

November 16, 2016

## DIC Corporation

### **DIC Announces Major Expansion of Production Capacity for *Linablue*<sup>®</sup> — The #1 Natural Blue Food Coloring on Earth —**

*This move will solidify DIC's position as the global leader in the production and supply of Spirulina-derived blue food coloring via its expanded state-of-the-art, integrated production*

**Tokyo, Japan**—DIC Corporation announced today that it will expand the production capacity of its California-based subsidiary Earthrise Nutritionals, LLC for *Linablue*<sup>®</sup>, a natural blue food coloring derived from edible algae Spirulina\*. Investment in this project, estimated at approximately US\$13 million, follows the investment of around US\$10 million in November 2013 for its first expansion. The planned increase in production capacity is undisclosed. New facilities are scheduled to commence operation in 2018.

Consumer concern for food safety and security is rising. The increase in more educated and health conscious consumers have influenced major food product manufacturers in the Americas and Europe to announce their plans to make the switch from using artificial to natural food colorings. In light of these trends, DIC expects that the global market for natural blue food coloring will grow by 50% annually from 2016 through 2020.

In 2013, phycocyanin, the blue food coloring extracted from Spirulina, became the first natural blue food coloring to be approved by the U.S. Food and Drug Administration. Since then, demand for phycocyanin has increased drastically, particularly in the Americas and Europe, which have seen a rapid shift in consumer demand toward natural food colorings. Concurrently, sales of the DIC Group's commercial phycocyanin product *Linablue*<sup>®</sup>—long a global market leader—have risen sharply, particularly for use in frozen sweets and confections. In addition to *Linablue*<sup>®</sup> being used as a vivid blue colorant, phycocyanin can be combined with natural yellow and red pigments to create food colorings that impart more vibrant greens and purples. Accordingly, demand for these applications are also expanding.

Earthrise's integrated production capabilities for Spirulina, encompassing everything from the cultivation of high-grade Spirulina to refining and manufacturing of finished products, ensure the safety and quality of its products and provide peace of mind to its customers. The company's food safety management system has earned certification from major global accreditation organizations, including Food Safety System Certification (FSSC) 22000<sup>†</sup> in 2016. The DIC Group's Spirulina production facility on Hainan Island, in the People's Republic of China, is also working to obtain FSSC 22000 certification.

The DIC Group currently has over 90% of the global market share for Spirulina-derived natural blue food coloring. With the expansion of Earthrise's production capacity, the DIC Group is moving to ensure worldwide supremacy, positioning it to capitalize on sharp market expansion to quadruple its 2015 sales of *Linablue*<sup>®</sup> by

2020.

A pioneer in Spirulina research, the DIC Group is currently exploring ways to extract the other pigments that remain in the Spirulina biomass after the blue pigment has been removed, as well as its use as a plant derived protein in food and animal feed. Having identified Spirulina as a next-generation business to be cultivated under its new medium-term management plan, DIC108, which began in 2016, the Group will also promote R&D aimed at swiftly commercializing products based on these themes.

\* Rich in more than 50 vitamins and minerals, including calcium and iron, Spirulina is a nutrient-rich blue-green algae that grows naturally in lakes in Africa and Central and South America. DIC was the first company to succeed in cultivating Spirulina.

† FSSC is a Global Food Safety Initiative (GFSI) benchmarked scheme that incorporates the requirements of ISO 22000, the International Organization for Standardization's standard for food safety management systems, and the ISO/TS 22002-1 (or ISO/TS-22002-4) prerequisite program on food safety.

## Earthrise Nutritionals, LLC

A wholly owned subsidiary of DIC, Earthrise Nutritionals, headquartered in Irvine, California, is a Spirulina production and sales company with an annual yield of approximately 500 tons. The company's outdoor algae cultivation facility, which covers a total area of 180,000 square meters, is the world's largest. Earthrise is the only company in the continental United States to succeed in the mass cultivation of algae outdoors.

## Outline of Project

Address: 113 E. Hooper Rd., Calipatria, California 92233, U.S.A.  
Investment: Approx. US\$13million  
Increase in production capacity: Undisclosed  
Scheduled date of completion: 2018



Blue food coloring extraction facility slated for expansion