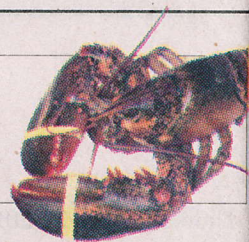


Waterfront

**Lobster
Price**

April 19 Retail, Ellsworth Area
\$9.99 per pound (small)
\$11.99 per pound (large)



Scientists Look to Rebuild Maine's Sea Urchin Industry

BY STEPHEN RAPPAPORT

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FRANKLIN — They don't have horns or shaggy tails but, like Black Angus cattle, green sea urchins may be a candidate for ranching — sea ranching.

Scientists at the University of Maine's Center for Cooperative Aquaculture Research (CCAR) are working with several commercial partners to learn whether it can be practical, and profitable, to apply aquaculture techniques to raising the spiny critters either on the ocean bottom or on land. Sushi lovers prize the urchin's edible gonads, known as "uni" in Japan. Fresh uni currently sells for about \$152.50 per kilo, just under \$70 per pound. Last year, during the peak demand season in Japan, the primary market for uni, the dock price of urchins climbed above \$5 per pound.

That kind of value, and the depredation of wild urchins in Maine waters, primarily through overfishing, makes it worthwhile to see whether it is possible to raise urchins on a commercial scale.

Over the past few years, CCAR station biologist Steve Eddy and director Nick Brown have developed a project that allows them to spawn urchins throughout the year and raise more than 300,000 tiny seed urchins annually. Some of those urchins remain at the facility, where Eddy and graduate student Pamela Fraungruber are studying whether it is economically feasible to raise urchins to harvest size in a recirculating tank system. Most of the tiny urchins, though, are destined for experimental growout sites off the coast.

"Steve is frantically trying to spawn urchins," Brown said. "The goal is a half-million."

Spawning that many urchins



ELLSWORTH AMERICAN PHOTO BY STEPHEN RAPPAPORT

At the University of Maine's Center for Cooperative Aquaculture Research in Franklin, graduate student Pamela Fraungruber, biologist Steve Eddy and director Nick Brown check out a fiberglass raceway filled with green sea urchins grown at the facility.

"would be challenging," Eddy said.

Currently, CCAR is working with three commercial partners, each of whom is experimenting with a different method of raising urchins to market size.

Some 20,000 urchins, each tagged with a fluorescent dye in its jaw, have been planted on the sea floor at two Penobscot Bay aquaculture lease sites operated by Friendship International, one of the earliest and largest players in Maine's urchin industry. Fraungruber dives on the sites, which have different bottom types, every four months and collects some urchins to bring back to CCAR for dissection.

Using computer modeling based on the growth of the tagged urchins that are collected, Eddy is able to predict the growth and survival rates of the hatchery urchins and to

compare the results from the different bottoms. From that, it is possible to determine the price that would be required to make the project economically viable for divers.

Other partners are exploring different approaches.

Mussel farmer Erick Swanson is experimenting with raising urchins in submerged pens at a site in Blue Hill Bay. They may later be transferred to the sea floor for growout, Eddy said.

Wildcat Oysters operates a lobster pound in Tenants Harbor. Last week, the company took thousands of 10-millimeter seed urchins from CCAR to plant in its pound with the hope that it might be possible to raise as much as 5,000 pounds of urchins to market size as a supplement to its lobster business.

At CCAR, in addition to raising

seed urchins for commercial buyers. Eddy is evaluating whether urchins can be reared economically on shore in recirculating tank systems. The facility currently has a dozen 8-foot-long V-shaped fiberglass raceways to which urchins are moved shortly after metamorphosing from the larval stage some three to four weeks after hatching. The water recirculates through the system after being filtered and sterilized with ultraviolet light.

Eddy also is testing various diets to see what kind of feed promotes the most rapid growth compared with the cost. Urchins in the nursery eat a special feed developed in Norway. It is, Eddy said, eight times as expensive as the feed given to farm-raised salmon and, at about \$5 per pound, 20 times more expensive than catfish feed.