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Detection approaches for genetically modified organisms in foods

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Abstract

This review examines the various detection strategies for genetically modified organisms (GMOs) in food products. It begins with a brief discussion of the issues related to the technology especially the risks and public concerns. An introduction to the biological aspects of the major GMOs then follows. The bulk of the review is concerned with the different approaches toward detection: (a) PCR-based methods such as real-time, duplex and multiplex, (b) the use of biosensors and microarrays, (c) the presence of commercially available kits, and (d) other methods such as electrophoresis and wavelength-dispersive X-ray fluorescence. Each of these methods is critically discussed and various applications are described.

Keywords: Polymerase chain reaction; Biosensors; Kits; Genetically modified organisms; Microarrays