



Press Release

## KAS Debuts Natural Astaxanthin by Novel Fermentation

The company's break-through is comparable to the emergence of algal DHA using fermentation to replace marine oils for healthy, sustainable nutrition.

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Algae technology company, Kuehnle AgroSystems ([KAS](#)), has developed a game-changing fermentation process for the microalga *Haematococcus pluvialis*, a trusted source of natural astaxanthin.

### About Astaxanthin

Astaxanthin is a powerful antioxidant pigment. It is one of the most successful products sourced from microalgae in the market today. In nature it is found in high concentrations only in *Haematococcus pluvialis*. Natural astaxanthin from *Haematococcus* is a prized nutritional supplement for people and pets.

Natural astaxanthin is also seeing rising demand as an essential ingredient in the diets of farmed salmon, shrimp, and egg-laying poultry. For consumers, the pink-red coloration attributed to astaxanthin is an indication of premium quality for their food.

Natural astaxanthin offers excellent opportunities for innovation in a robust market. By some reports the astaxanthin market across applications is forecast to surpass US\$3 billion by 2027.

### KAS's Fermentation Solution

Only KAS produces *Haematococcus* by dark fermentation. The fermentation process is very fast, high yielding, and low cost. It occurs in closed vertical tank systems for minimal water and land use with maximal purity.

And only astaxanthin from *Haematococcus* is truly natural, as it does not arise from mutagenesis or genetic engineering used for all bacterial or yeast sources (including *Paracoccus* bacteria and yeasts). *Haematococcus* is approved for use in the target markets.

*"We believe our bioavailable, all-natural algal astaxanthin will significantly disrupt the animal feed and food ingredients market,"* said KAS CEO, Dr. Heidi Kuehnle. *"End-users in aquaculture operations as well as feed suppliers welcome a path that leads away from using synthetic chemical colorants. Our vision is to offer the natural solution at the same price as synthetic using Haematococcus, known for its added benefits for animal health and well-being."*

### Consumers Demand Natural Ingredients

Astaxanthin can be chemically synthesized or it can be produced by algae and other microbes. The bulk of astaxanthin used today for the large global animal feed market is synthetic astaxanthin.



Legacy algae production technology (like raceways and photobioreactors) cannot supply natural astaxanthin cheap enough and in sufficient quantities required by the feed industry. This leaves consumers stuck with synthetic color in their seafood unless they shop the pricey organic food aisles.

Use of natural astaxanthin dominates nutritional supplements, with many per-reviewed studies showing its superior performance over synthetic.

### **Performance and Commercialization**

KAS's single-cell astaxanthin product shows excellent performance in independent feeding studies in Atlantic salmon, rainbow trout and vannamei shrimp by third parties. In personal care products, the trademarked extract, AstaFusion<sup>®</sup>, has shown novel antiaging benefits for human skin cells (Journal of Oleo Science, in press).

KAS owns intellectual property on the process, products, and production strains.

Scale-up and manufacturing plans are still in development. While KAS is assessing all possible options, including expansion of in-house capabilities, the company is actively seeking strategic partners to bring this exciting new technology to the global aquaculture and other markets.

### **About KAS**

Kuehne AgroSystems (KAS) is a Honolulu-based company focused on cost-competitive ingredients from microalgae. With over 10 years' experience, KAS has built a unique position in the isolation and production of microalgae for commercial applications in the aquaculture, nutraceutical and cosmetics markets.

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