

LET'S EAT SEA VEGETABLES

a treasure for our health and a new taste in the menus !

Our diving companions, the living concentrate of the sea, veritable horns of plenty on the nutritional level, known since antiquity for their protective and healing virtues, seaweeds are allies of our well-being and our beauty.

My continuing passion for sea vegetables started 19 years ago and it is with great pleasure that I share this passion with you. As a vegetarian chef, I first appreciated this new flavor in cooking « this very delicate seataste » and their user friendliness which blends harmoniously with everything, giving us a new palette of vegetables. As my objective was to replace animal proteins with vegetable sources and to find the most complete combination of amino-acids, the discovery of their optimal and concentrated composition was inevitable. How not to be enticed?

I have been fascinated by the results obtained with the dietary use of algae: to reduce or replace dairy products and animal proteins rich in fats; as a strong boost of minerals and vitamins to combat fatigue and overworking; to facilitate stress management; for the increased mineral requirements of athletes, pregnant women, growing children and convalescents.

Seaweeds are an energetic food, low in calories, rich in prime proteins and a primary source of the invaluable fatty acids Omega 3.

In other words, a blend that has proven itself!

Compared with our often devitalized nutrition, their delicate flavor and their therapeutic properties represent a key food for our times.

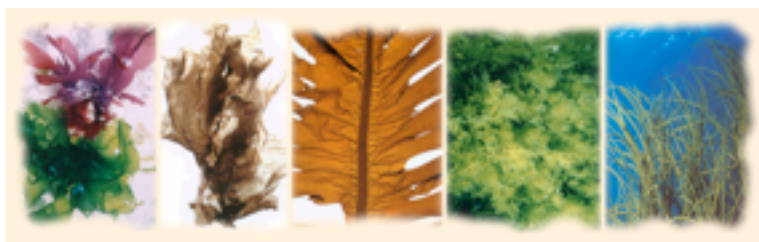
You can combine them with all foods, cooked or raw, knowing that it is a vegetable the ocean offers you. By integrating them regularly in your menus, you are sure to bring to your cells the essential elements of life.

The first plants were seaweed which appeared in the sea

Some one and half billion years ago, animal cells had had enough of looking for bugs to feed on, not very edible and hard to find. Some of the seaweeds had picked up cells - photosynthetic germs – and incorporated them into their systems instead of digesting them. From that moment, all they needed to feed themselves was sunlight and water ... and that's how plants came about!

So, the origin of plant life is that they first stemmed from red seaweed (still the deepest), then brown and finally green seaweed. Terrestrial plants later evolved from green seaweed. About 25,000 different species of seaweed have been found in all the seas worldwide. None of them is toxic.

Every type of seaweed, of whatever variety, contains the entire range of mineral salts (iodine, calcium, phosphorus, potassium, magnésium...) in varying proportions according to the species, but they are all present.



picture N°3- fresh seaweeds

A marine pharmacopea?

The principal interest of marine algae lies in the fact that it concentrates in its tissues the totality of the basic elements which constitute our planet and our body. This exceptional wealth of nutrients presents itself in balanced proportions, close to the ideal for our alimentary needs, and in a natural organic form, which makes them particularly assimilable.

As Quinton showed, our internal environment is like sea water (except salt), which explains why osmosis functions as well between the nutritive elements of the algae and the cells of the human body.

Any marine plant contains all rock salt and trace elements known to date and the unknown ! True store-houses of vitamins, they are tonic, form a shield and stimulate our natural defenses. A communication in 1953 notes that, among the food sources of vitamin B12, marine algae are higher placed than milk and blue-green algae is at the top.

In short, a seaweed is a *seawater concentrate*.

Alkaline food par excellence

Pre-cooked food, stress and tiredness tend to move us towards acidity, while food rich in raw vegetables and maintaining a good mood bring us back into balance.

An alkaline food par excellence, marine algae help to neutralize the acidification caused by the risks of modern life and prevent some of the illnesses of our time (arterial hypertension, osteoporosis, chronic fatigue, digestive disorders...). They have a positive influence on skin beauty, superficial body growth (hair, nails) and its general tonicity.

We saw that seaweed produces its own matter from rays of light « sun's energy » and the mineral salts in seawater. Due to their important and complete content of rock salt (from 8 to 34% of its weight), they are in first place to improve mineral balance : pregnancy, breast feeding, growth, sport, studies, depression.

Osteoporosis, a disease of civilization, increases in Scandinavian countries (animal protein excess, few green vegetables) and is non-existent in regions where food has remained traditional (beans and grains, rich in Mg).

The first rule is to avoid food low in magnesium which supports acidification and tires the kidneys: salt, dairy products, meat, alcohol, tobacco, coffee. The second rule is to consume green vegetables (broccoli, cabbage, nettles, dandelion, spinaches...) sesame and brown seaweed (wakamé, kombu).
Picture : royal kombu



With regular and varied use, you will feel the results.

