CHANGES IN COLOR PARAMETERS AND POLYPHENOL CONTENT OF ASEPTICALLY FILLED APPLE JUICE DURING STORAGE

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Abstract

In the fruit processing sector, one possible way to eliminate differences due to seasonality and location is aseptic preservation. This eliminates the need to use natural, added material to increase the shelf life of aseptic fruit puree semi-finished products without significant deterioration. In the production technology of aseptic marrow semi-finished products, in addition to color fixation, in addition to the addition of ascorbic acid, the production is also included. The latest customer demands, but the omission of ascorbic acid is certainly being asked with this additive-free product. The aim of this work was to study effect of the storage time and to examine how the biologically valuable component content changes in aseptic filled "Idared" apple juice.

Acerola juice (1430 mL x kg^{-1}) or ascorbic acid (200 g x kg^{-1}) was added to the apple juice to enrich the amount of valuable component and the changes of measured parameters were monitored during the 12 months storage. The antioxidant capacity [1], total polyphenol content [2], and color coordinate values (Konica Minolta-CR-400) of aseptically filled apple juice were determined and compared with the control sample.

No significant difference in color coordinates was observed between ascorbic acid-, acerola-enriched and control samples. After four month storage, the polyphenol contents of the samples shown remarkable decrease except the control ones. By the end of the storage period, the samples enriched with acerola had the highest total polyphenol content. The antioxidant capacities of apple juices also increase during storage by sixth month. Then the antioxidant capacity values reduced in the control sample and ascorbic acid enriched juice, opposite its amount in the acerola-enriched version increased slightly and then stagnated until the end of the storage time.

The most prominent results were obtained for acerola treated samples in both case of the fruits. There is a significant difference against the ascorbic acid treated samples and the acerola treated samples in the color parameters. It is a very important aspect in terms of industrial processing because much less quantity is enough to add the juice from ascorbic acid than acerola what makes the whole process cheaper. After six month there is a definite decline of all of amount of the bioactive substance.

Key words: *Aseptic, Apple juice, Storage.*