

DWECK DATA

REFERENCES

Fucus vesiculosus

Winter-Griffith, H.: The Vital Vitamin Fact File. 1988. Thorsons Publishing ISBN 0-7225-1693-2.

Winter-Griffith Laminaria, Fucus, Sargassum contains alginic acid, bromine, iodine, potassium, sodium. Provides bulk for bowel movements. Iodine can interfere with normal thyroid function. UNproved, speculative benefits:-treats chronic constipation without catharthis. Softens stools, treats ulcers, controls obesity

Newall, Carol A.; **Anderson, Linda A.** and **Phillipson, J. David:** Herbal Medicines - a guide for health-care professionals. London. The Pharmaceutical Press. 1996. ISBN No. 0-85369-289-0.

Species (Family)

Fucus vesiculosus L. and other *Fucus* species (Fucaceae)

Synonyms(s)

Black Tang, Bladderwrack, Kelp, Kelpware, Rockweed, Seawrack.

Brown seaweeds refer to species of *Fucus*, *Ascophyllum*, *Laminaria* and *Macrocystis*. "Kelps" refer to species of *Laminaria* and *Macrocystis* although kelp is often used in reference to species of *Fucus*.

Part(s) Used

Thallus (whole plant)

Pharmacopoeial Monographs

BHP 1983

BHP 1990

BPC 1949

Martindale 28th edition

Legal Category (Licensed Products)

GSL

Constituents

Carbohydrates Polysaccharides: alginic acid (algin) as the major component; fucoidan and laminarin (sulphated polysaccharide esters).

Iodine Content of various *Laminaria* species has been reported as 0.07 - 0.76% of dry weight.

Other constituents Various vitamins and minerals, particularly ascorbic acid (vitamin C) (0.013 - 0.077% of fresh material).

Food Use

Seaweeds are commonly included in the diet of certain populations. The gelling properties of alginic acid, the major polysaccharide in brown seaweeds including fucus, are extensively used in the dairy and baking industries to improve texture, body and smoothness of products. Fucus is listed by the Council of Europe as a natural source of food flavouring (category N2). This category indicates that fucus can be added to foodstuffs in small quantities, with a possible limitation of an active principle (as yet unspecified) in the final product.

Herbal Use

Fucus is stated to possess antihypothyroid, anti-obesic and anti-rheumatic properties. Traditionally it has been used for lymphadenoid goitre, myxoedema, obesity, arthritis, and rheumatism.

Dose

Dried thallus 5 - 10 g or infusion three times daily

Liquid extract: (1:1 in 25% alcohol) 4 - 8 ml three times daily

Pharmacological Actions

There is a paucity of information documented specifically for *Fucus vesiculosus*, although pharmacological activities are recognised for individual constituents and other brown seaweed species.

Alginic acid is a hydrophilic colloidal substance that swells to approximately 25 - 35 times its original bulk in an alkaline environment and as such exerts a bulk laxative action. It is stated to compare favourably with the carboxylic type of cation exchange resins. The colloidal properties of alginates have been utilised in wound dressings and skin grafts.

Anticoagulant properties have been documented for brown seaweeds. The glucose polymer laminarin has been identified as the anticoagulant principle in a *Laminaria* species. A fucoidan fraction has been isolated from *Fucus vesiculosus* with 40 - 50% blood anticoagulant activity of heparin. The iodine content of seaweeds is well recognised. The low incidence of goitre amongst maritime people has been attributed to the inclusion of seaweeds in their diet. Similarly, the traditional use of *Fucus vesiculosus* in "slimming teas" is thought to be attributable to the effect of iodine on hypothyroidism.

Extracts of various brown seaweeds including *Ascophyllum nodosum* and *Fucus vesiculosus* have been reported to exhibit a high *in vitro* inhibitory activity towards mammalian digestive enzymes (α -amylase, trypsin, and lipase) isolated from the porcine pancreas. Activity was attributed to high molecular weight (30,000 - 100,000) polyphenols. Inhibitory effects of laminarian sulphate on lipidaemia and atherosclerosis (*in vivo*, rabbit), have been partially attributed to their histamine content. However, histamine concentrations varied considerably between preparations and authentic specimens of the *Laminaria* species were devoid of histamine.

Kelp extracts have antiviral activity and laminarin is reported to have exhibited some tumour-inhibiting actions.

Side-effects, Toxicity

Hyperthyroidism has been associated with the ingestion of kelp and is attributable to the iodine content in the plant. Typical symptoms of hyperthyroidism (weight loss, sweating, fatigue, frequent soft stools) were exhibited by a 72 year old woman following 6 months ingestion of a commercial kelp product. Laboratory tests confirmed the hyperthyroidism, although no pre-existing evidence of hyperthyroid disease was found and the condition resolved in 6 months following discontinuation of the tablets. Analysis of the kelp tablets reported an iodine content of 0.7 mg/tablet representing a daily intake of 2.8 - 4.2 mg iodine. Clinically evident hyperthyroidism developed in an otherwise healthy woman following the daily ingestion of six 200 mg kelp tablets. Symptoms gradually resolved on cessation of therapy.

The association between halogen salts and acneiform eruptions is well established. Ingestion of kelp products has been associated with the worsening of pre-existing acne and the development of acneiform eruptions, which improved following withdrawal of the tablets.

The ability of marine plants to accumulate heavy metals and other toxic elements is recognised and the uptake of various radioactive compounds by seaweeds has been reported. Fifteen samples of kelp-containing dietary supplements have been analysed for their iodine and arsenic contents. The levels of arsenic were low in all but one product. The iodine levels varied widely, even between different samples of the same product, and in some products the iodine levels were high in relation to safe daily intake.

Brown algae (*Ascophyllum nodosum* and *Fucus vesiculosus*) have been found to be capable of synthesising volatile halogenated organic compounds (VHOCs). VHOCs are considered to be troublesome pollutants because land plants and animals have difficulty in degrading the compounds which consequently persist in terrestrial ecosystems. VHOCs released into the seawater predominantly contain bromine with iodine-containing compounds showing a slower rate of turnover. Concentration of iron by brown seaweeds has been attributed to fucoidan, and alginic acid exhibits a high specificity for the binding of strontium. Elevated urinary arsenic concentrations (138 ad 293µg/24 hour) in two female patients have been associated with the ingestion of kelp tablets. Subsequent analysis of the arsenic content of various kelp preparations revealed concentrations ranging from 16 to 58 µg /product. The botanical source of the kelp in the products was not stated.

Ascophyllum nodosum is commonly added to animal foodstuffs as a source of vitamin and minerals, with beneficial results reported for dairy cattle, sheep, pigs, and poultry. Feeding studies using *A. nodosum* have highlighted an atypical toxic response of rabbits compared to that of rats and pigs. Addition of *A. nodosum* to the diet of rabbits (at 5 - 10%) caused a severe drop in haemoglobin content, serum iron concentrations and packed cell volume, leading to weight loss and death in two thirds of the animals. No differences in renal and liver function, and in lipid metabolism were found between test and control animals. Similar, but much milder, toxicity has also been observed in rabbits fed *Fucus serratus*. Subsequent studies incorporating *A. nodosum* into the feed of rats and pigs failed to demonstrate the toxic effects observed in rabbits. The toxic components in *A. nodosum* have been reported to be non-

extractable with chloroform, ethanol, water and 20% sodium carbonate solution, remaining in the insoluble residue.

Contra-indications, Warnings

The iodine content in kelp may cause hyper- or hypothyroidism and may interfere with existing treatment for abnormal thyroid function. In view of this, ingestion of kelp preparations by children is inadvisable. The iodine content in kelp has also been associated with acneiform eruptions and aggravation of pre-existing acne. In general, brown seaweeds are known to concentrate various heavy metals and other toxic elements. Elevated urinary arsenic concentrations have been traced to the ingestion of kelp tablets. Prolonged ingestion of kelp may reduce gastrointestinal iron absorption (binding properties of fucoidan), resulting in a slow reduction in haemoglobin, packed cell volume and serum iron concentrations. Prolonged ingestion may also affect absorption of sodium and potassium ions (alginic acid) and cause diarrhoea.

Pregnancy and lactation The safe use of kelp products during pregnancy and lactation has not been established. In view of the potential actions on the thyroid gland and possible contamination with toxic elements, the use of kelp should be avoided.

