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There's a New Crop in Town

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There's a New Crop in Town!

Connecticut-grown Kelp

by Peg Van Patten

Bren Smith had a big smile on his face as he hauled in his kelp harvest at the Thimble Island Oyster company in Branford. Why? Because in May he sold his first seaweed crop immediately to chefs in swanky New York City restaurants who were clamoring for the product. Smith harvested about 120 pounds of fresh sugar kelp (*Saccharina latissima*). The kelp was grown by “seeding” ropes that were deployed in Long Island Sound. They yielded a successful crop in May despite the ravaging effects of Super-storm Sandy during the growing season. This was the first time that seaweed farmed in Long Island Sound has been grown in Connecticut and marketed as a food product.

Charlie Yarish, UConn professor of Evolutionary Ecology and Biology, was smiling broadly too. He was standing right next to Bren, helping to haul in the harvest. It was research on kelp and aquaculture techniques by Yarish and his colleagues that led to this success story.

“I’m happy because we got full value for the nutrients, and maximum value of the biomass. We think more people will be interested in becoming growers.” said Yarish.



UConn Professor Charles Yarish admires the luxuriant crop of sugar kelp that benefitted from his research.

Jang Kim

“The crop was sweet as sugar, clean, and tender. Yarish said. “It has a beautiful texture. You couldn’t get a better plant to market!” Many of the plants were reproductive, he added.

“I was very excited to see the product grow from only 1 millimeter to three meters in only five months, despite Mother Nature” said Jang Kim. Kim, an assistant research professor (UConn Marine Sciences), works with Yarish and also helped Smith spin up his seaweed farming effort. Kelp grows best in cool to cold water.

“I was stunned by how fast the kelp seed grew,” said Smith. “Oysters take 2-3 years to mature, but my kelp

was ready to harvest in a mere 5 months. It’s a game-changer for a ocean farmer.” Smith had lost his primary crop, oysters, several times in recent years due to severe weather events like Tropical Storm Irene and Sandy, but the kelp stayed pretty much intact.

“I’m definitely not making a profit yet - I’m pretty deep in the hole because of permitting costs and the grow-out gear” he adds. “I’m hopeful though-I sold out of my first year’s harvest very quickly. The challenge is that most of the kelp [now sold] is coming from Asia, so I’m competing in a global marketplace. The price per pound is pretty low, but I intend up-selling in the artisanal food sector. “

Smith had to obtain permits to both culture and harvest the seaweed product for market from the State Department of Agriculture, Bureau of Aquaculture, the first in Connecticut to do so. The kelp was subjected to exhaustive product safety tests undertaken by the State Department of Public Health and the Connecticut Agricultural Experiment Station.

“We’re delighted that Bren has had great success in marketing his products” said Anoushka Concepcion, Connecticut Sea Grant Extension educator. “The next step for the industry will be to introduce sea vegetables directly to more buyers and consumers, thereby creating a demand that potential new producers can fill.”

Smith says he plans to grow 12 tonnes of seaweed next year, weather permitting.

The techniques for growing this native kelp, adapted from those used in Asia, were developed by the UConn team including Yarish, Kim and then Ecology & Evolutionary Biology graduate student Sarah Redmond (now with Maine Sea Grant Extension). The UConn School of Business, led by Tim Dowding, supported the business venture aspects of the kelp farming effort, including developing commercial pricing models for successfully marketing seaweed. With this help, Smith launched the first commercial seaweed farm ever permitted in Connecticut waters.

“They made all the difference,” Smith said. “In fact I’d be nowhere without their years of research and their willingness to guide me every step of the way. It’s a real tribute to the role of applied science in creating



UConn assistant research professor Jang Kim examines a crop of kelp from a pilot seaweed farm site in Fairfield.

new economic opportunities for our state.”

Connecticut Sea Grant and other sponsors such as the EPA Long Island Sound Study Futures Fund supported the research aspects. Students and faculty at the Bridgeport Regional Aquaculture Science and Technology Center (BRASSTEC) in Bridgeport were directly involved in applying the science and deploying the original pilot kelp farm off Fairfield. The crop is also processed and packaged at BRASSTEC.

Smith is also partnering with Yarish and colleagues in another research project supported by the Connecticut Sea Grant College Program, The National Fish and Wildlife Foundation and the LIS Futures Fund to use sugar kelp for nutrient bioextraction in Long Island Sound. That means that the seaweed is used to re-

move nutrients such as nitrogen and phosphorus from the water, and then nourishes the sea plants just like fertilizer is used to grow vegetables. End result: cleaner waters, robust and nutritious sea vegetables.

The UConn research team, and Smith, hope to soon be able to grow a second economically valuable seaweed, *Gracilaria*, in the summer. Pilot farm efforts in Long Island Sound have succeeded, but the tests to approve it for marketing as a food source are in progress.

Peg edits this magazine and was a former grad student of Professor Yarish who did research on how kelp reproduces.