
Keynote Speech

Marine Algal Farming and its Commercial Importance–An Overview

Dr.R.Seenivasan

Assistant Director (International Relations Office) and Associate Professor (School of Bio Sciences and Technology), VIT University, Vellore, Tamil Nadu, India

Abstract

Marine Algae are primitive type of plants lacking true roots, stems and leaves. Most Marine Algae belong to one of three divisions the Chlorophyta (green algae), the Phaeophyta (brown algae) and the Rhodophyta (red algae). There are about 900 species of green marine Algae, 4000 red species and 1500 brown species found in nature. The greatest variety of red Marine Algae is found in subtropical and tropical waters, while brown Marine Algae are more common in cooler, temperate waters.

About 20,000 species of Marine Algae existing in the world, India possesses 425 species of red Marine Algae, 188 species of brown Marine Algae and 220 species of green Marine Algae. Traditionally, Marine Algae have been collected from natural stocks or wild populations. However, these resources were being depleted by over-harvesting and hence, the need for their cultivation. At present, Marine Algae cultivation techniques are standardized, perfected and made economically feasible.

Moreover, industry prefers a greater stability through sustained supply of quantity and quality of raw materials. In order to prevent overexploitation of natural Marine Algae habitats and to meet the needs of industry in an uninterrupted manner, nearly all brown Marine Algae, 65 per cent of red Marine Algae and 70 per cent of green Marine Algae are being cultivated. Predominantly, top five cultivated Marine Algae in the world are Laminaria, Porphyra, Undaria, Eucheuma and Gracilaria. These together accounts for 5.97 million metric tonnes of Marine Algae production. Top 10 countries producing Marine Algae are China, Korea, Japan, Philippines, Indonesia, Chile, Taiwan, Vietnam, Russia and Italy. The current phycocolloids (Marine Algae gels) industry stands at over US\$ 8.2 billion. The world production of commercial Marine Algae has grown by 119 per cent since 1984 and presently, 220 species of Marine Algae are utilized commercially including 145 species for food and 110 species for phycocolloid production.

Large-scale algal based mariculture is carried out only in Asian countries, where there is a high demand for Marine Algae products and burgeoning populations to create market growth. Cultivation of Marine Algae in Asia is a relatively low-technology business in that the whole, attached plants are placed in the sea and there is a high labor content in the operation. Except for the large kelp harvesters of Southern California and Baja California or in Philippines and Taiwan Province of China, most Marine Algae are grown or harvested from wild stocks using manual techniques. The demand from the phycocolloid industry of India is growing but the present production from natural habitats is very low and insufficient to cater to the needs of the algal based industries. This gap between the demand and supply can be bridged through mariculture practices for Marine Algae by cultivating the useful species on commercial scale. Continuous supply, improved yield and quality as well as conservation of natural Marine Algae beds are some of the important advantages.

Subsequently, it requires low inputs, and provides good returns and can employ many people. Marine Algae culture is a good industry for coastal communities. The efforts in Marine Algae cultivation and its utilization through product and process development could help in meeting the food and nutritional security of Indian population as well as augmenting value of total fisheries export. Marine Algal farming has a very important role to play towards betterment of coastal fishing communities and as a valuable foreign exchange earner. The need of the hour is to train, encourage and promote coastal fishermen population at suitable sites, through combined efforts of respective State Governments, research institutes, marine Algae industries, and local NGOs, to adopt commercially viable large-scale mariculture technologies, and to provide them with good marketing facilities through proper networks.