



RESEARCH THAT RESONATES
AUGUST 17-21, 2014 | MONTREAL, CANADA

IUFoST 17th WORLD CONGRESS OF
FOOD SCIENCE AND TECHNOLOGY & EXPO

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ABSTRACTS*

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juice, jam, bottled fruit, dried fruits and fruit leathers on the evolutions of various phytochemicals in PP. The dominant antioxidants, that is, phenolics (measured in terms of the total phenolic content, TPC), vitamin C, carotene, α -tocopherol, Betacyanins, Betaxanthins, Chelating activity, DPPH and the combination of Betacyanins with Betaxanthins assessed both on different prickly pear products (PPP). The results showed that ascorbic acid and carotene are mostly affected during the production of dried fruits. The antioxidant properties of other PP aside drying were not differing statistically. However comparing with the fresh prickly pear pulp, it was observed that there were significantly different at $P < 0.05$. The implication of the results in this study indicates that processing methods influenced some of antioxidants properties of the PPP differently. It was concluded that processing of PPP affects antioxidants properties positively, especially on chelating activity, DPPH, Betacyanins, Phenolics but affects ascorbic acid, carotene and α -tocopherol negatively in all PPP.

Antioxidant Capacity of Hydrolysates During Enzymatic Hydrolysis of Salmon Muscle Proteins

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The antioxidant capacity of fish protein hydrolysates is one of the most studied bioactive properties. During the enzymatic hydrolysis proteins are converted into smaller peptides and aminoacids consequently changing the antioxidant capacity. The objective of this work was to study the effect of the enzymatic hydrolysis of salmon muscle proteins on the antioxidant capacity. Salmon muscle proteins were hydrolyzed by Alcalase under different operational conditions of protein concentration, enzyme concentration and temperature ranging between 2.5-7.5% of protein, 0.55-7.70 mUA/g of reaction mixture and 40°C-60°C respectively. A Central Composite experimental design with 17 experiments was used. The hydrolysis process was carried out at pH 8.0 using the pH-stat technique registering the added volume of base during 120 min of reaction. In each experiment samples were withdrawn to determine the radical scavenging capacity (RSC) using the DPPH method and the nitrogen concentration using the OPA method. The maximum degrees of hydrolysis achieved after 120 min of reaction are between 7.7 and 21.5% with 30.9 and 90.7 mM of N respectively. The results indicated that RSC decreased during the hydrolysis process in all the experiments regardless the operational condition. Furthermore, when the specific RSC (SRSC) was calculated dividing RSC by the N concentration, it was found that SRSC has a very good correlation with the N concentration. The obtained SRSC values are between 15 mmol DPPH/mol N for the non-hydrolysed protein and 2.6 mmol DPPH/mol N for the hydrolysed proteins. It was concluded that the RSC only depends on the N concentration and that larger proteins has a higher RSC than smaller proteins and peptides. These findings allow the future developing of a mathematical correlation of the antioxidant capacity of hydrolysates with the operational conditions of the hydrolysis process.

Tocopherol, β -carotene and Chlorophyll Content of Unripe and Ripe Hass Avocado (*Persea americana* Mill.) Oil Extracted by Cold Pressing with or without Shell

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Avocado oil contains different lipophilic compounds with antioxidant activity such as tocopherols, β -carotene and chlorophylls. However, the maturation stage of avocado might alter the nutritional value of cold pressed avocado oils. The aim of present study was to evaluate the content of tocopherols, β - carotene and chlorophyll in cold pressed avocado (Hass) oils in different stages of maturation, with or without shell. Oils were extracted by cold pressing from pitted unripe and ripe avocados dehydrated by oven drying (60°C), microwave or lyophilization, with or without shell. Contents of tocopherols (α -, β -, γ - and δ -TOC), β -carotene (β -CAR) and chlorophyll A were analyzed by normal-phase HPLC with UV detector (TOC, 295 nm; β -CAR, 450 nm; chlorophyll A, 625 nm; Psomiadou et al., 1998). Results were expressed in mg/100g. ANOVA with pos-test of Fisher L.S.D. was used to compare means. All values were consider significant with $p < 0.05$. The α -TOC was the major tocol in all samples. Dried microwave unripe avocado oil extracted with shell showed the highest content of α -TOC (20.08 ± 1.62). β -TOC was presented only in oven dried unripe avocado oils extracted with shell (5.32 ± 0.08) and without shell (2.29 ± 0.23). δ -TOC was presented in oven dried unripe and ripe oils with shell (3.23 ± 0.23 and 6.96 ± 1.03 , respectively), and in lyophilized unripe and ripe oils with shell (9.15 ± 0.12 and 4.40 ± 0.33 , respectively). Content of β -CAR was higher in oils extracted with shell, independent of maturity state while content of chlorophyll A was higher in dried oven and microwave unripe oils extracted with shell. Therefore, cold-pressing oils with shell increased TOC and β -CAR contents of oils from avocados in both stages of maturation. Moreover, content of chlorophyll A was also enhanced in unripe avocado oils extracted with shell. Consequently, cold-pressing avocado oils with shell might contribute to antioxidant activity of oils and probable to prolong its shelf-life.

Effect of Rice Cultivars with Different Amylose Contents on Quality of Gluten-free Rice Noodles

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The objective of this study is to investigate the effect of rice cultivars with different amylose contents on the gluten-free rice noodles. Seven different rice (Baegjinju, Seolgaeng, Goami, Goami-4, Hanaum-2, Mimyen and Palbangmi) flours with different amylose contents from 9.4 % to 26.7 % were prepared by dry milling and passed 200 meshes. The formula of dried rice noodles was determined as flowing ingredients (rice flour 100%; water 56%; salt 2%; HPMC 4%). Dried gluten-free rice noodles were prepared using extrusion processing with hydroxypropyl methylcellulose. The characteristics of rice flours were determined by damaged starch content, moisture content, amylose content and thermal properties. Prepared rice noodles were measured moisture content, cooking loss, turbidity and tensile test. Among the cultivars, the dried rice noodles using Goami represented lowest cooking loss value, turbidity of cooking water and highest tensile strength value. These characteristics indicate that Goami is suitable cultivar for making gluten-free rice noodles. Damaged starch, amylose and moisture content of Gomai were measured by 10.2%, 26.7% and 10.6% respectively. The overall gelatinization temperature of rice cultivars was ranging from 54.4°C to 63.1°C. Goami was represented low thermal properties parameters. Goami shows the suitable processability for making gluten-free rice noodles compared to other rice cultivars indicating that high

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