

Algae–Fish Oil Hybrid Formulations

A Strategic Approach to Sustainable, Price-Stable Omega-3 Delivery

OVERVIEW

Naturmega's Research & Development team is actively exploring a new generation of hybrid omega-3 formulations that combine algal oil with fish oil concentrates. This initiative is designed to address two of the most pressing challenges in the omega-3 ingredient market: supply vulnerability linked to climate-driven events and the growing demand for more sustainable sourcing alternatives.

As climate events such as El Niño continue to disrupt anchovy fishing seasons off the South American coast, directly affecting fish oil supply and driving short-term price volatility, blended algae and fish oil formulations offer a meaningful path toward greater resilience. By incorporating fermentation-derived algal oil into existing fish oil concentrates, Naturmega can partially decouple its supply chain from the cyclical pressures of wild-catch fisheries.

STRATEGIC RATIONALE

This development effort is guided by three core objectives:

- **Supply chain resilience:** Algal oil is produced through controlled fermentation, making it independent of seasonal fishing windows and oceanic weather patterns.
- **Price stability:** Blended formulations reduce exposure to fish oil spot price volatility, enabling more predictable long-term pricing for B2B customers.
- **Sustainability positioning:** Algal omega-3 is a well-established plant-derived, vegan-compatible source, supporting clean-label and ESG-aligned product strategies across our customer base.

Why This Matters Now

- El Niño conditions are currently reducing Peruvian anchovy biomass and limiting fishing quotas, putting near-term fish oil supply under pressure.
- European and North American brands are increasingly requesting plant-derived omega-3 options to meet sustainability commitments.
- Algal oil prices have become more competitive at scale, making blended formulations commercially viable for the first time.

FORMULATION PIPELINE — PRODUCTS UNDER DEVELOPMENT

The following hybrid formulations are currently in feasibility and early development stages.

Product Code	EPA (mg)	DHA (mg)	Format
33/22	300	200	EE or TG Oil
400/300	400	300	EE Oil
150/500	150	500	EE or TG Oil

Plus more formulations in pipeline, please inquire for tailor made profiles.

Note: All formulations are in active development. Final specifications, sensory profiles, and stability data will be shared as development progresses.

KEY VALUE PROPOSITIONS FOR B2B CUSTOMERS

- Long-term price predictability: Reduced dependence on wild-catch supply cycles.
- Dual-source omega-3 claims: Enables 'marine + plant-derived' positioning on finished products.
- Regulatory flexibility: Algal DHA qualifies as vegan/vegetarian under most labeling frameworks.
- Sustainability credentials: Supports ESG commitments and retailer sourcing requirements.
- Custom ratio engineering: EPA/DHA ratios tailored to specific application needs (cardiovascular, prenatal, cognitive).

