

U.S. Astaxanthin Market Size, Share & Trends Analysis Report By Source (Natural, Synthetic), By Product, By Application (Nutraceuticals, Cosmetics, Aquaculture & Animal Feed, Food), And Segment Forecasts, 2025 - 2033

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Abstracts

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U.S. Astaxanthin Market Size & Trends

The U.S. Astaxanthin market size was estimated at USD 531.11 million in 2024 and is projected to reach USD 1,684.45 million by 2033, growing at a CAGR of 13.58% from 2025 to 2033, primarily driven by innovations in microencapsulation that enhance bioavailability. Astaxanthin, a potent carotenoid mainly derived from microalgae, krill, and yeast, is valued for its antioxidant qualities that support eye health, skin protection, and immune function. Its market growth is driven by increasing consumer awareness of health and wellness trends, especially in dietary supplements, with the U.S. benefiting from strong agricultural and feed industries, established supply chains, and manufacturing hubs.

Rising disposable incomes and health-conscious consumer behavior further boost demand. Companies are increasingly investing in sustainable sourcing to meet market needs. For instance, in May 2023, BGG World (BGG) and its subsidiary, Algae Health Sciences (AHS), announced the completion of a significant expansion of their state-of-the-art, 100% glass tube photobioreactor microalgae farm. This marks the second major expansion in the last two years and has doubled the capacity of BGG's flagship AstaZine Natural Astaxanthin line.

Natural astaxanthin is preferred over synthetic versions due to consumer demand for clean-label products free from chemical residues, with the aquaculture sector, especially salmon farming, serving as a key growth driver by using astaxanthin to enhance fish pigmentation and health. Innovations like microencapsulation, adopted by a leading nutraceutical brand, improve product stability and bioavailability, and expand uses in functional foods and cosmetics.

In May 2025, the study by Y. Zhang et al. demonstrated an effective method for astaxanthin production using flocculated *H. pluvialis* cultivated as biofilms in a tri-layer tray photobioreactor. This approach improved biomass harvesting efficiency and enhanced astaxanthin yield, offering a promising commercial-scale production technique. Developing advancements, such as advanced extraction methods and sustainable closed-system microalgae cultivation, improve yield efficiency and lessen environmental impact. New delivery formats, including water-dispersible powders for drinks, cater to changing consumer preferences.

Despite challenges from the high production costs of natural astaxanthin, technological progress is expected to lower costs over time. Strategic partnerships between raw material suppliers and manufacturers to streamline supply chains boost efficiency, while regulatory support for natural ingredients ensures compliance with FDA standards. The rising trend toward plant-based and eco-friendly products will likely increase adoption in the nutraceutical and cosmetic sectors, with projections indicating steady market growth through 2033.

U.S. Astaxanthin Market Report Segmentation

This report forecasts revenue growth at the country level and provides an analysis of the latest industry trends in each of the sub-segments from 2021 to 2033. For this study, Grand View Research has segmented the U.S. astaxanthin market report based on source, product, and application:

Source Outlook (Revenue, USD Million, 2021 - 2033)

Natural

Yeast

Krill/Shrimp

Microalgae

Others

Synthetic

Product Outlook (Revenue, USD Million, 2021 - 2033)

Dried Algae Meal or Biomass

Oil

Softgel

Liquid

Others

Application Outlook (Revenue, USD Million, 2021 - 2033)

Nutraceuticals

Cosmetics

Aquaculture & Animal Feed

Food

Functional Foods & Beverages

Other Traditional Food Manufacturing Applications

Others

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