

New trends in postharvest molecular biology and biotechnology

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Abstract

This paper aims at giving the new trends in the area of molecular biology and biotechnology of fruit ripening. Fruit ripening is viewed as a genetically programmed process corresponding to the expression of ripening-related genes. Among the ripening-related genes some are involved in the biochemical changes occurring during the ripening process, others in the biosynthesis of hormones and signalling and others in the regulation of transcription. Post-harvest biotechnology has consisted in up- or down-regulating the expression of endogenous genes so as to modify the ripening process and understand the function of the gene *in vivo*. It has also consisted in introducing foreign genes in order to bring new characters. In the recent years post-harvest biology has entered into the “omics” period with the development of high throughput technologies such as transcriptomics, proteomics and metabolomics that require the use of bioinformatics methods. The sequencing of a number of fruit genomes has also been performed that give new and powerful tools for the molecular biologist, geneticist and physiologists.