

each MAP condition. Storage temperature always kept at 5 °C. All parameters are being analysed at 0, 5 and 10 days storage and are always compared with the results of sensory evaluations carried out by a trained panel searching for defects. Results obtained for cabbage and carrots show a beneficial effect of MAP on the evolution of chemical, physical and microbiological characteristics during storage, mainly for gas combinations with low O₂ and high CO₂, and low barrier packaging materials.

S02.283

Effect of Heat Treatment on the Concentration of Sugars Present in Murcott Tangerine Juice

Dutra, A. S.; Furtado, A. A. L.; Oiano-Neto, J.; Rosa, J. S.

EMBRAPA FOOD TECHNOLOGY, AV. DAS AMÉRICAS, 29501, 23020470, RIO DE JANEIRO, RIO DE JANEIRO, BRAZIL

The Murcott is from United States and its official name in that country is mandarin "Honey". Its fruits, known in Brazil as "Murcott" tangerine, are medium size, average weight of 140 g, are flat, with a small cavity in the central axis, with high potential for the production of juice as they present a juice yield around 50%. This work aimed to study the influence of pasteurization on the levels of sugar in the juice of "Murcott" tangerine. Samples of fresh juice were used as control. The fruits were properly washed and pulped. The juice obtained was centrifuged at 2000 rpm/15min, pasteurized in a heat exchanger surface scraped at 90 °C / 20s and 90 °C /40s and kept frozen until the analysis. The determination of sugars (sucrose, glucose and fructose) was performed according Macrae. Briefly, the juice samples were extracted by dilution with H₂O in ultrasound, filtered in sterile hydrophilic membrane (0.2 µm) and quantified in the chromatograph Waters Alliance 2695 equipped with a detector of refractive index Waters 2410, BioRad Aminex HPX-87C column (300 x 7.8 mm) at 85 °C, mobile phase 100% water, flow 0.6 mL / min and injection volume of 20µL, with external standardization. The statistical analysis was performed using the program XLSTAT 7.5, performing the ANOVA and subsequent Tukey test for comparison of means with a confidence interval of 95%. It was observed that the data obtained in the determination of sugars Murcott tangerine juice pasteurized under two different conditions, 90 °C /20s and 90 °C /40s, no significant difference (p ≥ 0.05) with each other and compared the results obtained for the juice fresh. However, an increase of 1.038% in the total concentration of sugars from the juice pasteurized at 90 °C /40s was observed when compared with the sample fresh.

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Selection of Herbal Plants for Development of Fresh-Cut Salad Products

Kim, J. G.; Lee, S. W.

NATIONAL INSTITUTE OF HORTICULTURAL AND HERBAL SCIENCE, 475 IMOK-DONG, JANGAN-GU, 440-706, SUWON, REPUBLIC OF KOREA

The objective of the present study was to select herbal plants as salad materials to develop new fresh-cut products. 18 herbal plants (13 leaves, 4 roots, and 1 tumour) growing in South Korea were used as salad materials. Although the herbal plants were eatable, they were not used as fresh-cut salad material, which were commercially developed. Freshly collected herbal leaves and shredded roots and tumour were washed in tap water for 90 seconds, dried with centrifugal dryer, and mixed with other fresh-cut vegetables (iceberg lettuce, romaine, carrot, and red cabbage). Samples were then packaged in PET tray and stored at 5 °C for 7 days. Selection of herbal plants for fresh-cut salad was based on quality (gas composition, discoloration, and off-odor), sensorial test (taste, appearance, and flavour), and microbial population. Fresh-cut products containing shredded roots had lower sensorial appearance score and higher microbial population compared to herbal leave products. Fresh-cut tumour, Ma salad had low score of appearance due to viscous materials. Five herbal leaves (Danggui, Jandae, Sumchorong, Korean native dandelion, and hydroponic ginseng leaves) were good salad materials with high score of taste and appearance and two fresh-cut products from wild leaves (Sanmaneul and Deoduk) had high flavour scores. Those seven fresh-cut products had ≤ 6 log CFU/g of total aerobic plate counts at the end of storage. The results indicated that the herbal leaves of the seven plants are potential materials for fresh-cut salad products.

