ABSTRACT
Carotenoids are pigments naturally occurring in a various number of fruits and vegetables. There are two main classes of these compounds, carotenes, which are hydrocarbons, and xanthophylls, which are derivatives of carotenes. Zeaxanthin belongs to the second class and is the main pigment of yellow corn (Zea mays L.). This compound plays a critical role in the prevention of age-related macular degeneration (AMD). In the literature, there are in vivo studies that demonstrate reactions of isomerization and oxidation of the zeaxanthin. These processes lead to the antioxidant capacity of zeaxanthin in the organism. [1]

It is important to analyze the stability of zeaxanthin to see in what conditions will occur the formation of its oxidation products.

INTRODUCTION
Under conditions of normal oxidative stress the carotenoids serve as protective antioxidants; however, when the oxidative stress exceeds the antioxidant capacity, carotenoids can be oxidized into numerous cleavage products [2]. Altering this balance in order to enhance the oxidants may result in pathological responses that cause functional disorders and diseases, like age related macular degeneration (AMD) and cataracts. These mentioned problems are the leading causes of visual loss in aged populations [3][4]. The consumption of fruits and vegetables rich in carotenoids, lutein and zeaxanthin, can be beneficial in delaying or protecting against AMD, through their antioxidative effects [5]. Only these carotenoids and their metabolites are present in high concentrations in macula lutea and retina.[6][7] Oxidative degradation, the main cause of extensive losses of carotenoids, depends on the availability of oxygen and is stimulated by light, enzymes, metals, and co-oxidation with lipid hydroperoxides. They have different susceptibilities to oxidation, being the more labile ð-carotene, lutein, and violaxanthin [8] Formation of epoxides and apocarotenoids (carotenoids with shortened carbon skeleton) appears to be the initial step and total loss of color and biologic activities are the final consequences. Oxygen, especially in combination with light and heat, is highly destructive, so exposure to light, especially direct sunlight or ultraviolet
light, induces trans-cis photoisomerization and photodestruction of carotenoids. Thus, work on carotenoids must be performed under subdued light. [9]

The objective of this work is analyze the stability of zeaxanthin and the formation of oxidative compounds.

![Fig. 1. The chemical structures of dietary lutein, zeaxanthin and non-dietary meso-zeaxanthin](image)

**REFERENCES**


