



Europe's leading Human Food Seaweed™ food brand

Seaweed is a versatile and abundant source of nutrition commonly used in horticulture, animal feed and as human food. In the West, most 'food quality' seaweed has been imported from Japan, but the vast majority there is now 'farmed' in water tanks on the land. In Europe and North America, traditional artisan producers also collect seaweed of varying quality by hand from the shoreline.



Since 1997, in Norway and Scotland, Seagreens has developed proprietary methods for selecting, harvesting and processing human food quality seaweed™ to provide an improved, consistent standard with higher nutritional values than other wild production methods (Patents Pending), as well as ensuring international compliance for its food and nutraceutical ingredients. Independent analytical studies have compared the international wild seaweed production of five major seaweed producers.

Nutritional quality - typical values	
Seagreens human food quality™	<i>Compared with conventional seaweed production not to Seagreens Human Food Seaweed™ standards</i>
Antioxidants	more than 3.5 times higher
Phenols	more than 3.5 times higher
Vitamin C	more than 16 times higher
Tannins	twice the amount

The nutritional attributes and safety of Seagreens human food quality seaweed, and its effects in food preservation, salt replacement and obesity, and as a prebiotic are proven by independent scientific research. Above all it is a



uniquely well balanced, comprehensive source of all the micronutrients. Seagreens has won awards for its products, its scientific research, and its production.

Finished products for consumers and healthcare practitioners - in these iconic green jars - have been available throughout Europe, the USA and other countries for 15 years with no recall or allergic reaction. In 2012 Seagreens Food Capsules were voted 'Best Vitamin & Mineral Supplement' by consumers and practitioners in CAM Lifestyle magazine. In The Daily Mail, Britain's biggest tabloid, "the UK's No. 1 kelp product"

Seagreens Certified Ingredients are sold to some of the most innovative food and health brands in Europe and North America - including **Artisan Organic, Batchelor's, Bioteekki, Clearspring, Eat Balanced, Napiers, Norganic, Pukka, Viridian** - helping them to produce the finest biodynamic bread, the first nutritionally balanced pizza, raw unpasteurized smoothies and award-winning nutritional supplements. Stories which have delighted the media and consumers.

*Seagreens wild seaweed, Isle of Lewis,
Outer Hebrides - © Leila Angus, 2010*



What makes Seagreens different? Seagreens brand quality begins with the careful selection and monitoring of the age and location of single plant species; their natural reproduction; harvesting a measured amount of fresh growth; immediate transportation and 'raw food' processing. It extends through scientific research to international



regulatory compliance and niche certification.

The result is a unique range of products with outstanding purity and nutritional profile, combined with competent technical support for new product innovation and development.

For example, Seagreens' *Ascophyllum* contains up to

15 times the vitamin B2, 4 times the vitamin B3, 8 times the vitamin C, 15 times the potassium, 50 times the calcium and iron and 30 times the magnesium compared with fruits like raw blackberries and vegetables like boiled broccoli (Food Standards Agency data, 2008).



All of this has made possible the achievement of the company's founding aim "to make it easy to get at least a gram of the best seaweed into our daily diet". Seagreens' dried milled single species make

ideal food ingredients and condiments, while its mixed species in capsules and granules provide a comprehensive nutritional foundation for all ages and health conditions for easy everyday use and in nutritional therapy.

Seagreens products replace all the important micronutrients (eg. minerals, vitamins) lacking in agricultural soils and nutrient-altered manufactured foods. The inadequacy of these nutrients is well documented - the root of most modern health concerns. "Food availability is not the issue. The quality of food is the problem" (United Nations, 2006).



Seals in Scotland's Outer Hebrides love eating seaweed

Wild seaweed species

Seagreens® are distinct species of wild, shallow-water wrack seaweed from the Scottish Outer Hebrides, currently *Ascophyllum*, *Fucus* and *Pelvetia*. These are available in dried granular forms from microfine particles to large pieces. **Of all the world's seaweeds these brown wrack species have the most balanced and complete profile of nutrients. They**

should not be confused with deep water kelp (*laminaria* species), or spirulina and chlorella which are fresh water 'blue-green' algae with the same nutritional deficits as land foods. Even a wide variety of land foods will not provide the comprehensive micronutrient profile and other special nutrients to be found in human food quality wild seaweedTM.

