

RESEARCH

Urchin project compares feed options to produce top quality uni

BY MURIEL L. HENDRIX

Steve Eddy, a biologist at the University of Maine's Center for Cooperative Aquaculture Research, and CCAR director Nick Brown, have been working on urchin aquaculture for five years. In 2009, they spawned over 50,000 sea urchins and raised them to maturity, using both tank farming and sea ranching.

Now, the project has reached the point where Eddy and his co-workers are exploring a new direction in their research – using Sugar Kelp (*Saccharina latissima*) as feed for bulking. If it proves feasible, they hope it will benefit Maine wild urchin harvesters, urchin processors and seaweed farmers.

Eddy says in addition to relying on a formulated feed from Norway, they have used Maine farmed and wild harvested Sugar Kelp for growout. They have discovered that the formulated feed outperforms the kelp in promoting somatic growth, and that it also provides high gonad yields under normal growth conditions, but they do not yet know whether it or kelp provides better quality when bulking uni (urchin gonads).

To determine this, they are conducting trials with four-year-old urchins raised in tanks at the Center. The urchins, which have been fed formulated feed most of their lives and could be sold for processing now with good quality uni, will be divided into two groups for bulking. One will be fed the formulated diet, which is more expensive; the other will be given seaweed as its finishing diet. When the urchins are harvested in March, several appraisals of their quality will be conducted by processors, lab technicians and a community taste panel.

Eddy says the bulking experiment is important because if the urchins fed seaweed have comparable or better quality uni than the formulated feed group, this would not only be more economical, it could provide an additional market for current and potential seaweed farmers in Maine. Feeding seaweed to urchins could provide a market for stipes (stems) and ragged blades (fronds) and blades fouled by epiphytes that attach late in the season and make the blades unsuitable for food processing. "Urchins aren't

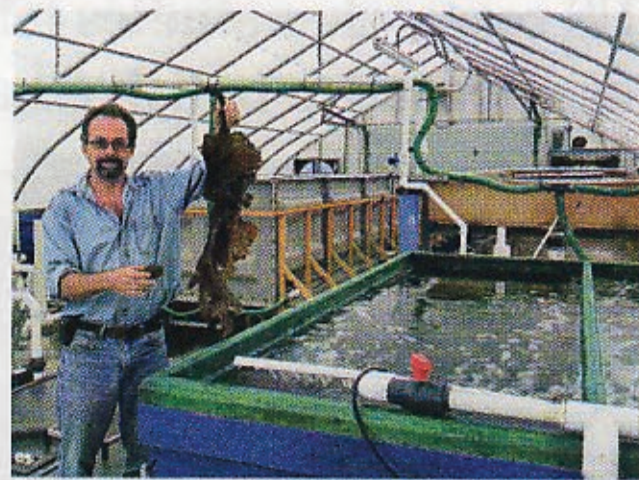


Green sea urchin bulked on a diet of sugar kelp.

picky," he says; "they thrive on the extra protein provided by the epiphytes."

If the bulking experiments prove successful with seaweed, not only will seaweed farmers benefit, but also urchin processors. During the height of the urchin harvests in the 1990s, Eddy says, the uni was often about 15% of the urchins' weight. Now, it is more typically 10%. With bulking, it could be as much as 25%, giving processors a considerable added value, as uni can sell at auction in Japan for \$90 per pound or even more for better quality uni. This could help processors stay in business, a benefit to wild urchin harvesters as well as urchin farmers.

So far, Eddy says they have used only Sugar Kelp, but that he believes and has read about studies that conclude the ideal bulking diet for highest quality, taste and texture will be a "salad of red, browns and greens." ■



Steve Eddy at the University of Maine's Center for Cooperative Aquaculture Research.



The urchin bulking tank (right) and the V-trough urchin holding tanks (left).



Left: Kelp drying for sea urchin bulking. Right: Farmed sugar kelp used for bulking.



Green sea urchins in V-trough raceway.



Raceways used for urchin culture.



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