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## Abstracts Book



## Food Microbiology & Biotechnology

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### NUTRITIONAL AND FUNCTIONAL AUDIT TO THE PROCESS OF FRESH-CUT STRAWBERRY

Ana Amaro<sup>1</sup>; Maria João Pereira<sup>1</sup>; Susana Carvalho<sup>1</sup>; Marta Vasconcelos<sup>1</sup>; Manuela Pintado<sup>1</sup>

<sup>1</sup>CBQF/Universidade Católica Portuguesa

From a nutritional and functional point of view it is important to understand the consequences of processing and storage in fresh-cut products composition in order to select the best technological conditions required for the preservation of fruits and vegetables health benefits. A nutritional and functional audit of postharvest handling systems and processing lines of a fresh-cut fruits enterprise was performed in order to generate recommendations that can optimize phytochemical preservation during processing. The effects of the production process upon the nutritional and phytochemical composition of strawberries was determined in order to validate the results obtained in real conditions and identify the critical points involved in the deterioration of the functional quality. Three replicated samples were collected at each step of the production flowchart of fresh-cut strawberries: at fruit reception, after calyxes removal, after decontamination and after processing. All samples were frozen with liquid nitrogen and stored at  $-80\text{ }^{\circ}\text{C}$  until analyzed for nutritional characterization. Total antioxidant activity was assessed by the ABTS method, total phenolics by Folin Ciocalteu's method and phenolic compounds and anthocyanins were analyzed by high performance liquid chromatography (HPLC-DAD). According the main processing plan for strawberries the effect of processing steps on the main nutritional and functional quality markers showed that total antioxidant capacity, total phenolic compounds and total anthocyanins contents were significantly affect at least by one of the steps. As processing advanced from reception to cutting, antioxidant capacity increased, with clear differences between processing phases. Intact and processed strawberries showed similar total phenolic compounds content while decontaminated strawberries showed the lower value for phenolic compounds level. Catechin was not significantly affected during different processing phases but epicatechin, rutin and ellagic acid were affected mainly after calyxes removal and cutting. Total anthocyanins were also affected by all processing steps with cutted strawberries showing the lowest values. Cyanidin-3-glucoside and pelargonidin-3-rutinoside were not affected by processing while pelargonidin-3-glucoside changed after decontamination and cutting phases.