

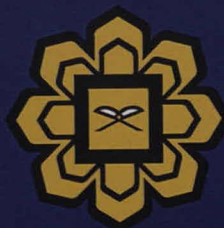
**EXPERIMENTAL METHODS
IN MODERN BIOTECHNOLOGY**

Editors

Ibrahim Ali Noorbacha

Mohamed Ismail Abdul Karim

Hamzah Mohd Salleh

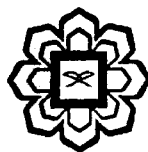


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Editors

Ibrahim Ali Noorbatcha
Mohamed Ismail Abdul Karim
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Fundamentals of Proximate Analysis In Food Products

Irwandi Jaswir and Asiyandi-Hammed Tawakalit Tope

1. Introduction

The term “proximate” in food analysis refers to the determination of major components (moisture, ash, carbohydrates, fat, fibre and proteins) and hence called “proximate analysis”. The components being analyzed are known as proximate constituents. The proximate constituents are not restricted to the components stated above. For instance, in acidic food, the acid content has to be considered as a proximate constituent. Proximate analysis gives inexpensive yet very vital information especially from the nutritional and biochemical point of views. The result is normally expressed in percentage, and because of the fairly general nature of test employed for the determination, the term ‘crude’ is usually used as a modifier, for instance, crude protein, crude fat and crude fibre. Proximate constituents therefore represent only a category of compounds present in a biological material. Analysis of particular element or compound, such as vitamins, reducing sugars, etc., is termed ultimate analysis. In other words, ultimate analysis is a more detailed analysis of proximate constituents. (Nielsen, 1998)

The aim of the chapter is to fully discuss various analytical methods of major food components, determination and the practical consideration. It is important to food scientists to determine proximate analysis of food raw-materials for a number of different reasons:

- *Food Quality.* The texture, taste, appearance and stability of foods depend on the amount of water and other components present in them
- *Legal and Labeling Requirements.* Legal limits are been set for the maximum or minimum amount of water which must be present in some particular types of food. Adequate control of composition of nutrients are monitored and required to be stipulated on the label of the food.
- *Economic.* The cost of many foods depends on the amount of water and nutritional components they contain since water is an inexpensive ingredient, manufacturers often tends to incorporate as much as possible in a food without exceeding some maximum legal requirement.
- *Microbial Stability.* The tendency of microorganisms to grow in foods depends on their water content, ash, sugar and fat are sometimes used to control microbial growth.
- *Food Processing Operations:* Knowledge of the moisture content and ash content is often necessary to predict the behaviour of foods during processing, e.g. mixing, drying, flow through a pipe or packaging. (Kavita, 2010).

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