

# Sustainable and nutritional seaweed from the ocean

For centuries seaweed has been consumed in Asia and large Japanese communities in California and Hawaii. But over the years seaweed is gaining in popularity in the Western world thanks to the potential health benefits, for both humans and animals.

Consumer health and nutrition are becoming increasingly influential in the food industry, thus seaweed is gaining in popularity, and associated product development is evolving. Seaweeds are macroalgae; subclassified as brown (phaeophyte, a common example species of which is kelp or wakame), red (rhodophyta or commonly known as laver, and example of which is nori) or green (chlorophyta, a commonly species of which is ulva or sea lettuce), some of which are edible. To date, seaweed as a 'whole-food' has been added to pasta, bread, and processed and low fat meats.

## Benefits of seaweed for humans

The nutritional profile of seaweed can offer a rich addition to the human diet. The rich mineral and trace element content of seaweed compared to terrestrial foods can impact negatively on its organoleptic characteristics. However, it has been shown to be acceptable to consumers when baked into breads up to 5% and added to pasta up to 10%. Seaweed is also high in fibre and contains many other potentially 'bioactive' compounds. Collectively, it suggests that seaweed may be successfully combined into acceptable food products to potentially enhance their nutritional quality.

## Production and sustainable supply

Seaweeds can be harvested all around the world. Roughly 30% of our seaweeds at IQI come from cold European waters, and 70% from warm Asian waters. In order to have the best benefits for pets a blend of various seaweeds is required. But many of the seaweeds in the blend are not available as such on the market. The supply chain had to be



developed. Most of the supply of fresh seaweed is obtained from local fishermen. As such, these local fishermen can obtain extra income and create a sustainable income.

All our seaweed is sun dried, blended based on a pet specific formula and pelleted and crumbled in order to increase specific density of the final product and improve product handling. The facility handling our seaweeds is GMP+ certified. On request organic seaweed can be supplied.

## Benefits of seaweeds for pets

When ingested by pets, there is an observed prebiotic effect which is thought to be due to the high content of polysaccharides. A prebiotic is; "a substance that is selectively utilized by host microorganisms conferring health benefits." The net effect of prebiotics is a better balance of the gut microbiome and reduced inflammation leading to improved gut morphology (crypt/ villus maturity), and nutrient absorption.

## The benefits of seaweed:

- Improves gut balance and reduces harmful bacteria which cause inflammation in the gut.
- Improves nutrient and mineral uptake.
- Improves regularity and firmness of stools.
- Positively effects physical condition and satiety behavior.

## SEAWEED COMPONENTS AND ITS HEALTH BENEFITS FOR HUMANS

Bioactive Component	Examples	Activity
Polysaccharides (PS)	alginates, carrageenans, laminarin (B-1,3-glucan), floridean starch, fucoidans	anti-thrombotic, anti-coagulant, anti-cancer, anti-proliferative, anti-viral, and anti-complementary agent, anti-inflammatory
Proteins & Amino Acids	Lectins, Phycobiliproteins	anti-inflammatory, anti-bacterial, anti-viral, anti-tumor, antinociceptive; anti-oxidative, anti-inflammatory, anti-viral, anti-tumor, hepatoprotective and neuroprotective
Polyphenols/ Phlorotannins	Phloroglucinol, fucol, Dieckol, etc	Antioxidants
Pigments	Fucoxanthin, Chlorophyll, $\beta$ -carotene	Dyes or pigment enhancement
Fatty Acids	Omega 3, Omega 6	Brain health, resilience to stress, alter Omega 6/3 ratio

**WANT MORE INFORMATION ABOUT OUR PURE SEAWEED BLEND?**

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