

Gracilaria

General

Gracilaria is a red algae genus which includes 190 species that grow in tropical and subtropical regions of the oceans.

Market size

Several species of Gracilaria are cultured in marine farms, producing 2.8 million tons of fresh material annually, in different regions of the world. The major producers are Indonesia, Philippines, China, Korea and Chile. The pond culture of Gracilaria is very limited, and known mainly as integrative mariculture in South Africa.

Main uses

The primary use of Gracilaria is as a raw material for the production of edible agar, of basic quality. This agar serves as a solidifying agent in the food industry, and may also be eaten directly. The secondary uses of Gracilaria are as a fresh or dried vegetable, as a component in the cosmetic industry in shampoos, creams, soaps and sunscreens, as well as providing a source for nutraceutical activities, insofar as it is antimicrobial, anti-inflammatory, active against gastrointestinal disease, antiviral, anticancer, anti-pain, etc. Gracilaria is also used for water remediation in integrative mariculture, wherein Gracilaria absorbs the fish and invertebrate excretions, and enables water recycling in fish cultivation. Gracilaria is also consumed as a food additive in fish culture by utilizing its biological activities, and as fertilizer in agriculture.

Nutritional values

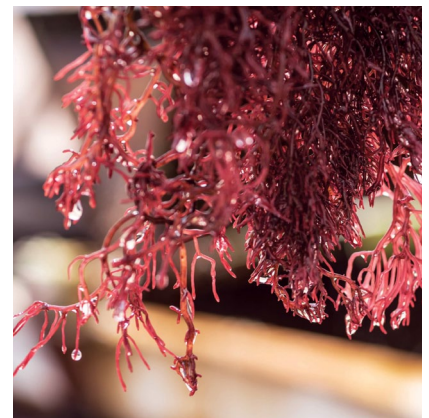
Gracilaria contains non-digested (agar) and digested (starch) nutritional fibers (up to 50% of dry material), protein with well-balanced amino acid composition (up to 20% of dry material), low fat (3%), and other minerals (including magnesium, calcium, potassium, iron, iodine), vitamins (including A, C and B12), and antioxidants (all together about 30% of dry material). Fresh Gracilaria contains about 85% water as well as the red pigment-phycoerythrin, which serves as a food colorant, fluorescent marker, and anti-oxidant.

The advantage of Seakura's Gracilaria system

The advantage of pond cultivation as opposed to cultivation in the sea is manifested as follows: Gracilaria is free of sand, and of competing algae, and is not contaminated by herbivores. The cultivation system cannot be damaged by storms, and is not affected by urban and industrial contamination. Pond cultivation of Gracilaria is controlled; on other words, it can be enriched with additional nutritional fibers, proteins or minerals. The process is continuous throughout the year, and less dependent on seasonal temperature fluctuations in the sea. Pond cultivation is almost totally mechanized, while cultivation in the sea is labor intensive. Finally, the yield per unit area is significantly higher in pond cultivation than in the sea. Another general advantage of pond culture is the fact that it is not reliant upon availability of arable land or fresh water.

The advantage of Seakura's Gracilaria species

Seakura's Gracilaria species is of high agar quality; namely, a source of bacteriological agar and agarose, as opposed to other cultured species in the world. The obvious shortage of high quality agar, produced from Gelidium, increases the need to develop high quality agar from Seakura's Gracilaria.



Conclusion

Gracilaria serves as raw material for a number of products of economic value. While one product containing pond cultured Gracilaria may be of limited economic value, a group of products might be more likely to attain economic success.