

Long Island Sound cuisine extends beyond fish and shellfish to a trendy sea vegetable

By Ellen Johnson

You may have heard by now that “kelp is the new kale.” In fact, kelp’s benefits for health and the environment make it an even more impressive superfood than kale. Requiring neither freshwater nor fertilizer input, kelp is considered one of the most eco-friendly and nutritious foods on the market.

While Asian cultures have long enjoyed eating seaweed, it’s still a niche product in the United States. Scientists, farmers, and chefs in Connecticut are trying to change that.

Sugar kelp, commonly found in Long Island Sound, is a large brown seaweed with a long, ruffled blade resembling a lasagna noodle. It can survive freezing temperatures and strong wave action, and it grows quickly in the winter. It has a mild flavor that’s perfect for a variety of culinary applications. Coupled with the growing market for kelp, these qualities make sugar kelp the sea vegetable of choice for growers in Connecticut.



Seaweed farmer J.P. Vellotti samples some of the kelp dishes prepared by Chef Jeff Trombetta. Photo: Ellen Johnson

Kelp cultivation in Connecticut has been pioneered by Dr. Charles Yarish, professor of ecology and evolutionary biology and marine sciences at the University of Connecticut. Yarish has been studying seaweed biology for over three decades. Now, he applies his knowledge of seaweed physiology to develop methods for cultivating kelp in Long Island Sound and along the Atlantic coast, and he enthusiastically espouses the benefits of the sea vegetable for the environment, our health and our palates.

With funding from Connecticut Sea Grant and other sources, Yarish began researching kelp cultivation as a way to reduce nutrient pollution in Long Island Sound. The macroalgae takes up nitrogen, which enters the ocean from wastewater treatment plants and fertilizer runoff and contributes to blooms of harmful algae and low oxygen levels in the Sound.

Since then, his focus has shifted to creating a market for the sea vegetable by helping farmers get into the business and introducing kelp to American diets. Yarish and his team cultivate kelp in a lab at the UConn Stamford campus before giving them to kelp growers.

They provide growers with spools of string imbedded with juvenile kelp. It grows best in the cold waters of winter, so farmers put out the lines of juvenile kelp in late fall. In the spring, they pull up the lines now heavy with long, brown blades of the young kelp and harvest it for sale. Yarish has helped set up several local kelp farms, including the Thimble Island Ocean Farm in Branford.

Also in Branford is a kelp farm run by DJ King Lobsters. Another kelp farmer, J.P. Vellotti, tends kelp beds in Norwalk and Groton. According to the U.S. Army Corps of Engineers, kelp is being cultivated on 51 acres in Long Island Sound, and permits are pending for an additional 65 acres.

Bren Smith, owner of Thimble Island Ocean Farm, is a proponent of “vertical ocean farming,” a floating network of kelp and shellfish. He started a non-profit, Green-Wave, to train new farmers in this method. Once harvested and processed, the kelp is distributed to a small but increasing number of restaurants and local markets. Now, the biggest challenge for the kelp industry is getting Americans to eat it.

“There’s a knee-jerk reaction,” said Chef Jeff Trombetta, a professor of culinary arts at Norwalk Community College. “People think they won’t like it.”

But Vellotti remains optimistic.

“There’s enough demand among chefs,” he said. “Then [the chefs] will develop demand in the market.”

Trombetta is doing his part to turn people onto kelp by developing kelp recipes, partnering with local restaurants such as The Whelk in Westport, and teaching classes on processing and cooking kelp at the community college. He's come up with more than 100 recipes thus far, which will be featured in his forthcoming cookbook, *Kelping Today, Culinary Applications*. Some of the dishes include a kelp and Swiss cheese slider, kelp chowder, kelp-wrapped monkfish and a kelp mango smoothie. Even the stipe – the stem of the plant – can be pickled and made into relish.



Kelp stipes, the stem of the plant, can be pickled and made into relish. Photo: Ellen Johnson

“It’s versatile – think of it as another green vegetable,” he said.

