

## **Algae Market Report and Forecast 2025-2034**

Market Report | 2025-07-14 | 158 pages | EMR Inc.

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### **Report description:**

The global algae market size reached a value of approximately USD 23.89 Billion in 2024. The market is projected to grow at a CAGR of 10.60% between 2025 and 2034, reaching a value of USD 65.43 Billion by 2034.

Algae is an aquatic eukaryotic organism that is capable of performing photosynthesis but lacks the specialised multicellular reproductive structures of a plant including true stem, root, and leaves. Algae is extensively used in the production of food and beverages and dietary supplements, among others.

Algae encompass a wide range of organisms, differing in size, colour, structure, and habitat. They include both prokaryotic forms (like cyanobacteria) and eukaryotic forms (like green, red, and brown algae). Like plants, algae conduct photosynthesis, converting sunlight, carbon dioxide, and water into oxygen and biomass, making them important oxygen producers.

Algae contribute significantly to global oxygen production through photosynthesis. Phytoplankton in the ocean is particularly vital in this regard. Algae also absorb carbon dioxide from the atmosphere and water, playing a role in carbon sequestration and climate regulation. Algae serve as a primary food source for a variety of aquatic organisms, including fish, shellfish, and zooplankton.

### **Key Trends in the Market**

Algae is emerging as a promising alternative to chemical pesticides and insecticides

One of the crucial algae market trends is the growing usage of algae as a replacement for chemical pesticides and insecticides owing to its ability to repel pests and suppress the growth of soil-borne plant pathogens, allowing improved plant growth. Some algae produce bioactive compounds that have been found to have pesticidal properties. These compounds can deter, inhibit, or kill agricultural pests, including insects, fungi, and weeds.

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Unlike many chemical pesticides, certain algal-based treatments have the potential to be more selective, targeting specific pests without harming beneficial insects, soil health, or the surrounding ecosystem.

Utilising algae as a natural pesticide reduces dependence on chemical pesticides, which are often associated with environmental and health risks, such as soil degradation, water pollution, and harm to non-target species including pollinators. Algal-based pesticides support sustainable and organic farming practices, aligning with the growing consumer demand for eco-friendly and organic produce.

Algae have become increasingly popular as a source of dietary supplements

Various algal species have high protein content and are rich in essential minerals, such as folate, zinc, and magnesium, because of which they are widely used in dietary supplements, boosting the algae market growth. Organic blue-green algae such as spirulina and chlorella are composed of 70% protein and contain minerals, trace elements, and vitamins.

Spirulina is a blue-green algae renowned for its high protein content, vitamins (especially B vitamins), minerals (such as iron and magnesium), and antioxidants. It's credited with supporting immune function, improving gut health, and potentially having anti-inflammatory and antioxidant effects. Available in powder, tablet, and capsule forms, it's a popular supplement among vegetarians and vegans for its high plant-based protein content.

Chlorella is a single-celled green algae known for its ability to bind to heavy metals and other toxins, aiding in detoxification. It's a rich source of proteins, omega-3 fatty acids, fibre, vitamins, and minerals and is often used to boost immune health, improve cholesterol levels, and as an antioxidant.

Algae's versatility is increasingly recognised in various sectors, including food, paint, and even toothpaste

Increasing applications of algae in the preparation of food products including chocolates, jellies, and ice creams, as well as various other products such as paints and toothpaste is enhancing the algae market demand.

Algae-derived ingredients like carrageenan (from red algae) and alginate (from brown algae) are used as thickeners, stabilisers, and gelling agents in various food products, including ice creams, jellies, and dairy products. Certain algae, such as blue-green spirulina, are used as natural food colourants, offering a healthier alternative to synthetic dyes.

Algae are being explored as a source of natural pigments for paints. These pigments are not only eco-friendly but also offer a range of colours based on the type of algae used. Certain types of algae have also been used as mild abrasive agents in toothpaste, helping in the effective cleaning of teeth without damaging the enamel.

## Global Algae Market Segmentation

The EMR's report titled "Algae Market Report and Forecast 2025-2034" offers a detailed analysis of the market based on the following segments:

### Market Breakup by Type

- Spirulina
- Astaxanthin
- Chlorella
- Hydrocolloids

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- Others

#### Market Breakup by Material Source

- Brown Algae
- Red Algae
- Green Algae
- Blue Green Algae
- Others

#### Market Breakup by Form

- Solid
- Liquid

#### Market Breakup by Application

- Personal Care
- Food and Beverage
- Nutraceuticals and Dietary Supplement
- Chemicals
- Feed
- Others

#### Market Share by Application

The food and beverage segment accounted for a significant portion of the algae market share owing to the rising applications of algae in food products due to various nutritional benefits provided by them. Algae is widely known for its richness in proteins, antioxidants, vitamins, fatty acids, and fibre, along with minerals such as phosphorous, magnesium, iron, and zinc, which are essential for the optimum functioning of the body.

A wide range of dairy products, including milk, cheese, and whipped topping, among others, utilise algae as an ingredient. Further, the use of algae as a food additive in meat processing plants to improve the taste and shape is further boosting its demand across the globe.

The demand for algae in personal care products is rising, driven by trends towards natural, sustainable, and effective ingredients in the beauty and skincare sector. Algae are loaded with essential nutrients like vitamins A, C, E, and B-complex, and minerals like iodine, selenium, and zinc, which are beneficial for skin health.

#### Market Share by Region

North America held a large share of the algae market owing to the rising population in the region, which is increasing the demand for various food products, including dairy. People are becoming more health conscious and thus, the demand for dietary supplements and nutraceutical products is also increasing, which is boosting the demand for algae.

The surge in plant-based diets has boosted the demand for algae as a protein source and as an ingredient in vegan and vegetarian food products. The trend towards eco-friendly and sustainable personal care products is also driving demand for

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algae-based ingredients.

The market in the Asia Pacific region is also anticipated to grow rapidly over the forecast period owing to the rising disposable income of consumers in countries such as India, Japan, and China, and the growing consumption of food and cosmetic products. In many Asia Pacific countries, algae have been a traditional part of the diet for centuries. For example, seaweeds like nori in Japan, kelp in Korea, and various seaweeds used in Chinese cuisine are integral to regional diets. Additionally, the rising population of health-conscious individuals in the region is further boosting the demand for algae.

### Competitive Landscape

The comprehensive EMR report provides an in-depth assessment of the market based on the Porter's five forces model along with giving a SWOT analysis. The report gives a detailed analysis of the following key players in the global algae market, covering their competitive landscape and latest developments like mergers, acquisitions, investments, and expansion plans.

#### Euglena Co., Ltd.

Euglena Co., Ltd. was founded in 2005 and is headquartered in Tokyo, Japan. It is a biotechnology company that is known for researching, developing, producing, and marketing microalgae that is used in various functional foods and cosmetics.

#### Algae Systems LLC

Algae Systems LLC was founded in 2009 and is headquartered in Nevada, United States. The company is focused on providing autotrophic algal solutions for water treatment to its customers globally.

#### Cyanotech Corporation

Cyanotech Corporation was established in 1983 and has its headquarters located in Hawaii, United States. The company is focussed on producing micro-algae such as BioAstin, Natural Asthaxanthin and Hawaiian Spirulina Pacifica.

Other algae market players include Cargill Inc., Exploritech, Inc., Corbion NV, Algatech LTD, Cellana Inc., Earthrise Nutritionals LLC, BASF SE, and DuPont de Nemours, Inc., among others.

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