

and afterwards frozen storage. The commercial pure grape juice is already clarified and did not require this process step. A two factor simplex-centroid design was used for the formulation, fixing the *açaí* juice concentration and varying only the two other juices contents performing five treatments. The formulated juices were analyzed for determination of anthocyanins and total phenolics. The results showed an expected behavior of a positive correlation between the concentrations of these functional classes of compounds and the grape juice content. As the *açaí* concentration is fixed, grape is the component richer in both phenolics and anthocyanins, which explain the results. The formulation containing 20% *açaí*, 80% pineapple and no grape presented the lowest values, 4.34 mg/100g anthocyanins and 68.95 mg/100g total phenolics, while the highest values, 20.87 mg/100g anthocyanins and 175.21 mg/100g phenolics were verified in the formulation that contained 20% *açaí*, no pineapple and 80% grape. The Tukey test showed significant difference between the five formulations with 95% of probability.

Keywords: fruit juices, fruit drinks, clarification, tropical fruits

### [P132]

#### **Effect of Pre-Treatment on *Açaí* Pulp Microfiltration Process**

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*Açaí* (*Euterpe oleracea* Mart.) is a palm tree from north region of Brazil. Its small fruit is rich in bioactive compounds making it an attractive product. The aim of this work was to evaluate the effect of pre-treatments on microfiltration of *açaí* pulp. Raw material was *acaí* pulp from Belém, Brazil. Pre-treatments were centrifugation, conducted in a basket centrifuge; refining, in a depulper with a 0.5 µm mesh; and enzymatic hydrolysis with DSM Rapidase and Picantase for 30 min at 35°C. Microfiltration was conducted in tubular membranes with 0.1 µm pore size and 0.022m<sup>2</sup> of surface. Processes were carried out at 35°C/3bar in batch mode. Permeate flux was determined during the process. Total and soluble solids, pH and acidity were determined on initial and treated pulp, permeate and retentate. Initial pulp contained 13.89 (w/w), 2.85°Brix, 0.19g/100g (malic acid) and 4.93 of pH. Total solids of treated pulp from centrifugation (5.71%) were lower than the others (13.83 and 13.84%) which consequently caused lower total solids in retentate and permeate fractions. Acidity and pH of treated pulp were different (p<0.05) for the different pre-treatments. Similar behaviors were also verified to retentate and permeate fractions. Values varied from 0.10 to 0.29 g/100g malic acid and pH from 4.17 to 4.98, with no correlation to total solids content. Soluble solids were different for each fraction although there was no significant difference in the same fraction in function of used pre-treatment. The values were 2.87, 1.63 and 4.77°Brix for treated pulp, permeate and retentate, respectively. Average flux was affected by pre-treatment being the lowest values, around 70 L/hm<sup>2</sup>, obtained after centrifugation and the highest, 110 L/hm<sup>2</sup>, with the enzymatic action. As physical-chemical parameters did not present a behavior that contributes for the pre-treatment selection, permeate flux results suggest the use of enzyme as the recommended option.

Keywords: tropical fruits, membrane processes, fruit juice, enzyme

### [P133]

#### **The acceptability of different sensor characteristics of some types of beers for young people**

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Beer is a drink known for over six thousand years. Throughout its long history, it has always been one of the most favorite and widely spread drinks, present at all meridians in every season of a year, equally favourite with all society classes. The favourable effect of beer has been known for centuries, so, besides being used as a refreshment it has been used as a medicine recommended for kidneys treatments, appetite improvement, as a tranquilizer and for good sleep.