Can they replace dairy products?

Allergies to milk products are increasingly frequent. For 15 years I have repeatedly noticed that the introduction of sea vegetables in any diet decreases -gently and gradually - the attraction to dairy products. The body finds in marine vegetables a



satisfactory and often final alternative, regulating the problems linked to milk. They are particularly appreciated and efficient with hyperactive children for whom it is recommended to eliminate milk products and sugar.

Some contain from 8 to 14 times (Hiziki picture) more calcium than milk (with potassium and magnesium essential to its assimilation). See tables.

For people suffering from an excess of cholesterol, the phosphorus in seaweed advantageously replaces that of milk products. The advantage is double for us, in our sedentary lives: reduction in the consumption of fat and rest of the elimination organs.

Seaweeds are one of the richest sources of proteins and are assimilable

Proteins constitute the thread of our tissues, the building materials of the cells (growth, cellular regeneration).

Let us differentiate proteins connected to fats (meat, milk, dairy products) and light vegan proteins (from algae, sprouts, grains, legumes, mushrooms). Most proteins are large molecules which digestion must break down into amino-acids to be assimilable by the organism. Those of animal origin are truly cement walls that our body must break down into bricks easy to use. The result is a great energy expense and tiredness (called digestive energy expenditure or ADS in french). With vegan proteins, digestion energy expense is reduced.

According to the kinds of protein and the season, the protein content of algae varies from 7 to 44% ; they are in the form of amino-acids, the simple form of proteins, are more readily assimilated, thus saving digestive work.

In most cases, the essential amino-acids are all present, close to the amount in one egg (reference food). Moreover, they are in free form, immediately available for the body. The proteins of sea vegetables are alkalizing, low in calories and do not produce waste.

Nowadays, researchers agree on a daily requirement of 2.5 to 5%. It is thus ***impossible to have a protein deficiency with a vegan diet including sprouts and seaweeds.***

As proof, 30g of dulse (picture) or nori contain 11g of amino-acids - as much as a steak of 100g - with the difference that, in seaweed, the 89% remaining are vitamins, minerals and carbohydrates – in meat, it is mostly fats.



A great source of high quality carbohydrates

Another important part of their composition (40 to 70% of carbohydrates) is more and more recognized for the harmonization of weight.

Several factors support the elimination process :

- * iodine stimulates the cellular activity and burns the fat reserves. Its deficiency brings about slowness of mind and goitre.

- * thanks to a high content of slow sugars, non-assimilable glucids in the form of soft fibres which inflate, they provide one with full energy without calories, give an impression of satiety and facilitate natural elimination (laxative), qualities recognized as an invaluable aid for the prevention of colon cancer.

- * the active ingredients have a firming effect on the tissues, preventing their relaxation and the formation of stretch marks during dieting. The process is accompanied by a feeling of well-being due to the combined action “mineralisation-detoxification”.

The “shield” effect of seaweeds

Apart from the stimulating effect of the fibres on the intestinal peristalsis, one finds alginic acid in the mucilage of brown algae (kelp, wakamé). Binding with toxic waste (heavy metals, residues of pesticides and ions radioactive) it forms insoluble salts removed from the organism by the intestinal tract. It is one of the most efficient chelators, which cleans up the pollution which poisons our organism.

” In general, the fibres coming from whole foods, raw vegetables, germinated seeds and certain algae have the capacity to drain radioactivity out of the body. A study has shown the presence of a substance in kelp (laminaria) which has the capacity to reduce by 50 to 80% the absorption of radioactive strontium 90 by the intestines: a process called chelation ». Extract of the book Radiations by Dr. J.H. Davidson.

Algae have a low sodium content and do not involve a rise in blood pressure. They are the food richest in organic iodine and of which the bioavailability is very high. They concentrate up to thousand times the iodine of sea water.

« One gram of kombu is enough for the daily ration of iodine and stimulates the energetic metabolism (boosting effect). Moreover, they are “useful in providing the thyroid gland against radioactive iodine contamination and their calcium concentration is useful to fill the bones and to repress the absorption of heavy metals (offering the minimum space)”. Extract of Radiations by Dr. J.H. Davidson.

How much per day ?

A regular portion of a few grams per day is enough, either raw in salads, in the form of flakes or of powder diluted in a vegetable juice. 5 grams of dehydrated sea vegetable are equivalent to 20-30g of fresh, salted seaweeds. The ration per day varies according to the needs and the species.

If you lack nutrients, you will probably have a strong attraction for these powerful plants. Follow this desire and your consumption will regulate itself. In the long run, the ideal is a regular and diversified use in your diet, especially for the harmonious growth of children. An advice: eat more in winter when there is less light, when you are tired, when you must make a required effort and when your immune system feels weak. Your organism will be grateful to you for this highly nutritive vegetable.