Freshly harvested sugar kelp is deep brown in color, but when cooked, it transforms into an appealing shade of green. Vellotti harvests his kelp young, when it’s tender.

“The biggest difference in the product is the maturity,” he said. The tender baby kelp may command a higher market price than more mature kelp, he believes.

The sea vegetable has a unique savory flavor thanks to its natural glutamate enzymes. Glutamates enhance the flavor of other high-enzyme foods such as garlic and onions, Trombetta said. Kelp can be used fresh or rehydrated as a flavorful addition to soups, beans and salads.

Chef Kenneth Bergeron, founder of Middletown’s ION Restaurant and author of *Professional Vegetarian Cooking*, has been cooking with sea vegetables for 30 years. Some of his favorite ways to use kelp are in chowders and bisques, and as a replacement for anchovies.

“When I changed my diet (to vegetarian), I very much loved the flavor of the sea, but I didn’t want to eat the animals,” he said. “Sea vegetables gave me the avenue to enjoy those flavors.”

Kelp even works in desserts. UConn Marine Sciences graduate student Heidi Yeh, author of the cooking blog *Chez Yeh*, prepared kelp carrot cake and kelp candied with maple syrup and sesame seeds as an experiment in sustainable cooking for a marine conservation class. She purchased dried kelp online from Maine Coast Sea Vegetables. Both dishes were a hit with her colleagues at UConn Avery Point.

Since the market for kelp in Connecticut is still developing, you probably won’t find fresh, locally grown kelp at your local grocery store just yet. You can buy baby sugar kelp from DJ King Lobsters or visit Angie’s Seafood Market at Bridgeport Aquaculture School for some kelp noodles. Dried sea vegetables from Maine are available at many natural food stores and online. Fresh kelp can be used as-is, while dried kelp should be

rehydrated before use. Dried at a low temperature, it retains most of its beneficial nutrients.

There are plenty of reasons to jump on the kelp bandwagon besides its versatility in the kitchen. It’s a nutritional powerhouse, low in calories and loaded in beneficial nutrients. “You don’t need a lot of it to get the benefits,” said Dr. Simona Augytė, a postdoctoral researcher in Yarish’s lab and chief scientist at GreenWave.

Kelp is full of fiber, an important component of healthy diets. It contains high levels of important minerals, including iodine, calcium, magnesium and potassium. Like fiber, potassium is lacking in the diets of most Americans. Kelp provides vitamins A, B, C, E and K, as well as the micro-nutrients chromium, vanadium and boron. It is also rich in essential omega-3 fatty acids, which are important for brain function. Seaweed is also considered a safe source of omega-3s, free of mercury, PCBs and other toxins which can be found in some fish, according to physician and author Dr. Michael Greger.

Some may be concerned about pollutants in the kelp itself, since seaweeds take up the components of the water in which they grow. But kelp grown in Long Island Sound is highly regulated and safe to eat. Kelp can only be grown in waters that are clean and routinely monitored by the state, said Anoushka Concepcion, aquaculture extension specialist with Connecticut Sea Grant and UConn Extension Program.

Not only is kelp highly nutritious, but it is also good for the environment, since it doesn’t require the use of land, fresh water, fertilizer or pesticides. Beyond growing quickly with little input, kelp can restore the environment as it grows, according to studies by Jang K. Kim and Yarish. Since the seaweed takes up carbon dioxide, it has the potential to mitigate the effects of climate change and ocean acidification. It also absorbs nitrogen, which is beneficial because excessive amounts of this nutrient can trigger harmful algal blooms and hypoxia in the Sound in summer.

Thanks to Connecticut scientists, chefs and farmers, the kelp industry is growing. And you can help by requesting kelp at local restaurants, markets and farms, and adding it to your plate at home.

Connecticut-grown kelp is available at: **Angie’s Seafood Market at Bridgeport Regional Vocational Aquaculture School**

Thursdays 3 to 6 p.m.

60 St. Stephens Road, Bridgeport, CT 06605

For more information, send an email to:

angiesaqua@bridgeportps.net