

Seaweed Group

Read the attached information about the uses of seaweed. You must put together a presentation at least 2 minutes in length on the uses of seaweed. In your presentation you should include:

- Examples of uses of seaweed in food
- Examples of uses of seaweed in household products
- Examples of uses of seaweed in medicine
- Anything else you think is important.

By the end of your presentation, the class should be able to answer these questions:

- What are two foods that use seaweed?
- What is limu and what is it used for?
- What is aragose?

Past and Present Uses of Seaweed

Seaweeds have been harvested for food, fertilizer, and medicine for thousands of years. The Chinese used seaweed for medicinal purposes as early as 3000 B.C. One of the earliest records, the Chinese *Book of Poetry*, indicates that sea vegetables were considered a delicacy as far back as the time of Confucius. In Iceland, where seaweed has been eaten for centuries, the oldest law book refers to the "rights and concessions involved before one might collect and/or eat fresh sol (*Palmaria palmata*) on a neighbor's land."

Ancient Hawaiian nobility also kept limu (edible algae) gardens where rare and choice varieties of seaweeds were cultivated to provide gourmet food for the royal family.

Other cultures have used seaweed for fertilizer and fodder. For centuries, inhabitants of the island of Lewis in the Outer Hebrides have made a sacrifice each Halloween to the sea god Shony, "with entreaties to send seaweed to enrich our ground." *Bellum Africanum*, written in 46 B.C., states, "The Greeks collected seaweed from the shore and having washed it in fresh water, gave it to their cattle." Throughout Europe and Great Britain, seaweed has been used for many years to replenish the soil and promote plant growth.

In northern New England, rockweeds (*Ascophyllum* spp. and *Fucus* spp.) have been collected for use as fertilizer since colonial times. *Ascophyllum nodosum* is used as packing material for shipping live lobsters and clams, and for transporting sandworms in the marine bait industry. Dulse (*Palmaria palmata*) and Irish moss (*Chondrus crispus*) have formed the nucleus of a cottage industry in which harvesters collect, dry, and sell the seaweeds for food and industrial use.

Seaweeds have many other important but low volume uses. Because they concentrate trace elements, seaweeds historically have been a source of iodine, potash, and other minerals used in industry and medicine. A number have been used for drugs, including anticoagulants, antibiotics, antihelminthics (worms), antihypertensive agents, reducers of blood cholesterol, dilatory agents, and insecticides.

In the global market, seaweed is sold primarily for food. This has not been the case in New England, where seaweed has been used mainly for fertilizer, animal feed supplements, and food and pharmaceutical additives. In the past decade, however, there has been increasing interest in using seaweed for food as its health qualities are becoming better known. One seaweed used for food in the rapidly expanding Japanese cuisine market is nori or *Porphyra*. The U.S. has the

fastest growing market for nori in the world, with sales in 1990 approaching \$25 million and growing at 12 to 15 percent per year.

Food with Seaweed

There are a lot of foods that contain seaweed. Kelp is harvested and the algin taken from the kelp is used to thicken food. What kinds of food use algin thickeners? In store-bought ice cream, there is kelp. You may also find algin in some breads, beers, pudding, and even salad dressing. A few herbs and vitamins also include seaweed in its composition.

Household Products

Did you know that there are household products that contain seaweed? Fertilizer contains seaweed, and so do some soil conditioners and animal feed.

Crafts with Seaweed

There are some crafts you can make with seaweed or that contain seaweed. You can make seaweed-pressed cards for example.

Personal Care Products

There are also some personal care products that contain seaweed or has algin in it. For instance make-up, soap, toothpaste, and shampoo all contain algin. Spa and body water, facial masks, massage gels and seaweed baths too, among a number of other products all contain seaweed extracts.

Medicines

I bet you didn't know that some medicines contain seaweed? Seaweed is an ingredient in medicines used to cure at least five major diseases. It has been in medicines used to treat tuberculosis, arthritis, colds, influenza and also worm infections.

Agar, a substance extracted from seaweed, is used in the culture of bacteria and other microorganisms. Petri plates that medical technicians use are lined with agar gels and incubated, and hospital laboratories use agar plates too to identify various types of infectious bacteria.

Agarose is another substance extracted from seaweeds and commonly used in the area of medicine, specifically in chromatography to purify proteins, DNA and other substances.