

**Article about the Importance of Carotenoids in Agr-Food and Health – the most cited article in top nutrition and dietetics journal**

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Carotenoids are ancient and versatile isoprenoids. They are essential in photosynthesis, pollination, seed dispersal and precursors of plant hormones and signals it is unarguable that carotenoids are key for plant survival, development, and propagation and therefore in the production of foods and feeds.

For many years, the interest on carotenoids as food constituents resided in the colour they impart and the fact that some of them are precursors of vitamin A. Carotenoids are pigments responsible for bright red, yellow and orange hues in many fruits and vegetables although they are also very abundant in green vegetables, where they are masked by chlorophylls. Ample evidence has accumulated that their presence in the diet at adequate levels is associated with a lower risk of developing diverse diseases such as cancer, eye and skin conditions, metabolic disorders, among others.

Learning more about their roles in plants but also in algae or even microbes will be important to produce health-promoting foods more efficiently and contribute to sustainability.

Lunched in 2016, the COST Action EUROCAROTEN (*European network to advance carotenoid research and applications in agro-food and health*), has implemented a network for the advancement of carotenoids research and applications in agro-food and health.

The network gathered a multidisciplinary European network of researchers from 35 countries bringing together scientists with microbiology, chemistry, food science, food technology, nutrition, biotechnology, plant science, agriculture, pharmacology, toxicology, and medical expertise. The objective is to explore the great possibilities carotenoids ubiquity, and their versatility can offer to achieve breakthroughs and innovations at scientific, technological, and socioeconomic levels.

The Action has produced the most cited article published since 2018 in *Progress in Lipid Research*, the top ranked journal in the Nutrition and Dietetic and has already received nearly 200 citations, which is highly indicating general interest for carotenoid research and its timeliness.

The article reviews the biosynthesis of carotenoids in diverse organisms, their importance in agro-food and health and outlines further research needs. The agro-food industry is the second largest economic sector in the EU. It employs around 50 million people, and it is worth around €750 billion a year in Europe.

Research on carotenoids is crucial to solve the global challenge of producing health-promoting sustainable foods. Today the network is mature, strong, and cohesive and contributes to create wealth, improve health and reduce costs related to serious diseases.

*“Carotenoids are extraordinary compounds that serve to illustrate the magic and wisdom of Nature, which has learnt to harness this ancient compound for the most diverse purposes, including making our diets healthier and more appealing”,* says Prof. Antonio J. Meléndez Martínez, the COST Action Chair.

**Contact:** Antonio J. Meléndez Martínez, Universidad de Sevilla, [ajmelendez@us.es](mailto:ajmelendez@us.es)

**Further information:**

***Informative material in non-technical language*** about the importance and applications of carotenoids:

Carotenoids: key compounds in Nature (subtitles in > languages)

<https://www.youtube.com/watch?v=oQRixPkmC2I>

Carotenoids: importance in agro-food and health and applications (subtitles in > languages)

<https://www.youtube.com/watch?v=3gdk-e9-qUE>

***Booklet for kids***

[https://cared.cragenomica.es/wp-content/uploads/2020/11/Book-EMdIC-complete\\_ENG.pdf](https://cared.cragenomica.es/wp-content/uploads/2020/11/Book-EMdIC-complete_ENG.pdf)

***COST Action*** EUROCAROTEN: [www.eurocaroten.eu](http://www.eurocaroten.eu)

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