In Europe and America, Seagreens is certified Organic by the
Biodynamic Association and Kosher for Passover by the

London Beth Din



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Granulation better than powder

Seagreens can produce a range of homogeneous particle sizes to suit different manufacturing requirements for flowing, mixing, appearance and taste. For example it developed a micronized fine granule with the appearance of a fine powder to overcome dust and flowing problems in nutritional supplement manufacturing. Powdering can also damage the seaweed's valuable mineral content. Seagreens® employ slow, multi-grinding techniques and the whole production is carried out to meet international HACCP, food

hygiene and British Retail Consortium quality standards.

Where can Seagreens ingredients be used?

In many foods, nutritional supplements and bodycare products, and current research lends particular support for its use in:

- Nutritional supplements and therapeutics
- Breads, cereals and baked goods
- Processed meat products
- Soups, sauces and condiments
- Ready meals
- Special diet foods and dietetics
- Sports and snack foods
- Teas and beverages

*Seagreens was selected as a “Big idea for the future”
by Research Councils UK in 2011*



British innovation with Scandinavian roots

Seagreens was established in 1997 through an English-Swedish-Norwegian partnership. Driven by his long-standing interest in human health, London-based Simon Ranger began

to produce wild seaweed for human nutrition with Ulf Källåker, a Swedish client with business interests in Norway. When Ulf retired in 2000, Simon continued the development process for almost 7 years with Kjell Petterson, a qualified engineer and experienced seaweed producer in Norway's Arctic Lofoten Islands. Then Kjell retired, and in 2009 Simon transferred the food production know-how in a joint venture with Martin Macleod and Malcolm Macrae among the equally remote Scottish Outer Hebrides. The Lofoten factory passed into foreign ownership and sadly no longer produces food quality seaweed. The Scottish factory has won two awards for environmental sustainability.



Consumer and health benefits from scientific research

In 2007 Seagreens entered into a program of independent, applied scientific research, focusing first on the replacement of undesirable additives in manufactured foods, and secondly on the use of Seagreens in satiety and metabolic disorders. **It took five years to prove that Seagreens can be used in many different kinds of foods to improve**

nutritional profile, texture and taste and reduce preservatives and raising agents such as sodium chloride (salt).

Most recently further award-winning studies have shown that the taste and texture of Seagreens is acceptable to consumers at levels sufficient to cause a significant satiety effect in overweight males.



Not only did the trial subjects find the meal palatable - having no idea it contained seaweed - but where a daily deficit of 100 kcal is known to prevent weight gain, the results showed a 179 kcal deficit from a single daily meal.

The research was announced at the 2011 International Nutrition and Health Conference in London and was published this year in the peer-reviewed international journal *Appetite*.

Research conducted elsewhere lends even more importance to these findings, such as a 2011 study of the benefits of seaweed in blood pressure published in *Nutritional Journal*, which concluded that as a long term dietary ingredient in children's foods, seaweed may

reduce hypertension in the adult population. In fact the seaweed species which Seagreens has chosen to produce have been the subject of more scientific research in recent decades than any others.

A global corporate mission

In 2010 with academic and industry partners, Simon Ranger set up the Seaweed Health Foundation, now with centres in

Edinburgh, London and Munich, as a catalyst for research and education to show how the remarkable nutritional composition of these wild ocean vegetables can respond to widespread health concerns.



“There is ample evidence that only a very small number of people choose food because it is healthy, so the food industry has a responsibility to produce healthy food. They have many good people who are beginning to look to seaweed as a new and exciting ingredient, so we need a seaweed industry capable of satisfying this demand, both small artisan and larger scale production” - Seagreens’ founder, Simon Ranger

Addressing the Foundation’s inaugural conference at the Natural History Museum in London in April 2012, Simon Ranger said seaweed is one of most nutritious traditional foods and in the public interest we must protect its nutritional quality and natural habitat.