Pharmaceutical Comment

Kelp is a generic term that strictly speaking refers to *Laminaria* and *Macrocystis* species of brown seaweeds, although in practice it may be used in reference to other species of brown algae including *Nereocystis* and *Fucus*. The species *Fucus vesiculosus* is reported to be commonly used in the preparation of kelp products. The principal constituents of seaweeds are polysaccharides. For brown seaweeds the major polysaccharide is alginic acid (algin). Fucoidan, present in all brown algae, is thought to refer to a number of related polysaccharide esters whose main sugar component is fucose. The traditional uses of kelp in obesity and goitre are presumably attributable to the iodine content, although the self-diagnosis and treatment of these conditions with a herbal remedy is not suitable. There have been no documented studies supporting the traditional use of kelp in rheumatic conditions. In view of the iodine and potential accumulation of toxic elements, excessive ingestion of kelp is inadvisable. Doubt over the quality of commercial seaweed preparations has been reported.

[M. Caramez de Gouvea: Seaweed in Cosmetics. Cosmetics and Toiletries 95, December 1980.](#)

Seaweeds have been used in cosmetics as alginates, carrageenan, and agar-agar. Many authors have reported that seaweeds are an important source of numerous materials important in the development of both internal and extracellular biological reactions.

They offer this possibility because they are about ten times richer in oligo-elements than land plants. They contain numerous rare minerals, soluble salts and other beneficial materials.

Seaweeds can be divided into four main groups on the basis of colour: green, blue, brown and red. The first two are not of interest cosmetically; this is not true of the brown and red variety.

Brown and red algae accumulate energy reserves in the form of sulphated polygalactosides, agaroids, agar-agar, alginates, iodised proteins and so forth. Certain species can contain up to 50% protein. Several protein mineralised elements have been identified; iron, manganese, copper, zinc, molybdenum, cobalt, strontium, vanadium, boron and base iron sodium, magnesium, chloride, iodide, sulphate, phosphate; and ergosterol and carotene. Amino acids found include serine, alanine, arginine, glycine, lysine, asparagine, valine and others. Polysaccharides include fucose, xylose, mannose, galactose, and glucose. Vitamins are also present – K, C, D, E, A and folic and pantothenic acid have been identified.

Seaweed can be used in anti-cellulite preparations. The action of the sulphated polygalactosides on skin and hair has been observed and studied, and have the singular property of reacting with proteins to form a gel with them. Numerous products have used this property to moisturise the skin, soften the hands and body and produce smoothing facial masks and shampoos. Application tests of formulated products have shown an important smoothing and softening effect, especially in people over 50 years of age. An accentuated reduction of coarseness in strongly keratinised regions, such as elbows, knees and feet, was also seen. It is thought that these polysaccharides absorb external water while reacting with the skin's proteins, forming a large volume gel with a revitalising effect that can be felt mainly in drier and aging skins.

Use of 2-5% of seaweed extract in shaving creams offers protection against irritation of sensitive skins.

It will improve hair with split ends, or that damaged by frequent bleaching and dyeing.

Grieve, Maud.: *A Modern Herbal*, 1984 Savvas Publishing. ISBN unknown.

Grieve, Maud: *A Modern Herbal – the medicinal, culinary, cosmetic and economic properties, cultivation and folklore of herbs, grasses, fungi, shrubs and trees with all their modern scientific uses.* 1998 Tiger Books International, London. ISBN No.1-85501-249-9.

Grieve reports on *Fucus vesiculosus* or Fucus, Sea-wrack, Black Tang. *Quercus marina*, Cutweed, Bladder Fucus. Fucus (varech) vesiculeus, Blasentang, Seetang, Meeriche. Found on the submerged rocks on both coasts of North America and in Europe North of the Mediterranean. Seaweed that is burnt and dried becomes Kelp, and consists of various species including *Fucus serratus*, Black Wrack, *Fucus nodosus* (Knobbed Wrack), *Laminaria digitata*. The laminaria contains ten times more iodine than fucus.

Contains 0.1% volatile oil, cellulose, mucilage, mannite, colouring matter, bitter principles, soda and iodine, bromine compounds of sodium and potassium. The saline constituents constitute 14-20% of the ashes which the dry plant yields 2.5-4%. 0.8% of a sugar named fucose exists in dried seaweed and this yields an alcohol fucitol. The air in the vesicles contains more oxygen than the outside air with a lower percentage of nitrogen. The value of the potash content makes it a good fertiliser.

Kelp or dried seaweed was original source of iodine in the form of iodides and iodates (chiefly sodium and potassium). Uses:- Bladderwrack not largely used at the moment. Any virtues may have been due to the iodine it contained. The charcoal has more uses.

The full report is here:

Bladderwrack

Botanical: *Fucus vesiculosus* (LINN.)

Family: N.O. *Fucaceae*

Synonyms: *Fucus*. Sea-Wrack. Kelp-Ware. Black-Tang. *Quercus marina*. Cutweed. Bladder *Fucus*. *Fucus* (*Varech*) *vesiculeux*. Blasentang. Seetang. Meeriche.

Parts Used: The dried mass of root, stem and leaves. (The thallus.)

Habitat: North Atlantic Ocean.

Description: Almost all the more solid *Algae* were formerly described by the name of *Fucus*, but now it is applied to one genus of *Fucaceae*, most of the species of which are found only in the northern seas, many being more or less exposed at low water. *Fucus vesiculosus* is found on submerged rocks on both coasts of North America, and in Europe north of the Mediterranean, where it drifts in from time to time through the Strait of Gibraltar.

The perennial frond or thallus is coarse, light yellow or brownish-green in colour, erect, and from 2 to 3 feet in height. It attaches itself to the rocks by branched, rootlike, discoid, woody extremities, developed from the base of the stalk. The frond is almost fan-shaped, narrow and strap-shaped at the base, the rest flat and leaf-like in form, wavy, many times divided into two with erect divisions having a very strong, broad, compressed midrib running to the apex. The margin is entire, the texture tough and leathery, mainly olive brown in colour, the younger portion yellower, shining. Air vesicles developed in the substance of the frond, usually in pairs, one on either side of the midrib and often one at the fork of the divisions, broadly oval, or spherical, attaining when fully grown half an inch in diameter, are the characteristics of this species which have suggested both the English and Latin names.

The fructification is contained in small globose conceptacles with a firm wall lined with numerous jointed hairs and sunk in the surface of large ovoid-oblong or narrower pointed or blunt, swollen receptacles, filled with a transparent mucous. These attain an inch in length and are situated at the ends of the divisions of the fronds.

The entire living plant is gathered from the rocks about the end of June and dried rapidly in the sun, when it becomes brittle and may be easily reduced to a coarse powder. Care should be taken to turn it frequently, to avoid the development of a putrid odour. If dried by artificial heat, it retains its hygroscopic qualities and does not become brittle. It is in perfect condition only during early and middle summer, and should not be collected when too fully matured, as it quickly undergoes decomposition. When thrown up on the shore by the sea, the seaweed is not suitable for medicinal purposes, as the soaking of the detached plants in sea-water causes the

loss of important constituents by diffusion from cells containing protoplasm which has lost its vitality.

As found in commerce, the drug *Fucus* is hard and brittle, forming a much wrinkled mass, blackish or with more or less of a whitish efflorescence or incrustation, but it acquires a cartilaginous consistency when slightly moistened. It has a strong, seaweedlike odour and a nauseous, saline and mucilaginous taste. Occasionally, from some unexplained cause, it is very astringent. The powder is reddish brown, with numerous fragments of epidermal tissue, with polygonal cells from 0.012 to 0.025 mm. in length.

Bladderwrack is a valuable *manure* for potatoes and other crops and is gathered for this purpose all along the British coast. It is largely used in the Channel Islands, where it is called *Vraic*, the early potatoes from Jersey being grown by seaweed manure. Fresh seaweed contains 20 to 40 lb. of potash to the ton, and dried seaweed 60 to 230, so that its collection and use were strongly recommended to farmers while the War caused a shortage of artificial fertilizers. It may be spread on the land and left for some time before ploughing in, but should not be left in heaps, as rotting liberates the potash which may be wasted. The seaweed may be dried and burnt to ashes, then sprinkled on the ground as *Kelp*.

The early broccoli from Cornwall is fertilized with wrack, and on the west coast of Ireland, driftweed is almost the only manure used for raising potatoes. In the Channel Islands it is used for producing the smoke for drying bacon and fish, while in the Hebrides, cheeses while drying are covered with the salty ashes, and horses, cattle and sheep have been fed with it.

During the War the French Ministry of War experimented with regard to the value of seaweed as food for horses. A batch of twenty fed on the usual ration of oats and fodder gained eleven kilogrammes *less* in two months than a similar number fed on the same weight of seaweed. Another trial resulted in the cure of some sick horses fed on seaweed, while others fed on oats remained out of health.

In Denmark, a few years ago, the possibility of making *paper* from seaweed was mooted, but the cost of collecting probably proved too serious an obstacle. It is also possible that considerable quantities of *alcohol* might be obtained from various species.

Many attempts have been made to make kelp-burning successful by finding a use for by-products from destructive distillation in retorts, but the cost of collection, drying and fuel prevents such experiments being financially profitable. There were at one time flourishing kelp industries in the Hebrides, and Lord Leverhulme, the owner of Lewis Isle, sent experts to report on the possibilities, but his death and lack of official support caused the matter to be dropped.

Kelp is prepared from several species of *Fucus* (including Black Wrack, *F. serratus* and Knobbed Wrack, *F. nodosus*, and on the coast of France about a dozen other species) and from the deep-sea tangle, *Laminaria* species, especially *L. digitata*. The latter yield 'drift-wood kelp,' obtainable only when cast up on the shore by gales or other causes. These contain ten times as much iodine as the *Fuci* and are practically

now the only kelps used in making iodine. The species of *Fucus* growing within the tidal range and cut at low water are called 'cut-weeds.'

F. vesiculosus is the badge of the M'Neills.

Constituents: Bladderwrack contains about 0.1 per cent. of a volatile oil, cellulose, mucilage, mannite, colouring and bitter principles, soda and iodine, and bromine compounds of sodium and potassium. These saline ingredients constitute 14 to 20 per cent. of its ashes, which the dry plant yields in the proportion of 2.5 to 4 per cent., and also remain in the charcoal resulting from its exposure to heat in closed vessels. The proportions, especially of iodine, vary according to both locality and season. They are most abundant at the end of June. It has been stated that 0.8 per cent. of a sugar named Fucose exists in dried seaweed, and that this yields an alcohol, Fucitol. The air in the vesicles consists of a considerably higher percentage of Oxygen and a lower percentage of Nitrogen than in the outer atmosphere. Its value as a fertilizer is due to its potash.

One hundred pounds of red wrack, dried to a moisture content of 10 per cent., when heated for a short time with weak sulphuric acid and the acidity still further reduced after cooling, may be fermented with brewers' yeast and is then capable of yielding about 6 litres of alcohol on distillation. It is alleged that under industrial conditions this amount might be increased.

Kelp, or dried seaweed, was the original source of iodine, being discovered as such by Courtois in 1812, when investigating the products obtained from the mother-liquors prepared by lixiviating burnt seaweed. Iodine does not occur in nature in the uncombined condition, but is widely, though sparingly distributed in the form of *iodides* and *iodates*, chiefly of sodium and potassium, in seawater, some seaweeds, and various mineral and medicinal springs.

Kelp-burning as a source of iodine is a dead industry, owing to a cheaper process of obtaining it from the mother-liquors obtained in the purification of Chile saltpetre, and the use of kelp - an impure carbonate of soda, containing sulphate and chloride of sodium and a little charcoal - as a source of alkalies for soap and glass manufacture has been rendered obsolete by the modern process of obtaining carbonate of soda cheaply from common salt. Unless very recently discontinued, however, the preparation of iodine from kelp is still carried on at Glasgow.

Several methods were employed: (1) the weeds being dried in the sun, burned until formed into a confused mass, and sprinkled with water to break it up into pieces which were treated at chemical works; or (2) the seaweed was heated in large retorts, whereby tarry and ammoniacal liquors pass over and a very porous residue of kelp remained; or (3) the weeds were boiled with sodium carbonate, the liquid filtered and hydrochloric acid added to the filtrate, when alginic acid is precipitated; this is filtered off, the filtrate neutralized by caustic soda and the whole evaporated to dryness and carbonized.

The resulting kelp was then lixiviated with water, which extracts the soluble salts, and the liquid concentrated to crystallize the less soluble salts for removal. The addition of

sulphuric acid set chemical processes in action, which finally liberated the iodine from its compounds.

Three tons of Tangle (*Laminaria*) give a ton of kelp, or 20 tons of cut-weed, or *Fucus*. Good drift may yield as much as 10 to 15 lb. of iodine per ton, and cut-weed kelp only 3 to 4 lb. Other constituents vary from 2 to 10 per cent. in different samples.

Medicinal Action and Uses: Bladderwrack is not largely used at present, any virtues it may have being due to the iodine contained in it. It has alterative properties, has been used in scrofula, and is thought by some authorities to reduce obesity through stimulating the thyroid gland.

The charcoal derived from Kelp has been used in the treatment of goitre and scrofulous swellings under the name of *Æthiops vegetabilis* or *vegetable ethiops*, introduced by Dr. Russell in 1750, who also used a jelly for similar purposes, both internally and externally. He was also successful in dispersing scrofulous tumours by rubbing in the mucus of the vesicles of Bladderwrack, afterwards washing the parts with sea-water. The charcoal was also helpful in goitre. The iodine from other sources led to the neglect of kelp products.

In 1862 Dr. Duchesne-Duparc found while experimenting in cases of chronic psoriasis, that weight was reduced without injuring health, and used the drug with success for the latter purpose. Dr. Godfroy experimented on himself, losing five and a quarter pounds in a week after taking before three meals a day an extract made into pills containing 25 grams (3.75 grains). The bromine and iodine stimulated the absorbent glands to increased activity, without causing an atrophied wasting of the glands. Later experiments of Hunt and Seidell indicated that the result is brought about by stimulation of the thyroid gland.

Sea-pod liniment, is the expressed juice and decoction of fresh seaweed as dispensed by sea-side chemists for rheumatism, and the extract, taken continuously in pills or fluid form is reputed to relieve rheumatic pains as well as to diminish fat without harm.

Sea-pod essence is good for rubbing into sprains and bruises, or for applying on wet lint under oiled silk, as a compress, changed as often as hot or dry. It may be preceded by fomentations of the hot decoction.

Embrocation for strengthening the limbs of rickety children can be made from the glutinous substance of the vesicles, bottled in rum.

Fucus or Seaweed wine, from grapes and dried *Fucus*, has been praised as a remedy in diseases of the hip and other joints and bones in children.

For external application to enlarged or hardened glands, the bruised weed may be applied as a cold poultice.

Dosage: Of charcoal, 10 grains to 2 drachms.

Of extract, 3 to 10 grains, in pills, massed with powdered Liquorice or Marshmallow roots, to reduce swelling and obesity.

Of liquid extract, 1 to 2 fluid drachms. It is the basis of many advertised nostrums. Sodium and potassium iodides are often added to supplement the small proportion of iodine. It is used in mixture form, generally with alkali iodides and sometimes in combination with *Liquor Thyroidei*.

Of decoction, 2 fluid ounces, three times daily.

Of infusion, 1 wineglassful.

Solid extract may be dissolved in diluted alcohol and mixed with *syrup*.
(All doses for combating obesity are gradually increased.)

Of fluid extract, 10 minims.

The Alginic acid obtained from seaweed is used to form an organic compound with iron, which is sold under the trade name of *Algiron* or *Alginoid Iron*. It contains about 11 per cent. of iron and is given in doses of 2 to 10 decigrams (3 to 15 grains). *Fucol* is a trade name for a cod-liver oil substitute, said to be obtained from roasted Bladderwrack with a bland oil. It is green in colour, and resembles coffee in odour and taste.

Fucusin tablets are recommended in obesity.

Other Species

F. nodosus the Knobbed Wrack, has a narrower thallus, without a midrib and single vesicles.

F. serratus, the Black Wrack, has a veined and serrate frond, without vesicles. Both contain the same constituents as Bladderwrack.

F. serratus has been much used in Norway for feeding cattle, being called there 'cowweed.' Linnaeus stated that in Gothland the inhabitants boiled it with water, mixed it with a little coarse meal or flour, and fed their hogs with it, for which reason they called the plant 'Swine-tang.' In Sweden the poor people covered their cottages with it and sometimes used it for fuel.

F. siliquosus has a very narrow frond, with short branches and articulated vesicles of a pod-like appearance.

This and the two preceding species are permitted by the French Codex to be employed in the place of *F. vesiculosus*.

F. natans (*Sargassum bacciferum*) is the Gulf-weed of the Atlantic Ocean and is often found in immense masses floating in the sea.

The frond is terrate and has linear and serrate branches and globular vesicles of the size of a pea.

F. vesiculosus was reputed to be the *Antipolyscarcique nostrum* of Count Mattei.

F. canaliculatus is remarkable for its amphibious habits, growing on large boulders and recovering after being baked by the sun into hard brown masses.

F. amylaceus, or Ceylon Moss, abounding in starch and vegetable jelly, is used like carrageen, or Irish moss.

F. Helminthocorton (Corsican Moss or *Gigartina Helminthocorton*) is regarded in Europe as an anthelmintic and febrifuge. It is an ingredient in the trade mixture called Corsican Moss, used in decoction of from 4 to 6 drachms to a pint, the dose being 1 wineglassful three times a day.

Another seaweed, *Agar-agar*, of the East Indies, is sent to China in large quantities for making jellies and for a size used in stiffening silks. An aperient medicine is known by its name. (American.)

Laminaria digitata, sea-girdles or tangles, of Scotland, gives a good substance for bougies. The stems are strong and tenacious, from 2 to 12 inches long and an inch or more wide, drying easily with much shrinkage and becoming firm, only slightly softer than horn, and yet elastic. It may be kept thus for years, and will absorb moisture at any time and swell to the original size, thus being valuable for dilating bougies and tents.

The Laminariaceae species are very remarkable in many ways. *L. digitata*, *L. stenophylla*, and *L. saccharina* are the principal ones associated with the kelp industry.

F. crispus is a name of *Chondrus crispus* or *Gigartina mamilliosa* (Irish Moss or Carrageen) of European coasts, well known as a demulcent. Dosage, 4 drachms.

Wren, R.C.: [Potter's New Cyclopaedia of Botanical Drugs and Preparations, 1985 8th impression, published C.W. Daniels. ISBN 0-85032-009-7.](#)

Potter refers to Kelpware, Cutweed. A seaweed common to the British Isles. *Fucus serrata* has no air vesicles, while *Fucus nodosus* has the air vessel single (not in pairs).
Uses:- deobstruent, antifat. It influences the kidney and acts as an alterative. Used for the extraction of iodine, but the process is no longer economical. Also a substance called algin is prepared which is a dressing for calico.

Stuart, M.: [The Encyclopaedia of Herbs and Herbalism. 1986. Orbis ISBN 0-85613-700-6. signed edition.](#)

Stuart, Malcom: [Illustrated guide to Herbs. CPG \(Cambridge Physic Garden\) Edgerton International Ltd. 1994 \(originally published 1979, see also B28\). signed edition.](#)

Stuart says that although it is commonly called Kelp, this is normally applied to the species *Laminaria* which are somewhat larger algae. One of several seaweeds used both as a food and as a medicine. Iodine was first discovered by distillation of *Fucus* in the early 19th century. Contains:- a gelatinous substance, algin; mannitol; iodine; a volatile

oil; b-carotene; zeaxanthin; various inorganic substances. Used (dried whole plant) anti-obesic, anti-hypothyroid. Decoction of the whole fresh plant may be applied externally in rheumatism and rheumatic arthritis. One of the commercial sources of alginates.

Weiss, R.F.. Herbal Medicine. (translated from the 6th. German edition of Lehrbuch der Phytotherapie by A.R.Meuss). The Bath Press. 1986. ISBN 0-906584-19-1.

Weiss says that Fucus vesiculosus or Bladderwrack was a specific for obesity. The action of the drug is due to its iodine content, which activates the thyroid gland. There are better methods for achieving this effect

Mills, S.Y.: The A-Z of Modern Herbalism, A comprehensive guide to Practical Herbal Therapy. Thorsons 1989 (retitled) ISBN No. 0-7225-1882-X. signed edition.

Mills refers to Kelp as Bladderwrack, Black-tang, Rockweed, Fucus vesiculosus. A familiar seaweed in the form of long ribbons or thalli, around 100cm long and 5cm across, leathery, shiny, olive-green to yellow-brown; down the centre of each thallus is a midrib on either side of which are the air-filled bladders which keep the seaweed (actually alga) floating up from its rock anchorages. There are other species. Contains mucilage, pigments, fucosterin, fucoxanthin, zeaxanthin, iodine and many other minerals in large quantity. It is gentle metabolic stimulant; nutritive; thyroid restorative; alterative. It is used for low metabolic rate, low thyroid activity and other symptoms of a sluggish constitution; chronic joint and other inflammations.

Powell, E.F.W.: The Natural Home Physician, A Book for Every Household. Health Science Press 1981 reprinted 2nd ed. ISBN No. 0-85032-092-5.

Powell refers to Bladderwrack, which he says is also known as Kelp, and is one of the popular "cure-alls". It is one of the few natural remedies that is not contaminated by chemical sprays and poisonous fertilisers. Originally, kelp was chiefly used as a remedy for obesity; and here again its value is probably due to its iodine content. It will also help people to put weight on, and is thus to be considered as a normaliser. It has a beneficial action on almost every organ of the body and is good for endocrine gland troubles, nervous disorders, indigestion, poor assimilation, female disorders, liver congestion and sexual disturbances.

Kelp is very rich in many vital cell minerals in addition to iodine.

Seaweeds' Extract in Cosmetics by **R.C.R.Barreto**. Conference presented to the IV Meeting of Cosmetic Chemists of the Brazil Association of Cosmetic Chemistry. Brazil August 1984.

In this paper it was remarked that the skin characteristics of some of the workers hands were much improved in respect of smoothness, lustre and hydration. Calousness disappeared and skin tonus was clearly better.

The skin feels softer to the touch, and after a short period, creases and wrinkles are less evident. The skin has a more youthful appearance. Moisturisation is so effective that it reduces the symptoms of excess exposure to sunshine, such as reddening or blistering. It

does not have any UV filtering effects. It is good for superficial abrasions, irritation and redness, such as would be caused by shaving.

It is of benefit in hair care, increasing resistance (strength?-ACD), lustre and softness, and decreasing its static charge. The hair shows more body and is less fly-away.

British Herbal Pharmacopoeia, The: 1983. ISBN 0-903032-07-4. British Herbal Manufacturers Association (B.H.M.A):

In the British Herbal Pharmacopoeia we read that it is called Bladderwrack, Sea wrack, Kelp-ware and Black tang. *Fucus* contains a gelatinous substance, algin; mannitol; beta-carotene and zeaxanthin.

Small variable amounts of iodine and very small amounts of bromine, occurring as inorganic salts with only traces in organic combination.

It is anti-hyperthyroid, anti-obesic and antirheumatic. It is indicated for myxoedema, lymphadenoid goitre, obesity. Rheumatism and rheumatoid arthritis, internally or the juice applied topically.

Hoffmann, D.: The Herb Users Guide. 1987 Thorsons Publishing. ISBN 0-7225-1288-0.

Hoffmann, D.: The New Holistic Herbal. Element. Second impression 1991. ISBN No. 1-85230-193-7

Hoffmann, D.: Thorsons Guide to Medical Herbalism - a comprehensive and practical introduction. reprinted 1991, formerly The Herb users guide. ISBN No. 0-7225 2494 3 (see B7).

In a reference from Hoffmann we read that Bladderwrack *Fucus vesiculosus* is rich in alginin and mannitol, carotene and zeaxanthin. Iodine and bromine are present. It is anti-hypothyroid and anti-rheumatic.

Bladderwrack has proved most useful in the treatment of underactive thyroid glands and goitre. Through the regulation of the thyroid function there is an improvement of the associated systems. Where obesity is associated with thyroid trouble, this herb may help in reducing the excess weight. It has a reputation in helping the relief of rheumatism and rheumatoid arthritis, both used internally and as an external upon inflamed joints.

Chiej, R.: The Macdonald Encyclopaedia of Medicinal Plants. 1984, reprinted 1988. Macdonald Orbis. ISBN No. 0-356-10541-5 (hb), -10542-3 (pb).

Chiej refers to *Fucus vesiculosus* as bladderwrack. The thallus is used, which contains algin, alginic acid, fucose, iodine, bromine, potassium, mannite. It is slimming, glandular resolvent. It is used as the decoction, fluid extract, dry extract.

NOTE: Tannin, strophanthus, citric acid, caffeine and *Nux vomica* are all contraindicated in the use of this seaweed. Apart from its pharmacological uses, it is also utilised industrially to extract potassium salts and iodine. Nearly all of the slimming products on

the market contain bladderwrack, but its many contraindicated substances complicate its application. Many cosmetics which have a basis of bladderwrack make use of its local fat dissolving properties.

21. http://www.phytotherapies.org/monograph_index.cfm

Monograph : Fucus vesiculosus

Common name: bladderwrack

Other names: kelp, blæretang

Family: Phaeophyceae

Parts used: above ground parts

Description

Seaweed found attached to rocks along the coasts of the North Atlantic ocean; occurs as a flat, mucilaginous, olive brown thallus with spherical air vesicles.

Cautions

Not recommended for those with an over-active thyroid.

Dose Dry Herb: 2.5 to 6 g per day.

Dose Extract: 30 to 60 ml per week (1:1).

Indications

rheumatism, rheumatoid arthritis, thyroid gland, debilitated, weight loss, to assist

Qualities

cold 1st degree, moist

Actions

antiobesity, antirheumatic, thyroid stimulant

Constituents

minerals, polyphenolics, polysaccharides, sterols

Pharmacological studies

Mucous membrane irritation

Evidence for bioadhesive effects of polysaccharides on buccal membranes

Clinical studies: Not yet available.

Morris CA, Nicolaus B, Sampson V, Harwood JL, Kille P: Identification and characterization of a recombinant metallothionein protein from a marine alga, *Fucus vesiculosus*. *Biochem J* 1999 Mar 1;338 (Pt 2):553-60

School of Biosciences, University of Wales Cardiff, P.O. Box 911, Cardiff CF1 3US, Wales, UK.

A cDNA library was constructed from macroalgae adapted to prolonged elevated environmental copper levels. To investigate the possible existence of a metallothionein (MT) gene, the library was screened with degenerate probes designed using plant MT cysteine-rich motifs. A gene was identified (1229 bp) with a putative open reading frame (204 bp) encoding a 67-amino-acid protein exhibiting several characteristic features of MT proteins, including 16 cysteine residues (24%) and only one aromatic residue. Although the protein sequence showed high identity with plant and invertebrate MTs, it contained a unique 'linker' region (14 amino acid residues) between the two putative metal-binding domains which contained no cysteine residues. This extended linker is larger than the tripeptide found in archetypal vertebrate MTs, but does not conform either with the 40-amino-acid linkers commonly found in plant MT sequences. An S-peptide *Fucus* MT fusion protein expressed in *Escherichia coli* exhibited a relative molecular mass of approximately 14 kDa. The recombinant fusion bound seven Cd ions, of which 50% were dissociated at pH 4.1. Under anaerobic conditions, the Cd ions were displaced by Cu(I), which associated with the protein at a ratio of 13:1. Laboratory exposure of *F. vesiculosus* to elevated copper resulted in induction of the MT gene. Thus this paper describes, for the first time, an MT gene identified from macroalgae which is induced by copper exposure and whose encoded protein product binds cadmium and copper.
PMID: 10024535, UI: 99156759

Durig J, Bruhn T, Zurborn KH, Gutensohn K, Bruhn HD, Beress L: Anticoagulant fucoidan fractions from *Fucus vesiculosus* induce platelet activation in vitro. *Thromb Res* 1997 Mar 15;85(6):479-91

Dept. of Internal Medicine, University Hospital Kiel, Germany.

Anticoagulant fucoidan fractions of different molecular weight and sulfate content were prepared and investigated for their effects on platelet function in vitro. The fucoidan fractions were incubated with human platelet rich plasma (PRP) at concentrations of 5, 10 and 50 micrograms/ml. Platelet activation was subsequently studied by a standard aggregation assay and flow cytometric determination of the activation dependent platelet-surface markers CD62p (P-selectin, GMP-140) and CD63 (GP53). All fucoidan fractions induced irreversible platelet aggregation in a dose-dependent manner. Comparing fractions of identical molecular weight (100 kDa) the low sulfate content fucoidan FF5 (S = 7.6%) exerted a significantly greater effect than the highly sulfated fucoidan FF7 (S = 10.2%) over the whole concentration range (n = 5, P < 0.05). Among fractions of identical sulfate content fucoidan-induced platelet aggregation was also found to depend on the molecular weight of the fucoidan. At concentrations of 10 and 50 micrograms/ml the high molecular weight fraction FF7/1 (150 kDa) showed a significantly greater effect than the 50 kDa fraction FF7/3 (24.8 +/- 6.7 vs. 7.0 +/- 3.5 and 54.6 +/- 13.5 vs. 15.0 +/- 9.0%, respectively; mean +/- SD, n = 5, P < 0.05). The molecular weight dependence of the fucoidan effect was also reflected by the flow cytometric data. Coincubation of FF7/1 and FF7/3 (10 micrograms/ml) with PRP increased the number of CD62p and CD63 positive platelets by 9.0 +/- 3.3 vs. 2 +/- 1.9 and 7.1 +/- 2.4 vs. 3.2 +/- 2.6% over control values, respectively (n = 5, P < 0.05). In conclusion, our results show that the low molecular weight fucoidan FF7/3 combines potent anticoagulant and fibrinolytic properties with only minor platelet activating effects and is therefore a suitable substance for further pharmacological studies.

PMID: 9101640, UI: 97256309

Beress A, Wassermann O, Tahhan S, Bruhn T, Beress L, Kraiselburd EN, Gonzalez LV, de Motta GE, Chavez PI. A new procedure for the isolation of anti-HIV compounds (polysaccharides and polyphenols) from the marine alga *Fucus vesiculosus*. *J Nat Prod* 1993 Apr;56(4):478-88. Published erratum appears in *J Nat Prod* 1996 May;59(5):552

Institute of Toxicology, Christian Albrechts-Universitat, Kiel, Germany.

Anti-HIV-active polysaccharides and polyphenols were isolated from the brown seaweed *Fucus vesiculosus* by hot H₂O extraction of both the intact and the homogenized algae. This was followed by XAD2 chromatography and by sequential precipitation of the non-adsorbed compounds with glacial HOAc and thereafter with EtOH. The precipitate was solubilized, dialyzed against distilled H₂O, and chromatographed on SP-Sephadex C25 and on QAE-Sephadex A25. This was followed by gel filtration on Sephadex G50 and Sephadex G100 and finally by hplc on a Shodex Ionpak S-804 column. For comparison, the commercial product fucoidan, a sulfated algal polysaccharide, was also further purified by the chromatographic techniques mentioned above. The isolated freeze-dried fractions obtained by these procedures were tested for inhibition of both HIV-induced syncytium formation and HIV reverse transcriptase enzyme activity. Some of these fractions inhibited both of these activities at concentrations that were not cytotoxic.

PMID: 7684438, UI: 93267253

Lamela M, Anca J, Villar R, Otero J, Calleja JM: Hypoglycemic activity of several seaweed extracts. *J Ethnopharmacol* 1989 Nov;27(1-2):35-43

Departamento de Farmacologia, Farmacia y Tecnologia Farmaceutica, Facultad de Farmacia, Universidad de Santiago de Compostela, Spain.

The hypoglycemic activity of several seaweed extracts on rabbits was studied. Ethanol extracts of *Laminaria ochroleuca*, *Saccorhiza polyschides* and *Fucus vesiculosus* were administered orally to normal animals and their effects on glycemia and triglyceridemia evaluated. Crude polysaccharides and protein solutions from *Himantalia elongata* and *Codium tomentosum* were also assayed. Polysaccharides and proteins from *H. elongata* caused a significant reduction in blood glucose 8 h after intravenous administration. A dose of 5 mg/kg of crude polysaccharide lowered glycemia about 18% in normal rabbits and by about 50% in alloxan-diabetic animals, while the protein solution lowered glycemia in diabetic rabbits by about 30%.

PMID: 2615424, UI: 90135222

Criado MT, Ferreiros CM: Selective interaction of a *Fucus vesiculosus* lectin-like mucopolysaccharide with several *Candida* species. *Ann Microbiol (Paris)* 1983 Mar-Apr;134A(2):149-54

A complex carbohydrate specific lectin-like mucopolysaccharide extracted from the brown alga *Fucus vesiculosus* was found to agglutinate *Candida guilliermondii* cells but not those of other species of the same genus (except for a weak agglutination with *C. krusei*). The selective binding of this mucopolysaccharide correspondingly affected

the growth of the yeasts. The results suggest that there are notable differences--at least with respect to the receptors for the F. vesiculosus mucopolysaccharide--between C. guilliermondii, C. krusei and the other Candida species.

PMID: 6223551, UI: 83254289

Wagner M, Wagner B: Agglutinins in marine brown algae. Dedicated to Professor Dr. H. Knoll on his 65th birthday. *Z Allg Mikrobiol* 1978;18(5):355-60 [Article in German]

Extracts from the brown algae *Fucus vesiculosus*, *F. serratus*, and *Halidrys siliquosa* agglutinated human erythrocytes of groups A, B, O, and AB as well as erythrocytes from some animal species, ascites tumour cells from mice, and streptococci of many groups of the LANCEFIELD system. The extract of *Chorda filum* did not show haemagglutination but agglutinated ascites tumour cells and streptococci of a few groups. PMID: 567898, UI: 79016752

INTERNET Source

Bladderwrack Thallus

(*Fucus vesiculosus*)

Traditional and Contemporary Use: as a general metabolic stimulant, to reduce adipose tissue (fat); Demulcent, alterative, antiscorbutic, antisiphilitic, antiseptic, antiarthritic, glandular stimulant, detoxifier, nervine, laxative, antidyscrastic, antiachectic, antiputrefactive, antirheumatic, nutrient, thyroid restorative, and vulnerary.

As per German Commission E Monograph*: *Bladderwrack Thallus*, *Fucus vesiculosus*, or *Ascophyllum nodosum* "Unapproved Herb";

Use: Diseases of the thyroid, obesity, overweight, arteriosclerosis and digestive disorders, as well as for "cleansing the blood."

Fucus vesiculosus **(Bladderwrack, Kelp)**

Botanicals

Therapeutic Actions:

- Antibiotic activity
- Anti-obesity agent, probably due to the effect on an underactive thyroid
- Diuretic
- Immunomodulatory
- Induces lymphocyte transformation
- Metabolic stimulant
- Supplies minerals and trace elements like iodine, in the form of inorganic salts or bound to proteins and lipids

Clinical Indications:

- [Chronic fatigue syndrome](#)
- [Hypothyroidism](#)
- [Multiple sclerosis](#)
- [Obesity](#) associated with hypothyroidism
- [Rheumatoid arthritis](#) (external poultice)
- Any condition where fatigue is a complication

Contraindications:

- Goiter
- Graves disease
- Hyperthyroidism
- Lactation
- Pregnancy

Drug/Nutrient Interaction:

- Lithium carbonate enhances large doses of iodides found in bladderwrack

Chemical Constituents:

- Fucophorethols which are polyhydroxyoligophenylethers
- High molecular weight phlorotannin derivatives
- [Iodine](#)
- Mannitol
- Mucopolysaccharides including algin
- Mucilage
- Phenolic compounds:

Free
Fucols

phloroglucinol

- Polar lipids
- [Potassium](#)
- Sulphuryl-, sulphonyl- and phosphonyl-glycosyl estr diglycerides
- Volatile oil

Toxicity:

- See contraindications

Copyright 1998 - 2001 by Natural Medical Solutions. All rights reserved (ISSN 1527-0661).

THE ENCYCLOPEDIA OF PURE MATERIA MEDICA

By **TIMOTHY F. ALLEN, A.M., M.D.**

Presented by Médi-T

FUCUS VESICULOSUS.

Fucus vesiculosus, Linn. (includes various forms of different tidal levels, called *Divaricatus*, *Inflatus*, *Spiralis*, *Volubilis*, *Sheradi*, *Bicornis*, *Microphyllus*, etc.).

Natural order, Algæ. *Common names*, Sea Kelp; (Fr.), La Varech.

Preparation, Tincture and triturations of the dried plant.

Authorities. **1**, Duchesne Duparc, general effects when taken for obesity, Monthly Hom. Review, 1863, p. 12, from Revue de Thérap. Méd.-Chirurg.; **2**, Godefroy, effects on self (aged 57 years, weight about twelve stone) of the alcoholic extract, taken for obesity; 5 grains, three times daily, for thirty days; twice daily for ten days; three times daily for twenty-eight days; Brit. Journ. of Hom., 21, 171, from Revue de Thérap. Méd.-Chirurg.; **3**, Boinet, effects of the extract - 400 pills, taken at the rate of twenty per day - on a very fat lady, aged 32 years; Gaz. des Hôp., Jan. 3d., 1863. **4**, Duparc, effects of 400 pills of the extraction on a baker so fat that he could not go outdoors, Gaz. des Hôp., Jan. 3d., 1863.

HEAD. ► Intolerable headache; forehead felt as if compressed by an iron ring, [3].

STOMACH. ► The stomach acts with more rapidity, and the hour of repast is more impatiently looked for, [1]. ► The act of digestion is no longer accompanied by flushings of the face, fulness, weight in the epigastric region, and fits of heat towards the head, [1]. ► Qualmishness, [3]. ► Weight in the stomach, [3].

ABDOMEN. ► Flatulency diminishes and then disappears in those who have been habitually accustomed to it, [1].

STOOL. ► Obstinate constipation (the first day), [3].

URINARY ORGANS. ► Urine became more abundant, more colored, and more odorous than usual, [2]. ► It is only after two or three septenaries that the urine becomes more abundant, and begins to present upon its surface a coating or black film, [1].

RESPIRATORY ORGANS. [10.] ► Sense of suffocation, especially during menses, [3].

INFERIOR EXTREMITIES. ► Skin of thighs and legs soft and flabby, [4].

GENERAL SYMPTOMS. ► Lost upwards of five pounds weight, without any change in habits or diet, or experiencing any inconvenience from the use of the remedy, [2]. ► Diminution of six pounds in weight (but on continuing the medicine her embonpoint returned), [3]. ► Diminution of thirty pounds in weight, [4]. ► The resolvent properties are manifested, and the first intimations of becoming thinner are displayed, from the period (after two or three septenaries) when the urine becomes affected. They are every day more decided, and though various in degree, have never yet failed. The thinness is not always produced in a uniform manner; I have seen it limited to isolated parts, which are, then, almost always those where the fatty tissue accumulates in the greatest abundance; thus, with one it is in the chest, with another

in the abdomen, and with a third in the nape of the neck and upper part of the shoulders, [1]. ► He feels lighter, more active, [1].

Copyright © Médi-T ® 2000

BLADDERWRACK

Synonyms: Black-Tang, Bladder Fucus, Bladder-Wrack, Common Sea Wrack, Cutweed, Fucus, Kelp, Kelpware, Rockweed, Sea Kelp, Sea Ware, Seawrack

Family: Fucaceae, Phaeophyceae

Genus species: *Fucus vesiculosus*, *Ascophyllum nodosum*

Type: Brown algae

Part Used: Whole plant

Homeopathy: Tincture and trituration of the dried plant

Location: rocky coasts of Atlantic and Pacific Oceans, France, Ireland, U.S.

Actions: Absorbs toxins from the bowels, anabolic agent, anti-inflammatory, antihypothyroid, antirheumatic, beneficial to sensory nerves and membranes surrounding the brain, blood purifier, bulk laxative, demulcent, emollient, increases and enhances metabolism, increases the population of beneficial intestinal bacteria (acidophilus and bifidophilus) and eliminating undesirable and pathogenic bacterial population, lowers bowel transit time, muscular alterative, nutritive, radiation damage preventative, skeletal alterative, strengthens connective tissues (bones, hair, nails, skin and teeth), thyroid alterative, tonic

Indications: Arthritis, atherosclerosis, debility, eczema, enlarged glands, fatigue, fatty heart, hair loss, hypothyroidism, lymphadenoid goiter, malnutrition, myxedema, obesity, parasites, psoriasis, rheumatism, rheumatoid arthritis, ulcer
Homeopathic Indications: Obesity, dyspepsia, goiter

Chemicals & Nutrients: Aluminum, Bromine, Calcium, Carbohydrates (65%), Chlorophyll, Fats (3%), Fiber (10%), Iodine (2,800 ppm), Lead, Magnesium, Mercury, Phosphorus, Potassium, Protein (7%), Sodium (5%), Vitamin C

Preparation & Dosages:

Dried thallus: dose 5-10 g or by infusion

Liquid extract: 1:1 in 25% alcohol, dose 4-8 ml

Warning: Overdose may lead to hyperthyroidism, thyrotoxicosis, tremors, increased pulse rate and elevated blood pressure. May be high in arsenic. Symptoms of an overactive thyroid are: heart palpitation, restlessness, insomnia. May contain heavy metals, cadmium and mercury.

Contraindications: Hyperthyroidism, cardiac problems, pregnancy and lactation.

Safety: GRAS.

Copyright © 1996-1997 by 3DTX Corporation. All rights reserved.

Purple Sage Data base

Fucus vesiculosus (L)

Synonyms: Kelp, black tang, rockweed, sea wrack, kelp-ware, bladder fucus, cutweed, Quercus marina, cutweed, blasentang, seetang, meeriche

Order: Fucaceae

Description: Fucus is a common seaweed in the form of long ribbons, about 1m long and 5cm across, leathery, shiny, olive-green to yellow-brown. Down the centre of each ribbon is a midrib, on either side of which are the air-filled bladders which keep the alga floating up from its rocky anchorages. It is found on the north Atlantic and Baltic coasts, the Irish and North Seas and is often washed up on beaches after storms.

Parts used: The whole plant

Collection: It is best to collect bladderwrack from the sea in its healthy, live state than to gather it from beaches. It should be dried as soon as possible.

Constituents: Mucilage, algin and mannitol, beta-carotene and zeaxanthin; iodine, bromine, potassium, and many other minerals, volatile oil

Actions: Anti-hypothyroid, thyroactive, anti-obesic, antirheumatic, demulcent, gentle metabolic stimulant, nutritive, adaptagen, thyroid tonic, anti-inflammatory

Indications: myxoedema, lymphadenoid goitre, obesity, rheumatism, rheumatoid arthritis

Therapeutics and Pharmacology: Fucus, rich in iodine, stimulates the thyroid gland, thereby increasing basal metabolism. It is a useful remedy in the treatment of hypothyroidism, goitre myxoedema and lymphadenoid goitre. By regulating thyroid function, there is an improvement in all the associated symptoms. Fucus also appears to assist in the problem of lipid balance associated with obesity, and where obesity is associated with thyroid dysfunction, this herb may help to reduce excess weight. It has a reputation in the relief of rheumatism and rheumatoid arthritis and may be used both internally and as an external application for inflamed joints. The main phytotherapeutic use of Fucus is during debility and convalescence, and also to remineralise the body.

Combinations: Fucus combines well with Gaultheria in a paraffin base for application as a plaster to affected joints in rheumatoid arthritis.

Caution: Fucus should not be used in cases of hyperthyroidism or cardiac problems, or during pregnancy and lactation. Excessive dosage may lead to hyperthyroidism, tremor, increased pulse rate and elevated blood pressure. However, there is wide variation between individuals in susceptibility to excess iodine. Current US guidelines

on iodine intake imply that 100 micrograms a day is considered safe. Like many sea creatures, bladderwrack is at risk from heavy metal pollution, and should not be collected where levels of cadmium and mercury are known to be high.

Preparation and Dosage: (thrice daily)

Regulatory Status: GSL

Dried thallus: 5-10g or by infusion

Liquid Extract: 1:1 in 25% alcohol, 4-8ml

Additional Comments: This seaweed was the original source of iodine, discovered in 1812. and it was used extensively to treat goitre, a swelling of the thyroid related to lack of iodine. In the 1860s it was claimed that bladderwrack, as a thyroid stimulant, could counter obesity by increasing metabolic rate, and, since then, it has featured in numerous slimming remedies. Farmers in the south of England use bladderwrack as a potash fertiliser.

Bibliography

Bradley, P.R. (ed.) 1992 *British Herbal Compendium, Volume 1*, BHMA, Bournemouth.

BHMA 1983 *British Herbal Pharmacopoeia*, BHMA, Bournemouth.

Grieve, M. 1931 *A Modern Herbal*, (ed. C.F. Lye 1985), London.

Hoffmann, D. 1990 *The New Holistic Herbal*, Second Edition, Element, Shaftesbury.

Mabey, R. (ed.) 1991 *The Complete New Herbal*, Penguin, London.

Mills, S.Y. 1993 *The A-Z of Modern Herbalism*, Diamond Books, London.

Ody, P. 1993 *The Herb Society's Complete Medicinal Herbal*, Dorling Kindersley, London.

Polunin, M. and Robbins, C. 1992 *The Natural Pharmacy*, Dorling Kindersley, London.

Weiss, R.F. 1991 *Herbal Medicine*, Beaconsfield Arcanum, Beaconsfield.

Wren, R.C. 1988 *Potter's New Cyclopaedia of Botanical Drugs and Preparations*, C.W.Daniel, Saffron Walden.

King's American Dispensatory

Fucus Vesiculosus.—Bladder-Wrack.
The marine plant, *Fucus vesiculosus*, Linné.
Nat. Ord.—Fucoideae.

COMMON NAMES: *Bladder-wrack*, *Sea-wrack*, *Cut-weed*, *Kelp-ware*, *Black-tang*, *Quercus marina*.

ILLUSTRATION: Bentley and Trimen, *Med. Plants*, 304.

Botanical Source.—*Fucus vesiculosus* is a perennial sea-weed. Its root is a hard, flattish disk. The frond or thallus ranges from a few inches to 4 feet in length, and from 2 lines to an inch in width, is flat, furnished with a midrib throughout its length, occasionally twisted in a spiral manner, repeatedly dichotomous, the angles of the dichotomy acute, except when a solitary vesicle happens to be placed there; the sterile branches are obtuse, and often notched at the extremity. The air-vessels vary from the size of a pea to a hazel-nut, and are placed in pairs, situated at irregular intervals in different parts of the frond; sometimes 2 or 3 pairs are arranged next to each other; and they are rarely altogether wanting. The receptacles are terminal, compressed, mostly ovate or elliptical, about 1/2 inch long, but varying from nearly spherical to linear-lanceolate, and from 1/4 inch to nearly 2 inches long; they are mostly in pairs, but are sometimes solitary, and occasionally forked. They are filled with a clear, tasteless mucus. The whole frond is proliferous in a remarkable degree in cases of injury, throwing out numerous new shoots from the injured part

History, Description, and Chemical Composition.—*Fucus vesiculosus*, *Sea-wrack*, or *Bladder fucus*, is a common marine plant, growing upon the sea shores of Europe and America. Its substance is rather thick, but flexible and tough, with a dark, olivaceous, glossy-green color, paler at the extremities, and becoming black by drying. Its odor is strong, its taste quite disagreeable, and it contains cellulose, mucilage, mannit, odorous oil, coloring and bitter matters, sodium, and potassium combined with iodine, bromine, and chlorine. The ash of this plant amounts to about 3 per cent; of this ash, iodine constitutes about 0.7 per cent. On account of the iodine contained in its charcoal, known as *Vegetable ethiops* (*Aethiops vegetabilis*), it has been found beneficial in scrofulous enlargements of the glands; the plant being incinerated in a covered crucible, and the charcoal given in doses of from 10 grains to 2 drachms. When burned in the open air it yields *kelp*; it is used as a manure in some places, and is also fed to cattle during the winter. Probably other species of *Fucus* have analogous virtues.

Action, Medical Uses, and Dosage.—M. Duchesne Duparc recommended an infusion of this plant or the extract in pill form for the purpose of lessening *obesity*. It requires to be used 3 or 4 weeks before this effect will be observed, which is preceded with an augmented secretion of urine, presenting a black pellicle upon its surface upon standing for a short time. Others have confirmed this statement regarding it. Later experiments by numerous good observers do not seem to indicate that sea-wrack has any power as a fat-reducer, but that the reduction which takes place in some instances is undoubtedly due to the dietary measures which are a part of the treatment. It is thought, however, to have some power of toning muscular fiber, and has been suggested to prevent *fatty degeneration of the heart*. It influences the kidneys, lessening renal congestion and resultant irritation, and is therefore of service in *acute desquamative nephritis*; it also relieves *cystic irritation* and *chronic inflammation of the bladder*. Take of specific fucus from 5 to 20 drops, every 3 hours. It was at one time recommended to remove *deposits* and *tissue hypertrophies*, as well as *benign* and *malignant tumors*. It is a remedy which deserves a careful investigation, especially in regard to its influence over waste and nutrition. It acts quite powerfully upon the

glandular system as an alterative, and is recommended for *menstrual derangements* with weak, flabby uterine walls. Dose, of specific fucus, 5 to 30 drops.

Related Species.—The following plants are thought to possess similar properties, the first mentioned having been allowed by the *French Codex* as a substitute for bladder-wrack: *Fucus siliquosus*, Linné, (*Cystoseira siliquosa*, Agardh; *Halidrys giliquosa*, Lyngbye), *Fucus serratus*, Linné, *Fucus natans*, Linné (*Sargassum bacciferrum*, Agardh), *Fucus nodosus*, Linné, (*Fucodium nodosum*, Agardh) *Fucus digitatus* contains much more iodine (7 or 8 times as much) than bladder-wrack

David Hoffman data base

Bladderwrack

© [David L. Hoffman, M.N.I.M.H.](#)

Fucus vesiculosus
Fucaceae

Names : Kelp, Seawrack, Kelpware, Black-tang, Bladder Fucus, Cutweed.

Habitat : A seaweed common in colder waters.

Part Used : The whole plant.

Constituents :

- Phenolic compounds, phloroglucinol, its dehydropolymerization products the , the fucophorethols, phlorotannin derivatives
- Mucopolysaccharides, algin.
- Sulphuryl-, sulphonyl- and phosphonyl-glycosyl ester diglycerides
- Polar lipids
- Trace metals, particularly iodine.

Actions : Anti-hypothyroid, anti-rheumatic.

Indications : Bladderwrack has proved most useful in the treatment of under active thyroid glands and goitre. Through the regulation of thyroid function there is an improvement in all the associated symptoms. Where obesity is associated with thyroid trouble, this herb may be very helpful in reducing the excess weight. It has a reputation in helping the relief of rheumatism and rheumatoid arthritis, both used internally and as an external application upon inflamed joints.

Ellingwood describes the uses of *Fucus* thus: "This agent is used for the specific purpose of reducing unhealthy fat in excessive adiposity. If given in doses of from 1/2 to 2 drams, 3 or 4 times daily, it has reduced excessively fat patients in a satisfactory manner without interfering in anyway with the normal health functions.

"It is in the obesity of individuals of the lymphatic temperament that the beneficial effects of this drug are the most marked. It has little or no influence in the reduction of the fleshiness of persons of active habits or of those of the sanguine temperament. In

these cases strict regulation of the diet affords the only prospects of relief, but owing to the keenness of the appetite usually present, this regulation is rarely enforced. Fucus shows its most decided influence upon women in whom there exist menstrual derangement's, as menorrhagia and leucorrhoea, owing to a general a tonic and flabby condition of the uterine tissues. In such cases an improvement in the local derangement's usually precedes the general reduction of fat and the improved tonicity of the general system. Fucus is advised as a specific remedy in the treatment of both exophthalmic and simple goitre. It is especially successful in patients not above 30 years of age. It is also suggested in the treatment of fatty degeneration of the heart. It is of service in desquamative nephritis and in irritation and inflammation of the bladder. When general muscular relaxation is present, it is of service in the treatment of menstrual derangement's."

Preparations & Dosage : It may usefully be taken in tablet form as a dietary supplement or as an infusion by pouring a cup of boiling water onto 2-3 teaspoonfuls of the dried herb and leaving it to steep for 10 minutes. This should be drunk three times a day.

Supplier data

In a data sheet from **Alban Muller** on *Fucus vesiculosus* we read that this is an alga which belongs to the Fucoaceae family which is found on the Atlantic and the Channel coasts. Thanks to a black callous disc it is closed to the substratum. Green when fresh it turns olive-brown when dried. It contains about 15% water, 15% mineral matter high in chlorides, bromides and iodides and which are fairly rich in arsenic (0.07%), 2% of lipids, and 10% of protids. Glucids which account for 55-60% are mainly represented by a mucilage composed of a chain of alginic acid. For a long time seaweed has been known and used as an emollient, soothing and bechic product having anti-inflammatory and anti-coagulant properties. Seaweed is recommended to contend with bronchele and strumous congestions. Furthermore, it has been shown that seaweed favours the reabsorption of fatty tissues by endocrinal stimulation and by regulating the metabolism of the fat substances (for this reason it has been said that the remedy is active in the treatment of psoriasis caused by lipid problems). Results can be noted after three weeks particularly on specific parts of the body such as the hips, the belly and the neck. It is used against rheumatism, it eases pain at the level of small and medium circulations. Eases the breathing of asthmatics. In cosmetics, seaweed is mainly used in slenderising products, for seborrhoeic skins and bath products.

In a data sheet from **Cosmetochem** we read of *Fucus laminaria* which is found around the shores of the North Sea and Atlantic (particularly Brittany) and Pacific Oceans. It contains Iodine and Bromine compounds, mucous substances and carbohydrates. It is used in slimming preparations and massage preparations.

In a data sheet from **Active Organics** we read that *Fucus vesiculosus* is known as Bladderwrack, Sea-Wrack, Black Tang, Sea Wave, Kelp, Fucus, Quercus marina, Cutweed, Bladder Fucus, Blasentang, Seetang, Meeriche. Historically it was used for obesity (excellent source of iodine) and cellulitis. Used as a wash for psoriasis. Good for sprains and bruises. Used in products to stimulate the hair and scalp.

In a data sheet from **Provital (ex S.Black)** we read that *Fucus vesiculosus* is a brown seaweed which grows up in the Atlantic coasts. It contains organic iodine, alginates, fucosterol and mineral salts. The iodine content makes it ideal for use in cellulitis products, also has decongestive and stimulating properties. It does not irritate or sensibilise the skin.

In correspondence from **Paroxite** in another data sheet covering *Fucus serratus* and *Fucus vesiculosus* we read that when dried it contains 15% of mineral matter (quite rich in iodine and arsenic), and close to 65% of condensed glucosides, mainly made up of alginate, but also fucoidane and laminarane. In addition the fucus has an appreciable content of vitamin C, B12, including a little provitamin A (fucoxanthene) and amino acids. It is a metabolic stimulant (alginate, mineral and organic iodine, arsenic) activates the micro-circulation, balances hydration and tissue suppleness; nourishes and stimulates the cutaneous cells. Softening; emollient; gives a velvety smoothness (alginate, water). Recommended for all skin revitalising products; anti-wrinkle treatments; care of dry or inelastic skin; external treatment of cellulite and obesity.

In a letter and data sheet from **Biocosmetics** we read that their extract is made from *Fucus vesiculosus*, *Laminaria digitata*, *Agar* and *Scenedesmus* as well as other seaweeds (red, brown and green seaweeds). *Fucus* and *Laminaria* are rich in natural iodine, bromine and fluorine, in addition to polysaccharides, amino acids, vitamins and mineral salts. It acts as a "biological sponge" attracting moisture and at the same time being rich in mannitol, magnesium, copper and phytohormones (abscisic acid).

In a data sheet from **Indena** (through **K&K Greeff**) we read of *Fucus vesiculosus* or Bladderwrack where the thallus is used. It contains, typically, alginates, iodine in organic combination, mineral salts, sugars, amino acids, fucosterol. It is soothing, emollient, lenitive. It is used in foam baths, preparations for massage before and after the bath. Coadjutant in treatment of cellulitis.

In a data sheet from **Haarman and Reimer** we read that *Fucus vesiculosus* is a seaweed harvested in the German North and East Seas, the Atlantic and Pacific Oceans. It has skin metabolic effects. It contains iodine and bromine, β -carotene, fucoxanthin, alginic acid, carbohydrate.

The data from **Ennagram** (through **Gemro**) The *Fucus* Hydroglycolic Extract is the ideal ingredient for slimming products. Iodine stimulates cellular metabolism. It helps break down fat globules and triggers the release of triglycerides. Fucoidans fluidify the blood flow and promote a faster elimination of the toxins. Minerals revigorate the skin. Mannitol gives a moisturising action. Anti-cellulitis creams and gels : up to 20 %

2/033760 Extrapone Seaweed from **Symrise** (ex **Dragoco**). Extrapone Seaweed contains seaweed extract, prepared in glycols and preserved. 1 kg Extrapone Seaweed corresponds to the extract from approx. 250 g fresh seaweeds.

Directions for use: The constituents of the seaweed *Fucus Vesiculosus* have bacteriostatic and film-forming effects and therefore offer excellent possibilities for use in cosmetic products. They are particularly suitable for preparations for the care of normal and dry skin; in the hair care area they are recommended for use in products for dry hair.