

**RAPID METHODS AND AUTOMATION IN FOOD MICROBIOLOGY:
THREE DECADES OF DEVELOPMENTS**

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Food safety and quality concerns, threat of emerging pathogens, epidemiological investigations of outbreaks of food borne illness and vendors and regulatory requirements have underscored the need for sensitive, selective and reliable methods in food microbiology for rapid detection and characterization of pathogens and toxins. Also, the sheer volume of samples to be analyzed and changing scope and structure of food microbiology laboratory has emphasized the need for rapid methods and automation in food microbiology. During the past three decades, many improvements have been made to the traditional methods to allow faster sample throughput, rapid detection and identification, improved accuracy, specificity, sensitivity, and selectivity, and convenience. Rapid methods and automation in microbiology is an important field of research and development in detection and monitoring of the number and kinds of microbes and their metabolites in context of food quality assurance- spoilage and shelf life, food processing and preservation as well as food safety and food protection. The main objective of this paper is to provide a retrospective overview of the developments in rapid methods and automation in microbiology over past three decades.

Keywords: Food safety, rapid methods, automation, pathogens, toxin

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