Effect of Various Cooking Pots for Determination of Ascorbic Acid Amount in Raw and Cooked Vegetables

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L-Ascorbic acid (AA) or Vitamin C, is distributed widely in both plant and animals. AA is an essential nutrient for humans. AA is found in biological fluids such as blood and urine. In living organisms, AA is an antioxidant which can protect the body against oxidative stress [1]. Under oxidative stress, AA is converted to dehydroascorbic acid (DHA) by losing two protons. AA is known to take part in several biological reactions and its content is related to cancer and hepatic diseases. Ascorbic acid is present in the retina at high concentrations compared with other organs and there is a greater than 10-fold gradient between the concentration of vitamin C in the retina and blood [2].

In vegetable cells, it can be found in free form. L-Ascorbic acid (AA), a water-soluble vitamin, is electroactive and, therefore, a variety of methods have been developed for its analysis. Voltammetric methods have been applied for the analyses of ascorbic acid in vegetables. The redox reaction is accelerated by the presence of metal ions and light [3].

In this study, the effect of different cooking pots to level of ascorbic acid in various vegetables such as green pumpkin, honey pumpkin, white cabbage, red onion, have been studied. These vegetables are cooked in teflon, steel and copper pots and the content of ascorbic acid in vegetables compared to raw vegetables. The amount of ascorbic acid was analyzed by using the iodometric and voltammetric methods (Fig. 1). The experimental parameters was optimized. Ascorbic acid in water of raw vegetables was extracted only with press (without metal). Vegetables in teflon, steel and copper pots is cooked heating in pure water for 45 min. at 90°C. The amount of ascorbic acid analyzed in the samples were compared with other methods.

![Graph](image)

Figure 1. The effect of cooking pots to amount of ascorbic acid in red onion

KEYWORDS: ascorbic acid, food, vegetable, iodometry, voltammetry

REFERENCES: