



Bladderwrack

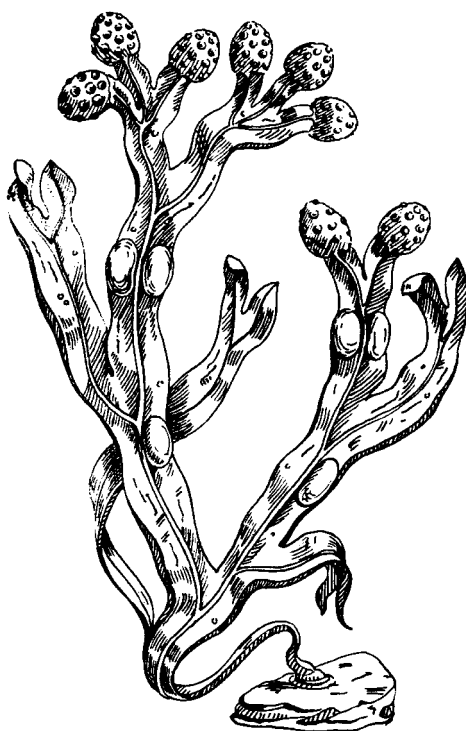
Alban Muller International, le Natural Product Designer®, is specialized in consulting and products for the Health and Beauty industries.

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BLADDERWRACK



Fucus vesiculosus L.

Pheophyceae

BLADDERWRACK.....	3
A BIT OF HISTORY	4
CHEMICAL COMPOSITION	5
BIOLOGICAL AND PHARMACOLOGICAL ACTIVITIES.....	6
AMI EXTRACTS.....	8



BLADDERWRACK

Bladderwrack is a brown dioecious polymorphous alga easily identifiable by the floats scattered on its thallus. Green when fresh, it becomes almost black after drying.

Bladderwrack grows in big masses on the Atlantic or on the Channel coasts. It breaks away during Spring tides and ends up on the beach : it is called wrack in Brittany, kelp or varec elsewhere.

Bladderwrack has been used for a long time.

A long time ago, to treat problems of anaemia and demineralization, people living on the littoral rolled naked rickety children in wrack or gave them fresh bladderwrack juice every day. Bladderwrack was used to cure goitres and scrofulous congestion. It favoured the healing of sores and was recommended against rheumatism. Later on in Berck, it was discovered that sea air rich in iodine and the contact of algae could cure tuberculosis. Nowadays, algatherapy has become a distinct part of sea water therapy.

Harvested by registered people following strict rules which have remained untouched since Colbert, it was buried in fields to fertilize the poor coastal soils. This age-old custom is at

the origin of the "golden belt" of northern Brittany where the first vegetables of the year grow abundantly.

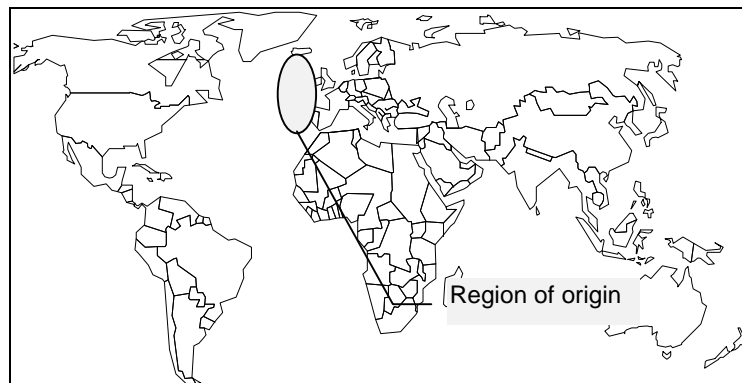
After having abandoned these age-old practices, Britons nowadays produce wrack-based biological fertilizers : they either sell them or use them in cultures, allowing the harvest to be "bio" and thus very sought-after.

In the 19th century, wrack was burned in wide trenches covered with flat stones to give sticks of saltwort. In 1810, Courtois discovered iodine was contained in bladderwrack ashes and the alga was then burned to give iodine until a more modern way of production ruined these industries.

Bladderwrack and devil's apron nowadays produce alginates for the cosmetic and food industries.

Algae were extensively used in poor littoral countries : people slept on varec mattresses believed to fight rickets and, in times of shortage, dried algae were burned as fuel.

Bladderwrack makes a pleasant tea ; the Japanese, masters of this art, actually produce a "tea of algae" the taste, though more refined, is close to stock cubes.



A BIT OF HISTORY



ucus comes from the Greek "phucos", alga.

