

## P15 > THE IMPACT OF 1-MCP TREATMENT ON MAL D 1 SYNTHESIS DURING STORAGE OF APPLE FRUIT

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The in Central Europe and North America most important apple allergen is Mal d 1, a protein which belongs to the so called pathogenesis-related proteins (PR-10), subgroup 10. PR-10 are synthesized in response to environmental stress, pathogens and wounding. Several studies investigated a higher allergenicity of apple fruit after storage, which is due to higher Mal d 1 concentrations. For climacteric fruit, such as apple fruit, ethylene is a key regulatory molecule for ripening and senescence. The higher allergenicity might be related to ethylene action during storage. Synthetic cyclopropenes, like 1-methylcyclopropene (1-MCP), are inhibitors of ethylene action. The commercial use of 1-MCP has the potential to extend storage periods and quality of plant products, if applied in an

optimal stage of ripeness. The aim of the study was to evaluate if 1-MCP application can decelerate Mal d1 synthesis during storage. Therefore fruits of 4 cultivars were stored for 8 and 12 weeks in a cold chamber (2°C) and under controlled atmosphere conditions. Half the fruits were treated with 1-MCP, for evaluating the influence of this ethylene inhibitor on Mal d 1 synthesis.

1-MCP treatment decelerated the Mal d 1 synthesis in stored fruit of different cultivars. This could especially be seen during the first 8 weeks of storage. Mal d 1 synthesis started again if fruits were further stored. This may be due to the synthesis of ethylene receptors.

## P16 > EVALUATION OF COCONUT WATER PRESERVED BY DIFFERENT PROCESS

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Coconut water is much consumed in Brazil due to its refreshing and tasteful characteristics. It presents a good balance on sugar and acid contents, which attracts consumers, and contains minerals and phenolics compounds, being a natural healthy drink. Its industrialization faces some challenges due to the presence of polyphenoloxidase (PPO) and peroxidase (POD) enzymes that cause its color change. The objective of this work was to evaluate the differences in coconut water characteristics according to their conservation process. Raw materials were fresh coconut water, directly extracted from the fruit, and two commercial samples, acquired in regular market: a bottled cold preserved coconut water and an ultra-high temperature (UHT) preserved water, containing preservatives. Enzyme activities were determined (PPO and POH), besides of phenolics, pH, soluble solids and acidity. Soluble solids content of coconut water was 6.4, 6.0 and 5.9°Brix, in fresh, cold and UHT preserved sample,

respectively, which is probably more function of variety and harvest time than processing method. Acidity and pH variation may be caused by processing as it is usual to add acidulants due to the high natural pH of this product (5.35 for fresh water against 5.00 of cold preserved and 4.70 of UHT preserved). Enzyme activity was also probably inactivated by processing, particularly PPO, which was not detected in the two processed samples, being 0.08 U/mL in fresh water. The POD activity was 0.80 U/mL in fresh water, 0.53 U/mL in cold processed one and was not detected in sterilized water. On the other side, phenolics content varied considerably in processed samples, from 5.31 mg/100g in fresh water to 0.95 and 0.51 mg/100g in cold and UHT preserved water, respectively. The results suggest that usual conservation processes are effective for inactivating enzymes although they need to be optimized for preserving coconut water characteristics.