

Preface

The Maillard reaction, first described by Louis-Camille Maillard in 1912, is a general description of a complex series of reactions involving the reaction of free amino groups, such as amines, amino acids, peptides and proteins, with carbonyl compounds, particularly reducing sugars. Despite nearly ninety years of research on the Maillard reaction, its products have only recently started to be identified and the mechanistic pathways leading to their formation are only gradually being elucidated.

The Maillard reaction is particularly important in food systems where the products of the reaction can be responsible for the aroma, taste and appearance of foods. It can also cause deterioration of food during food storage and processing, resulting in a decrease in nutritional quality through the formation of anti-nutritional and toxic compounds, the destruction of essential amino acids and reduced digestibility of food proteins. Many researchers in the food area find themselves faced with a symptom of Maillard chemistry and are bewildered by the complexity of the reaction that they must try and comprehend in order to solve a particular food-processing problem.

This text is designed to provide a 'one-stop' shop for such researchers, providing a gentle introduction to the Maillard reaction and its many consequences, before focussing on the various methodologies employed to analyse the reaction in food. We hope to have provided an introduction to the field to those new in the area, as well as extend the analytical repertoire of those who are more experienced.

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Christchurch, New Zealand, 2002

