



ITC INSIGHTS: SUPPLEMENT CONSUMER SURVEY 2020

ASTAXANTHIN CATEGORY ENHANCED REPORT

What is the ITC 2020 Survey?

Ingredient Transparency Center recently concluded its third annual consumer survey, involving 2000 consumers from the US, UK and Germany. Our multi-category insights drive understanding of supplement purchasing behaviors and decisions with an intense focus on emerging and important categories, placed into context by comparing these against more established and broader categories like probiotics, omega-3s, vitamin D and protein.

The emerging categories explored include astaxanthin, coenzyme Q10, collagen, curcumin/turmeric, glucosamine, prebiotics and vitamin K.

This is the first year that multiple countries have been included in our survey, allowing ITC to present comparisons across the US, UK and Germany in all these categories. We've also looked at year over year data in the US though some findings have been impacted by COVID which are noted.



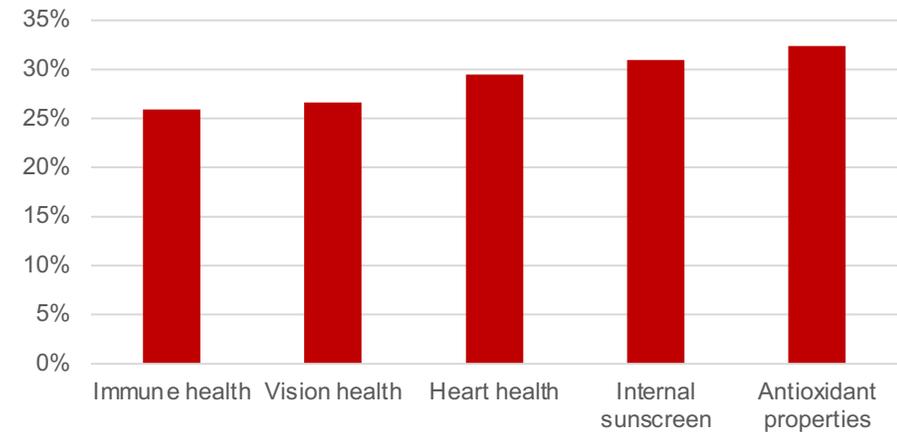
Digging into Astaxanthin:

The Ingredient Transparency Center has been tracking the astaxanthin market for 3 years, engaging in repeated dialogue with key sector stakeholders. With 3 years of knowledge, and ITC having expanded the scope of the 2020 insights to include the UK and Germany, some crucial observations and insights come to the surface.

Astaxanthin may be the most important nutritional ingredient that most people have never heard of. But as the science and awareness of this ingredient, which is part of the carotenoid family, emerges, it is likely to see a future as bright as its characteristic red pigment. Known as the “King of Carotenoids.” astaxanthin offers unique benefits and action in promoting health and protecting against cellular damage, especially in the brain and vascular system. It is relatively rare in plants and animals, so it is hard to get enough in food. It is most prevalent in a specific algae called *Haematococcus pluvialis* (*H. pluvialis*), which is a common food for aquatic creatures like salmon, crab, lobster, shrimp, krill and other fish. The astaxanthin in the algae they eat gives these marine animals their reddish color.

Astaxanthin’s path in the nutritional marketplace has not always been straightforward. It has an impressive body of research that supports clinical validation for no less than 10 health benefits, including brain health, eye health, cardiovascular support and immune system modulation. It also has clinical substantiation for some of today’s most important health topics, including antiaging, inflammatory response, muscle, joint and tendon maintenance, as well as sports performance and energy. As substantiation grows, products are being positioned in new areas such as eye health and skin health and new delivery formats and products are in development, including liquids, gummies, functional beverages, sports ingredients, protein powders and topicals for skin health. The chief challenge and opportunity for the astaxanthin segment is to increase consumer interest.

