Land-based, Marine *Gracilaria* Farming in New Mexico

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The unprecedented population growth, uncontrolled industrial expansion and urbanization have diverted the human attention for ocean exploitation. Among its vast living resources, seaweeds are one of the best sources of food, fodder, fertilizer, medicine and chemicals. Although the fish and prawns have been fully exploited and successfully farmed, seaweed farming has been restricted to a few countries only. Today seaweeds is a multibillion dollar industry. There are nearly 24 million tones of wet seaweeds worth hundreds of million dollars are produced annually in four major oriental countries namely China, Japan, Korea and Philippines involving nearly 6,70,000 people. Today seaweeds industry and their products is a Rs. 50,000 crore industry worldwide and growing at 10 percent per annum.

Seaweeds and their uses

Seaweeds are macro marine algae growing in the sea and brackish water. They are different from seagrasses and flowering plants. The worldwide demand for seaweeds and their products is enormous. Seaweeds have been used for food and medicinal purposes from historical times. A large number of bioactive components and polysaccharides have been extracted and used in various medicines. Seaweeds extract are widely used in toothpaste, ice-cream, tomato ketchup, textile printing, teeth filling, cosmetics, tissue culture, plywood, packaging and many other industries. Seaweeds act as a very good nutrient scrubber thus used extensively in integrated aquaculture. More recently it has been proposed that large scale seaweed cultivation can be used for CO₂ sequestration to combat Global Warming.
Gracilaria Cultivation
Gracilaria “Ogo” Cultivation
Bioremediation Test Bed
Wastewater Discharge Pond Upgrades
WWTP upgrade - Anaerobic digester Test Bed
Sustainable Agriculture Test Bed
1.5 MW solar array
Aquaculture Greenhouse
Greenhouse System
WWTP upgrade - Anaerobic digester Test Bed
Carpospore Germination as a function of Salinity

Española Basin, summary of water chemistry.

<table>
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<th>Specific Cond. (µS/cm)</th>
<th>TDS (mg/l)</th>
<th>Ca (mg/l)</th>
<th>Mg (mg/l)</th>
<th>Na (mg/l)</th>
<th>HCO₃ (mg/l)</th>
<th>SO₄ (mg/l)</th>
<th>Cl (mg/l)</th>
<th>F (mg/l)</th>
<th>As (mg/l)</th>
<th>U (mg/l)</th>
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<tbody>
<tr>
<td>Maximum</td>
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<td>30,000</td>
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<td>3,500</td>
<td>1,000</td>
<td>2,180</td>
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<td>16.2</td>
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<td>0.0068</td>
<td>0.129</td>
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OGO NAMASU

| 2-4 cups OGO, cleaned | 1 tbsp. GREEN ONION or ROUND ONION, sliced |
| ¾ cup SUGAR | fine |
| 1¼ cup RICE (OR LIGHT) VINEGAR | 1 tsp. SESAME SEED OIL |
| 1 tbsp. SHOYU | 2 CHILI PEPPERS, seeded and chopped |
| ½ tsp. AJINOMOTO | 2 cloves GARLIC, mashed |
| 1 tbsp. SESAME SEEDS |

1. Pour boiling water over ogo. Let stand a few minutes if soft texture is desired. Remove immediately if crispier texture is wanted.
2. Rinse in cold water and drain thoroughly.
3. Pour sauce made of remaining ingredients over seaweed; place in clean jars and refrigerate.

— Contributed by Laurie Levine