A long time ago, the Devil and the wind were thought to live in the sea and algae were thus suspiciously considered, their scientific study only began a hundred years ago.

Nonetheless, according to an old tale, Merlin the Enchanter, healed the fresh sore of a sailor by applying a rehydrated piece of seaweed on it.



CHEMICAL COMPOSITION

The thallus contains :

- 55 to 65 % **glucids**, particularly :
 - . oses : fucose, mannitol, sorbitol,
 - . osides : cellulose, mucilages including 18 to 30 % alginic acid and polymannuronic acid, 60 % fucoidane (fucose polymer), laminarane.
- 4 to 10 % **protids** : free amino acids, peptides, enzymes ;
- 1 to 2 % **lipids** : triglycerides constituted in fatty acids such as arachidic acid and eicosapentaenoic acid (EPA), phospholipids ;
- 15 % **mineral matters** rich in chlorine, bromine and iodine, and also arsenic, calcium, iron, magnesium, phosphorus, potassium, silicon, sodium and sulphur ;
- **organic acids** : ascorbic acid (vitamin C) ;
- **phenolic compounds** represented by :
 - . phenols,
 - . quinones, notably phloroglucinols and their oligomers.
- **triterpenes** : steroids (fucosterol), carotenoids (beta-carotene, fucoxanthine, neoxanthine) and squalene ;
- **allantoin**.



BIOLOGICAL AND PHARMACOLOGICAL ACTIVITIES

Bladderwrack is renowned to have laxative and anti-rheumatic properties.

It is also allotted slimming activities given its important content in iodine.

Rich in mineral salts, seaweed presents anti-asthenic activities.

It is moreover allotted haemostatic and cholesterol-lowering properties due to its content in alginic acid.

USES

PHARMACEUTICAL

Associated with dietetic measures, bladderwrack is traditionally recommended to lose weight. It actually brings extra iodine which stimulates the metabolism and gets rid of excessive lipids.

It is moreover used in dietetics to cut the appetite in case of obesity.

Bladderwrack is furthermore an excellent laxative and an efficient remedy against gastric reflux.

The plant is also recommended to treat rheumatism, against external haemorrhages and nosebleed.

The alginates are very appreciated in pharmacotechnology given their binding properties and are used in odontology to make tooth prints.



COSMETIC

Bladderwrack is allotted softening, moisturising and remineralising virtues given its content in alginates and mineral matters. It furthermore presents slimming virtues.

It moreover has gelling and thickening activities. It also has excellent filmforming and sheathing virtues.

Bladderwrack extracts are thus recommended in :

- *lotions for dry, damaged or delicate hair ;*
- *softening gels for around the eyes, notably for damaged and mature skin ;*
- *moisturising creams for dry and sensitive skin ;*
- *hand creams ;*
- *foam baths, shower gels ;*
- *slimming creams.*

Cosmetic usage level :

Extracts : 2 - 5 %



AMI EXTRACTS

Our different extracts are obtained by maceration and percolation of plants, generally dried, in a system of selected solvents. Appropriate processes (filtration, concentration, atomisation) are then implemented to obtain the required qualities.

The chart hereunder recapitulates the main kinds of possible extracts. Given that AMI works with a vast variety of plants, each of these references is not necessarily available for each plant.

Our commercial department will be pleased to inform you and help you chose the existing extract most adapted to your needs. Nevertheless, should you need a missing reference, or even a made-to-measure extract, our technical assistance service proposes easy and flexible development contracts in order to obtain the product which best suits your needs.

Extracts for Cosmetics

Solvent	Standard extracts	Titrated extracts
Propylene glycol	HS	PG titrated
Propylene glycol + water	HG	HPG titrated
Butylene glycol	BG	BG titrated
Butylene glycol + water	HBG	HBG titrated
Glycerine	GL	-
Glycerine + water	HGL	-
Vegetable oil	LS	LS titrated



Extracts for Phytotherapy and Nutraceuticals¹

Kind of extract	Extract	Carrier	Plant concentration (on average)
Dried	Spray dried extract	Maltodextrin	5/1
Liquid, concentrated	EFGL	Water + glycerine	1/1
	Fluid extract	Water + ethanol	1/1
	Concentrated aqueous extract	Water	4/1
	Concentrated fluid extract	Water + ethanol	4/1
Liquid, standard	Tincture	Water + ethanol	0.2/1
	HAGL	Water + ethanol + glycerine	0.2/1
	HYGL	Water + glycerine	0.2/1

¹ Warning : Our customers are responsible for the commercialisation of their products and must conform to the regulations of their country concerning the authorisation of plants, ingredients, additives and claims.