Jamila M Hashemi et al., Madridge J Food Technol. 2018
http://dx.doi.org/10.18689/2577-4182.a2.006

madridge CONFERENCES

2nd International Conference on
Food Science and Bioprocess Technology
October 1-2, 2018 Frankfurt, Germany

The Shelf Life Stability of Mixed Fruit and Vegetable Juice Fortified with *Moringa oleifera* Leaves Juice

Jamila M Hashemi* and **Reham J Qashqari**
King Abdulaziz University, Saudi Arabia

Background: *Moringa Olifera* leaves (M.O.L) has nutritional and medical properties, it is consumed in some countries such as Egypt, Niger, Philippines etc. which, make these leaves suitable for use in making many products such as juices. Fruits and vegetables are "juicy foods" that contain mostly water; they are commonly consumed as a juice, beverage, as a flavoring agent or as an ingredient in foods. In order to have higher quality and fresher juices, the standard is often freshly squeezed and unprocessed juice, but their shelf life is less than 6 or 7 days depending on the fruit or vegetable types at 4±1°C. Consequently, they are preserved by various techniques such as Thermal pasteurization and heat treatment. Therefore, the aim of the present study is to evaluate the processed fruit and vegetable juices mixed with fresh M.O.L juice to produce untraditional healthy products as well as prolonging the shelf life with minimal loss of bioactive compounds.

Methods: This study treated fruit and vegetable juices with boiling each fruit and vegetable in an amount of water, blended, filtrated and then mixed as follows: A- M.O. 50% + Pineapple 38% + Carrot 10 % + Ginger 2% (Treatment A). B- M.O. 60% + Pineapple 28% + Carrot 10 % + Ginger 2% (Treatment B). C- M.O. 40% + Pineapple 38% + Carrot 20 % + Ginger 2% (Treatment C). Sensorial, physicochemical and microbiological analysis was conducted on juices packed in glass bottles during storing at 4±1°C.

Results of sensory evaluation indicated that treatment A and B were almost palatable products among different panelists. Physicochemical analysis showed that treatment C had the highest contents of total soluble solids (T.S.S), pH value, ascorbic acid, total phenolic contents and antioxidant activity at zero time and after one month of storage compared to other treatments. Meanwhile, treatment A and B were having a good amount of ascorbic acid reached to (4.15 and 5.01 mg/100ml), total phenolic (53.46 and 59.32 mgGAE/ml) and antioxidant activity (68.52 and 70.81%) after one month of storage. These parameters were affected by storage time, ascorbic acid, phenolic compounds and antioxidant activity were decreased during storage time of all treatments. Results of chemical analysis ascertained that raw F.M.O.L is an excellent source of ascorbic acid (139.46 mg/100g), for now, F.M.O.L juice is an excellent source of phenolic compounds (38.76 mg GAE/mg) and antioxidant activity (77.65%), respectively too. In addition, the color analysis of (L*, a* and b*) values appeared that all treatments were lightness, tend to redness more than yellowness at zero time and increased after one month of storage. It appeared that using HPLC before and after hydrolysis method is the suitable process for the extraction of phenolic compounds from these types of juices. Decisively, results indicated that Epicatechin (EP), rutin (RU), chlorogenic acid (CH), 4-O-Caffeoylquinic acid (CA) and quercetin (QU) were predominant phenolic compounds in pineapple, carrot and ginger mixed with F.M.O.L juice. Whereas, the others are dominant phenolic constituents.

Microbiological analysis (bacterial, yeasts and molds) indicated there is a growth of yeasts after one month of storage in treatment A and C except treatment B. The process of heat treatment (boiling at 100˚C) with mixed juices with F.M.O.L juice by 50% (treatment B) preserve the juice up to one month of storage compared to other treatments. This indicated that F.M.O.L juice can be used in food applications.

Conclusion: It is concluded that through the aforementioned obtained results of sensory evaluation and other analysis that it was successful and applicable to produce processed fruit and vegetable juices mixed with 40% and 50% of F.M.O.L juice the suitable ratios for using F.M.O.L juice in such juices.

Biography:

Jamila M Hashemi is working as an associate professor at the King Abdulaziz University, Saudi Arabia. She has published articles mostly related food research.