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BOOK OF ABSTRACTS*

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presence of phytochemicals was evaluated. The FC showed higher contents of P, Ca, Mg, Mn and Fe (0.17%; 0.22%; 0.25%; 12.8 ppm; 34.0 ppm, respectively), when compared to the FS, whereas it stands for the contents of Cu, K and S (15.6 ppm; 0.59%; 0.37%, respectively). The recommended daily intake of K, Mg, Fe, Zn, Mn, Cu and Ca is 4.6 g/day, 260 mg/day, 14 mg/day, 7 mg/day, 2.3 mg/day, 900 μg/day and 1.3 g/day for adults, respectively. Thus, the intake of 100 g FC will supply, approximately, 12%, 92%, 24%, 16%, 52%, 150%, 17% of the above minerals, respectively. On the other hand, 100 g FS will supply 13%, 27%, 17%, 19%, 41%, 197%, 11% of the same minerals, respectively. Both flours were positive for reducing sugars, protein and amino acids, tannins, catechins, flavonoids, depside and depsidones. Only the FC showed positive results for alkaloids. The results show FC and FS as potential sources of minerals and phytochemical compounds; however, their biological properties should be studied. The results of this study showed that the lychee skin and seed flours are a source of minerals and compounds with bioactive properties; thus, after pulp processing, they may be used by the food industry as promising sources of minerals and bioactive substances, for the development of new products, which adds value to the lychee fruit. Their biological properties are being studied and will be added in bakery products.

Stability of Biofortified Cassava Fried Chips **UP488**

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The development of products made of cassava with high level of carotenoids is an alternative of vitamin A. This high-level carotenoid and fried product shows a limited shelf life by oxidation reactions and crispy loss due to moisture gain from the storage environment. The purpose of this study was to survey information on the effect of the type of package and packaging system of the product to preserve the nutritional and sensorial quality of biofortified fried cassava chips. Biofortified cassava fried chips was packed with nitrogen in packs with different barriers to oxygen and water vapor (metallized polyester - PETmet)/low density polyethylene (LDPE), biaxially oriented polypropylene metalized (BOPPmet)/BOPP and without nitrogen (BOPPmet/BOPP and polypropylene - PP), under stored at 25oC/75%RH. The packaging material was characterized as oxygen and water vapor barrier properties. During the storage, it was analyzed the residual oxygen of the headspace in the packaging and the chips for water activity, carotenoids quantity and Losses of 50% carotenoids occurred in chips of PETmet/LDPE and BOPPmet/BOPP nitrogen packages after 75 and 60 storage days, respectively, due to 5% initial residual oxygen in the headspace. In packs without nitrogen, this similar reduction of carotenoids occurred in chips of BOPPmet/BOPP and PP after 55 and 40 storage days, respectively, once the initial residual oxygen in the headspace was the same as the atmospheric air (21%). Though the cassava fried chips lost crispiness after 120 and 30 storage days, respectively in PETmet/LDPE with nitrogen and PP without nitrogen. On the other hand, the crisp of the product was maintained until 120-storage-day in BOPPmet/BOPP due to the good moisture barrier of this material. However, the development of rancidity flavor due to lipids oxidation in the product caused rejection of the chips after 120 and 75 storage days, respectively in BOPPmet/BOPP packs with and without nitrogen and after 30-day storage in PP due to the residual oxygen in the headspace of the package without nitrogen. Not occurred the development of rancidity flavor of the chips in PETmet/LDPE until 120 storage-day due to the lower initial residual oxygen in the headspace and good oxygen properties of this material. The results of this

study indicated for biofortified cassava fried chips packaging of the BOPPmet/BOPP without nitrogen once 60-day shelf life is the same as the normally used by commercial chips in Brazilian

The Physico-chemical Characteristics of Yeast Fermentation of Two Mango Varieties **UP489**

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Introduction and objectives: Efficient methods of post-harvest handling, preservation and value addition are critical for minimizing high losses in the post-harvest chain of fruits. The goal of this study was to address this problem by employing yeast fermentation technology to produce a more stable, value added product from mangoes.

Methods: The design of the study involved determination of the fermentative capabilities of a selected yeast strain on the quality characteristics of mango wine obtained from two selected mango cultivars (improved and wild) with and without peels. The response variables monitored in the must and wine included total soluble solids (TSS), pH and total acidity (TA), microbial populations (aerophilic mesophiles, yeasts and Acetic acid Bacteria), and alcohol content. Volatile compounds development was also monitored using GC-FID procedures. Descriptive and hedonic sensory evaluations were carried out on the mango wine obtained from all treatments.

Results and conclusions: The effects of mango peels in must fermentation characteristics compared well with those of must fermented without peels. However, the wines made using peeled mangoes were far more preferred by consumers than wine made using mangoes with peels on. Indeed mango wine obtained without removing the mango peels before fermentation was widely disliked by sensory panels. Five (5) major classes of aromatic volatiles were identified in all must and wine samples. Acetaldehyde and ethyl caprylate were present in all treatments, followed by isobutyraldehyde and 2, 3 Butanedione. While some volatiles identified appeared to be mango cultivar specific (Benzaldehyde and 1-methyl-2-pyrrolidone) other volatiles appeared to be unique to the yeast strain employed (Ethyl butyrate).

Ozonation Effects on Model Vegetable Studied by ATR-FTIR Spectroscopy **UP490**

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The consumption of fruits and vegetables is largely encouraged due to their health benefits. To preserve these perishable products, postharvest fungicides are often applied before or during the storage. Ozone may constitute a desirable and effective residue-free alternative to avoid chemicals. The objective of this study was to determine the impact of different ozone applications (Concentration x time, CT) on vegetables by a non-invasive surface-sensitive technique: Attenuated Total Reflection Fourier Transform InfraRed spectroscopy (ATR-FTIR).

Carrots were collected after 90-110 days of culture in the same sandy field and were washed in water prior to storage in a chamber maintained at 4°C until treatments. Carrots were treated in ozonated air prepared with an OZAT CFS1-2G generator to obtain CTs of 5, 50, 100 and 200 mg.min.L-1. The samples were stored in separate sealed sterile bags in the same container as the control samples at 4°C until ATR-FTIR analysis. The carrots were separated into 3 parts: the periderm situated on the surface of the root; the cortical cylinder (phloem region of the root) and the pith (xylem zone inside the cambium ring) which is the central region of the root. Thirty spectra were collected for each of the three parts for the control and the ozone-treated carrots. A total of 450 spectra were recorded between 1800 and 900cm-1 and were analyzed (second