S02.476
Changes in Chemical Composition during Cold-Storage of Several Peach Cultivars (*Prunus persica*)

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Peaches are a perishable food as their metabolic activity persists after harvest. Long-term storage is only possible at low-temperature storage. This low temperature during storage is one of the main tools to reduce the postharvest deterioration, maintaining the overall quality and the nutritional value of fruits, since diminish metabolic activity of produce, reduce the respiration rate and in consequence slow down ripening. However, the storage potential is depending on the cultivar. Fruit of 'Early Rich', 'Sweet Dream', 'Elegant Lady', 'August Red', and 'Royal Glory' cultivars were picked in Alcarras (Segrià, NE Spain) and stored under air atmosphere at -0.5 ºC for 10, 20 and 40 days and analysed after remaining 3 days at 20 ºC (shelf-life). Effects of cold-storage and shelf-life period on physicochemical parameters and aroma volatile compounds have been studied. The physicochemical parameters studied were: weight, calibre, titratable acidity, soluble solids content, flesh firmness and skin and flesh colour. A partial least square regression model (PLS1) was run, in an attempt to correlate volatile compound emission and standard quality parameters as X-variables to consumer's acceptance studied as Y-variable, and thus to find the variables having most weight on the discrimination between cultivars and storage period. This regression model was able to explain up to 86% of total variability in the consumer's acceptance 2-ethyl-1-hexenal, propyl hexanoate, titratable acidity and soluble solids content were the variables found more consistently with a positive correlation with consumer's acceptance.

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Carotenoids and Aromatic Profiles of Watermelons with Different Colors in Flesh

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Watermelons (*Citrulluis vulgaris* Schrad) are of different colors in their flesh, such as white, red or pink, yellow, orange etc. In our research, mature fruits of 12 watermelon cultivars with different colors in flesh were subjected to HPLC, GC and GC-MS analysis to determine and quantify their compositions and contents of carotenoids, soluble sugars, organic acids and aromas. In the investigated watermelons, eight cultivars of red flesh, three of yellow flesh and one of orange flesh were selected. Results showed that violaxanthin, zeaxanthin and their esters were main carotenoids in yellow flesh watermelons. Red flesh watermelons were rich in all trans-lycopene, cis-isomers of lycopene, phytoene and ß-carotene. However, phytoene, ß-carotene and its cis-isomers took up large percentage in total carotenoids in orange flesh watermelons. In addition to above carotenoids, lutein and α-carotene were also found in flesh of watermelons. Though the contents varied largely among cultivars, sucrose was the most abundant soluble sugar in flesh of most watermelons with the highest found in a red flesh cultivar of Nongkang Xiangfeng as 635.69 mg/g in average, fructose second to it. However, contents of fructose kept stable among cultivars, which changed within a range of 118.04-175.40 mg/g DW. Other soluble sugars such as glucose and raffinose were also determined. Citric acid and malic acid were main organic acids found in flesh of watermelons, other than that, quinic acid, tartaric acid and oxilic acid was detected. In their aromatic profiles, alcohols and aldehydes served as main components, special aromas such as limonene was detected in yellow flesh cultivars. The relationships between aromatic and carotenoids profile, between carotenoids and soluble sugar profile were undergoing analysis to illustrate their interactions at the biochemical view.

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Storage of Half-Finished Fruit and Berry Products

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The great significance of fruits and berries in human's diet is determined by the physiologically active matters in them. Practically it is not possible to preserve berries fresh for a long time therefore it is necessary to consider their processing. Fresh fruits and berries grown in Latvia, were investigated and analysed after harvesting. Food quality and safety issues depend on the quality of raw stuffs and half-finished products. Desserts prepared from fruit and berries are products, quality of which depends on storage conditions of half-finished products. Content of vitamin C was used as an index of quality during storage. The nutritive value of biologically active substance is retained while the organoleptic indices worsen only a bit. The objective characterization of physical properties of products allowed evaluating quality, to incorporate it into technological regimes of the treatment. The temperature of storage was constant during the whole experiment. Decrease of the amount of ascorbic acid is considered to be the indicator of the oxidation process of the product. Researches proved that in a low temperature the decrease of the amount of vitamin C in fruit takes place slowly. The decrease of losses is mainly insured by quick cooling. Fruits and berries are the main providers of biologically active substances for human's organism. Cooling allows to eliminate the seasonal nature of their consumption. The seasonal climatic conditions of Latvia hinder proper nutritional balance. Widening the assortment of frozen fruit and berries is one of the ways to improve the diet. At present in Latvia several aspects of qualitative changes during the cooling process have not been elaborated and sufficiently developed in practice. Processing of food products prolongs their storage time. Both physical and chemical treatment methods were applied in the research.

S02.479
Maturation Characterization of Black Sigatoka Resistant Bananas

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This work aimed to characterize the physical, chemical, and physiochemical aspects of the bananas maturation ('Thap Maeo', 'Caipira', 'Pakovan Ken' and 'Preciosa') resistant to Black Sigatoka (*Mycosphaerella fijiensis* Morelet), seeking to develop technology for the postharvest conservation. Bananas were picked (Stage 1) at an experimental orchard (Ceará, Brazil), and transported to Embrapa Tropical Agroindustry (± 240km), where they were stored at 21±2 ºC and 85±5% UR, until they were completely ripe (Stage 7). During that period, the color of the peel was evaluated daily and when changes happened, indicative of a stage change, the physical aspects (fruit weight, peel weight, and finger drop) were analyzed. After these evaluations, the peels were separated for chlorophyll and carotenoids analysis. The pulps were homogenized and stored in a freezer for later quantitation of total sugars, starch, pH, titratable acidity and soluble solids. The experimental design was completely randomized, with three repetitions and four fruits per repetition, being the data submitted to analysis of variance and the averages compared by Tukey test ($p<0,05$). The ripening of these bananas followed the characteristic pattern observed in bananas not resistant to Black Sigatoka. This pattern is characterized by the maintenance of the total weight; but with reduction on peel weight and thickness, and the increase of pulp weight, suggesting a transfer of mass from peel to pulp. The chlorophyll decreased strongly as the ripening progressed making already existent carotenoids evident, once significant increase was not observed ($p<0,05$). In general, the soluble solids, total sugars, starch, and titratable acidity presented significant differences ($p<0,05$), indicating the change of stages of maturation of those bananas. A difference in finger drop resistance could be verified in the analyzed hybrids.