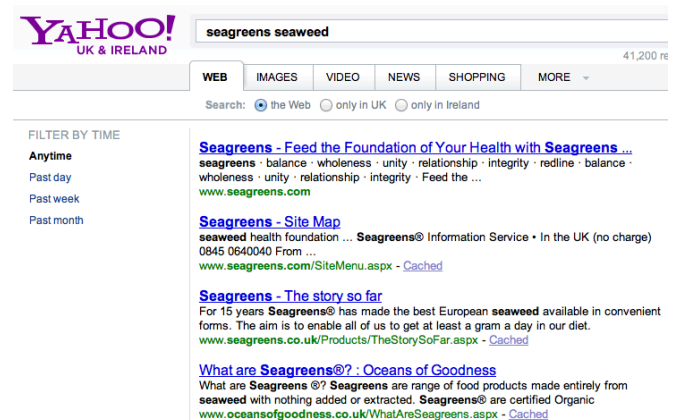
The opportunity for leadership

Today, Seagreens is more than a new idea - it is the harbinger of a promising new industry. Seagreens' human food quality seaweed™ has set an entirely new standard in seaweed food production, opening up opportunities for innovation, product development and international exports. Simon Ranger describes the corporate vision:

“Seagreens is sustained by a multitude of partnerships, not one single company. Health isn't just about the food we eat. It is reflected in the quality of our individual and corporate relationships. The foundation of health is how we treat ourselves, each other and the places we inhabit. There is something for everyone to do. This kind of business - sustainable commercial performance, through integrity without compromise - is true sustainability”.

Since Seagreens launched its first consumer products in 1998, interest in seaweed has increased dramatically:

- In the frequency of scientific publications, by 175% (1998-2011 source: Web of Science, January 2012)
- Featured in the general media, by 100% (1998-2011 source: Lexis Nexis, January 2012)
- In Google searches, by 60% (2004-2001 source Google Trends, January 2012)
- 7 out of the world's top 10 restaurants are serving seaweed (source 2011 survey by The Independent newspaper)!



Most seaweed in the West is still collected on an industrial scale for the extraction of its alginates and for agricultural use, where volume not quality is the focus. In Japan, most seaweed production is no longer wild but farmed, and seaweed farming in land-based tanks has already begun in Europe and North America. Seagreens is unique in having identified and developed the means of sustainable harvesting and production of natural wild seaweed in sufficient volume and to a standard to sustain the demand for nutritious seaweed ingredients in human food and medicine and throughout the food chain. “It is in our own and the public interest to ensure the emergence of a sophisticated, world class industry whose members will be equally committed to the quality of production and our marine environment.”

The Mineral Salt combines 50% Seagreens Hebridean seaweed and 50% unrefined Cornish Sea Salt - uniting two of the world's primordial foods and two of the most sustainable new food producers from the far north and south of the British Isles.



PRODUCT AWARDS

- Best New Product, Complimentary and Alternative Medicine magazine, November 2010
- Highly Commended, Free From Food Awards, April 2011
- Best Organic Product, Healthy Living magazine, December 2011
- Best VMS Product, CAM Lifestyle magazine, February 2012
- ‘Most searched for’ ingredient on Innovadex, the most powerful search engine in the Life Science, Chemical, Food and Beverage industries, May 2012

MANUFACTURING AWARDS

- The British Crown Estate Business Award for Marine Enterprise, 2010
- Environmental Sustainability Award, Scottish Environmental Protection Agency and Scottish Natural Heritage, 2011

RESEARCH AWARDS

- Selected for Big Ideas of the Future by Research Councils UK, 2011
- Alpro Foundation Award, 2011

Malcolm Macrae, Technical Director for Hebridean Seagreens (centre) with on his left, Sir Stuart Hamson, Crown Estate Chairman. in London



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