based on the reaction of soluble chloride with silver nitrate in presence of dilute nitric acid to form silver chloride, which shows solid particles (opalescence) in the solution.

Micro biological parameters should evaluate bacterial density, as well as the presence of mucoid morphotypes and strains that are multi-resistant or have a high capacity for transmission.

The mostly used microbiological count method is the standard plate count (spc) agar method. this method is used by the dairy industry for evaluating the microbial populations in most types of dairy products and samples and for determining quality and sources of contamination at successive stages of processing [5].

References

1. Gonzales, Barron, Ursula, and Francis Butler. "The use of meta-analytical tools in risk assessment for food safety." Food Microbiology 28, (2011): 823-827.
2. Rodríguez, Lázaro, David, Lombard B, et al. "Trends in analytical methodology in food safety and quality: monitoring microorganisms and genetically modified organisms." Trends Food Sci Technol 18, (2007): 306-319.
3. Scognamiglio, Arduini F, and Palleschi G. "Biosensing Technology for Sustainable Food Safety." Trac-Trend Anal Chem 62, (2014): 1-10.
4. Castro, Puyana, María, and Herrero M. "Metabolomics Approaches Based on Mass Spectrometry for Food Safety, Quality and Traceability." Trac-Trend Anal Chem 52, (2013): 74-87.
5. Socas, Rodríguez, Bárbara, and Sálamo JG, et al. "Recent Applications of Nanomaterials in Food Safety." TrAC Trends in Anal Chem 96,(2017): 172-200.

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