

International Conference and Exhibition on
Probiotics, Nutrition and Functional Foods
&
17th World Congress on
Pediatrics and Nutrition

July 05-06, 2019 | Paris, France

Hyperbaric treatment increases bioactive compounds in cashew apple

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Fruits and vegetables are an important part of healthy eating habits and consumers are demanding more high-quality, fresh fruits and vegetables that are free from chemical preservatives. Good or improved nutritional properties of fruits and vegetables has motivated the food industry to improve existing technologies, and has led to many studies on novel technologies. Hyperbaric treatment consists in exposing a fruit or vegetable to pressure ranging from 100 to 1000 kPa. In these conditions, the commodity is under an O₂ partial pressure 1 to 10 times greater than in the normal atmosphere. This type of treatment has been found to have a positive effect on the quality of some commodities and has shown promising results in extending storage life of some fresh fruit and vegetables. It has been shown to reduce respiration rate, ethylene production and the ripening process as well as probably extend the synthesis of certain biochemicals of

fruits. Moreover, researches showed that lycopene content was enhanced by hyperbaric treatment at the end of ripening period. The above findings imply that hyperbaric treatment may not only extend shelf-life and preserve produce quality but also induce a secondary metabolic response during the treatment, thus possibly inducing disease resistance and enhancing synthesis of certain bioactive compounds in the produce. The aim of our study was to evaluate the effect of the application of hyperbaric pressure at 100 (control), 200, 400, 600 and 800 kPa for 1, 2 or 4 d, followed by 2 d under ambient conditions, on the production of bioactive compounds of the cashew apple (*Anacardium occidentale* L.). The results show that application of hyperbaric pressure up to 800 kPa increase the carotenoids, anthocyanins and flavonoids contents of cashew apple.

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