S02.285

Effect of Environmental Friendly Sanitizers on the Quality Maintenance and Microbial Reduction of Fresh-Cut Iceberg Lettuce

Kim, J. G.; Choi, J. W.

NATIONAL INSTITUTE OF HORTICULTURAL AND HERBAL SCIENCE, 475 IMOK-DONG, JANGAN-GU, 440-706, SUWON, REPUBLIC OF KOREA

The effect of environmental friendly sanitizers on microbial growth and storage life of fresh-cut iceberg lettuce were studied. Fresh iceberg lettuce leaves were cut and washed separately in tap water, chlorine solution (50 and 100 µL·L⁻¹), 1.5 g·L⁻¹ calcinated calcium solution, 0.2% citric acid solution, 50% ethanol solution, and the combination of citric acid solution and 50% ethanol spray. Fresh-cut samples were then dried with centrifugal dryer, packaged in 80µm Ny/PE films, and stored at 5 °C. The ethanol solution dipping was the most effective treatment to reduce microbial population. However, ethanol solution induced severe injury of fresh-cut iceberg lettuce during the storage. Citric acid alone was not effective in reducing microbial population. However, the combination of citric acid and ethanol spray reduced aerobic microbial population and maintained good quality with high overall quality score at the end of storage. The results suggest that the combination of citric acid and ethanol spray could be an alternative to chlorine as an environment-friendly sanitizer for washing fresh-cut leafy vegetables.

S02.286

Sodium Metabisulfite Residues in Trimmed Young Coconut

Mohpraman, K.; Nongkam, P.; Songchumrong, A.; Siriphanich, J.

KASETSART UNIVERSITY, KAMPHANGSAEN, 73140, NAKHONPATHOM, THAILAND

Trimmed young coconuts turn unattractively brown and are highly susceptible to mold growth. The use of sodium metabisulfite (SMS) could remedy these problems. However, SMS residue in coconut kernel may be harmful to the consumer. The effects of coconut husk, shell, maturity, SMS concentration and dipping duration on SMS residue were studied. SMS (3 % concentration for 5 minutes) penetrated only 4 mm deep into the husk at the stem end (eye site). It could penetrate less at the stylar end and at the circumference. If the entire husk was removed SMS could penetrate the shell as well. It was found that trimmed young coconut at 170 days after anthesis (DAA) maturity had a greater chance to have SMS residue than that at 185 DAA and 200 DAA, respectively. Trimmed young coconuts dipped in higher concentration and longer duration of SMS solution had higher chance to have SMS residue. It is recommended that young coconut should be of 185 DAA or older, with minimal peeling, leaving the husk at least 1 cm thick, and dipped in ≤ 3% and ≤ 5 minutes of SMS solution in order to keep the kernel free of SMS residue.

S02.287

Applied Research of Millipede *Bandeirenica caboverdus* (Diplopoda, Spirostreptidae) and the End of the Quarantine Restrictions

Nascimento, B.

UNIVERSITY OF CAPE VERDE, CAMPUS DO PALMAREJO, CP 279, PRAIA, CAPE VERDE

The damages caused by the millipedes *Bandeirenica caboverdus* constitute a major problem for the horticultural sector in Cape Verde and were the fundamental reason for the internal quarantine measures undertaken by the Government. The transport of any plants, fruits and vegetables produced on the two infested islands (Santo Antão and São Vicente) was forbidden to the other islands of the Archipelago. The internal quarantine measures left the two islands isolated, without access to the markets in other islands for the increasing agricultural production. In order to solve the problem of export, a new Government Ordinance is under preparation. Some of the horticulture products from Santo Antão and São Vicente will be allowed for commercialization in other islands of the Archipelago after adequate