

Biosensors as Analytical Tools in Legume Processing

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Abstract : The plight of food insecurity in developing countries has led to renewed interest in underutilized legumes. Their nutritional versatility, desirable functionality, pharmaceutical value and inherent bioactive compounds have drawn the attention of researchers. This has provoked the development of value added products with the aim of commercially exploiting their full potential. However processing of these legumes leads to changes in nutritional composition as affected by processing variables like pH, temperature and pressure. There is therefore a need for process control and quality assurance during production of the value added products. However, conventional methods for microbiological and biochemical identification are labour intensive and time-consuming. Biosensors offer rapid and affordable methods to assure the quality of the products. They may be used to quantify nutrients and anti-nutrients in the products while manipulating and monitoring variables such as pH, temperature, pressure and oxygen that affect the quality of the final product. This review gives an overview of the types of biosensors used in the food industry, their advantages and disadvantages and their possible application in processing of legumes.

Keywords : legume processing, biosensors, quality control, nutritional versatility

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