Conclusion

For seventeen years I have devoted myself to this experiment, initially on myself and my family, then my friends and a public which widens with the years. I remain filled with wonder at the repeated testimonies and the results obtained with these plants – used as a side-dish or by itself (mono-diet). Seaweeds seem to be an extremely interesting solution for many of the problems connected to our lifestyle. It is on this basis that I wished to draw attention on some strong points of the « most archaic plants of our planet ».

If I were to describe it in a sentence, it would be: “Alga, ambassador of marine balance, a key food of our times, source of deep physical satisfaction, is led to play a big role in repairing deficiencies and in modifying dietary habits which do not correspond anymore to present conditions.”

Carole Dougoud Chavannes

Nutritional value

Due to their composition, they are in first place in most of the contents of major elements for our organism.

Calcium : our daily need is 700 to 900 mg

Iziki	1400 mg for 100 g
Wakamé	1300 mg for 100 g
Aramé, sesame	1170 mg for 100 g
Kelp or kombu (laminaria), sealettuce	800 mg for 100 g
Nori	470 mg for 100 g
To compare :	milk has 100 mg for 100 g - soy 190 mg for 100g



In other words, you would need only one spoon of wakame (picture) when you need 13 spoons of milk to provide the same amount in Calcium. Seaweeds are 7 to 14 times richer in Ca.

Proteins : without any fat

Nori, Dulse	29 to 34 %	as much as fat cheese and soy products
Sealettuce	23,8 %	
Milk	3,3%	and eggs 12,9%

Do you realize that these marine plants are likely to become one of our major sources of protein?

Carbohydrates :

Whole rice	74 %
Ao-nori	61,5 %
Agar-agar	58,4 %
Aramé	50,8 %
Kelp or kombu	49 %
Wakamé	47,8 %
Sealettuce	42 %
Nori	39-41 %
Iziki	30 %

picture Laminaria



Iodine : in a natural organic form, vegetable source

Aramé	98 to 564 mg for 100g
Kelp or kombu	193 to 471 mg for 100g
picture Laminaria digitata	
Dulse	4-54 mg for 100g
Iziki	40 mg for 100g



Wakamé	18 mg for 100g
Nori	0,5 mg for 100g
Seashells	0,29 mg for 100g
Fish	0,07 mg for 100g
Seawater, eggs, meat	0,005 mg for 100g

Fer : in a natural organic form, vegetable source

Ao-nori	106 mg for 100g	
Sealettuce	87 mg for 100g	picture Ulva lactuca
Iziki	29 mg for 100g	
Nori	23 mg for 100g	
Kelp or kombu	15 mg for 100g	- sésame 16 mg
Wakamé	13 mg for 100g	
Aramé	12 mg for 100g	- sardine 10 mg
Spinach	3.3 mg for 100g	



The very famous one :



Let us take as example the **nori**
- sp. Porphyra (red seaweed).

It is the most widely eaten seaweed in the world along with kombu. It is the one which is used to wrap the popular Japanese rice rolls “nori maki”. Nori is still eaten by the English and Irish today (laverbread). In the raw food, we replace the rice by a nuts pâté (picture).

For 100g

Proteins :	29 – 35 %	- 10 essential amino acids in right proportions
Fatty acids :	0.6-0.7 %	- oméga 3
Glucides :	39-40 %	- in the form of mucilages
Minerals :	8-10%	

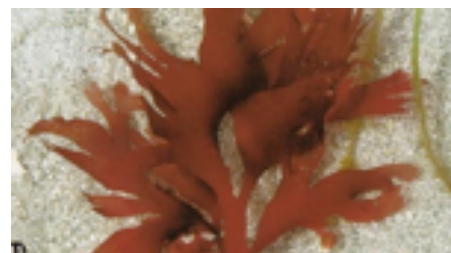
Vit A 44.5 microg / B1 0.25 mg / B2 1.24 mg / Niacine 10 mg / C 20 mg / B6 1.04 mg / B12 13-29 microg / Folic acid 8.8 mg / Ca 470 mg / Iron 23 mg / Iodin 0,5 mg / Phosphorus 510 mg (sésame 600 mg – sardine 499 mg) / Zinc 0.03 -1.8 mg

And the **dulse (deulz in celtic)**

– sp. Palmaria palmata (red seaweed).

Used to be chewed by Celtic warriors as they marched. Sailors would also take it on their long sea trips.

The total amount of minerals in dulse is impressive:



28 to 35 %; its wealth of vitamins and valuable trace elements (such as copper, gold and silver, iron, iodine, Ca) as well as its high protein level (35 %) make it a remarkably healthy food and a natural antibiotic.



Dry or fresh seaweed ?

Their nutritional value is identical, by applying the correct techniques of washing it with seawater and salting for conservation in the fridge

or drying it at low temperatures that maintain its colour, aroma and properties.

Both types of conservation are used for seaweed intended for culinary purposes.