Top 5 Perceived Benefits (Regular Users)

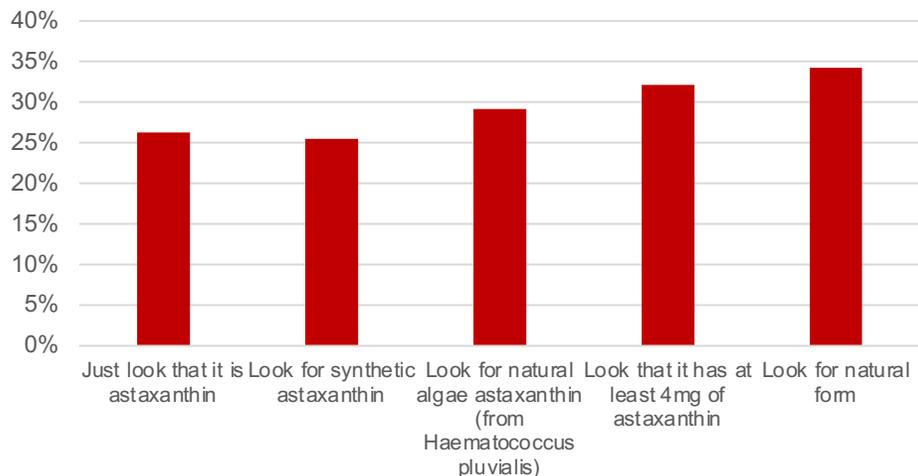


Astaxanthin’s ability to travel through the body allows it to target a number of high stress inflammatory areas. Increasingly, evidence of astaxanthin’s effects on reducing exercise and immune response continues to build, with sports performance applications showing significant promise. One of the unique benefits of astaxanthin is that it can readily cross the blood-brain barrier as well as the blood retinal barrier, meaning it can easily reach the inner sanctum of the eye and the brain, which other carotenoids cannot do.

The most well-studied and supported astaxanthin is derived from *H. pluvialis*, which is the primary source of astaxanthin for human consumption found in products on the market today. *H. pluvialis*, a fresh-water algae, is slow and somewhat temperamental to grow. With a steep and costly learning curve to enter the supply market, only a few companies have mastered its production at commercial quantities. Due to the cost and difficulty of cultivating *H. pluvialis*, other forms of astaxanthin have entered the market in recent years. Astaxanthin is also derived from other natural forms including a genetically mutated yeast known as *Phaffia* as well as another form extracted from a marine bacterium called *Paracoccus*. There is also a synthetic version of astaxanthin made from petrochemicals.

Familiarity with astaxanthin is the biggest obstacle to market growth. Of the consumers we surveyed that take astaxanthin, inconsistencies emerge suggesting that even those that are the most familiar need more education.

Astaxanthin Purchasing Decision (All Users)



The growing market opportunity

The global market for astaxanthin is growing at about 10% annually, justifying recent investments in the space made by category leaders. Major natural astaxanthin suppliers include Solabia-owned AlgaTech (France-Israel), InnoBio and BGG-owned Algae Health Sciences (China), Fuji-owned AstaReal (Japan-Sweden-US), Cyanotech (US) and Atacama Bio (Chili). BASF and DSM are a couple of the bigger synthetic astaxanthin suppliers. All of the above supply differentiated ingredients, some on the basis of scientific support, others differentiated by virtue of their production technology. Currently, ITC estimates that the use of astaxanthin in dietary and food supplements was approximately \$180m in 2020 and expected to rise to \$297m in 2024.

Of all the ingredients examined in the ITC Insights program, astaxanthin ranked highest in the importance of sustainability, was one of the highest in monthly supplement spend, and the values of trust and transparency resonated strongly. Astaxanthin users also pay significant attention to labels, with the presence of branded ingredients also impacting buying.

Future drivers of the category need to include broad education, learned from categories such as omega-3's, probiotics and to a certain extent, vitamin D, especially amongst practitioners. Meanwhile, the continued rise of apps and 'personalization' all support ongoing category potential, as does the practitioner channel of sale. Disturbingly, recent ITC testing of randomly purchased astaxanthin products online discovered a high rate (30%) not meeting their label claim. In a category where trust is a huge motivator, and belief in the ingredient is somewhat fragile, continued failures at production would have a significant impact on the market.

QUESTIONS?

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