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Intelligence

Researcher: Freezing shellfish broodstock with cryoprotectants could bring efficiencies to hatcheries

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By Responsible Seafood Advocate

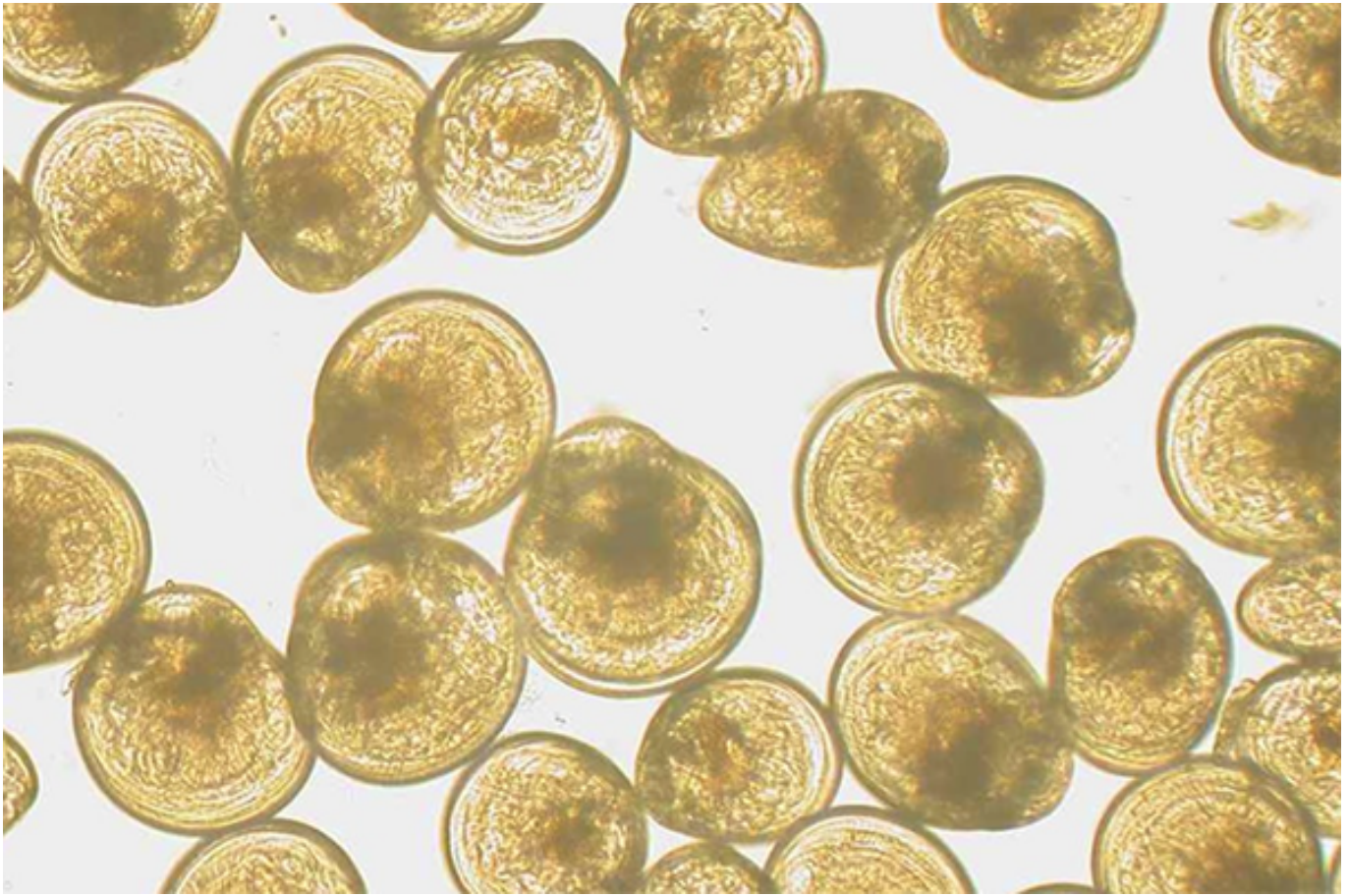
Cornell University exploring ways to preserve surplus larvae using cryoprotectants

Researchers at Cornell University (New York, USA) say that shellfish hatcheries could increase their efficiency and reduce waste by freezing broodstock for use in future seedings.

A research project led by Gregg Rivara, an aquaculture specialist at Cornell Cooperative Extension Suffolk County, is looking at ways to preserve surplus larvae using cryoprotectants (antifreeze compounds and antifreeze proteins like glycerol).

“Shellfish hatcheries spend considerable labor, energy and phytoplankton conditioning adult shellfish to affect out-of-season spawning,” said Rivara. “Low-temperature storage of excess larvae would allow a hatchery to recoup the effort in conditioning and spawning, as well as act as an insurance plan if a meltdown in larval rearing occurred. Rather than spawn a new batch of broodstock, they could reanimate the stored larvae and raise these larvae to the nursery phase.”

Rivara seeks to find the easiest way to use cryoprotectants to keep the broodstock alive at a very low



Can shellfish hatcheries increase efficiency and reduce waste by freezing broodstock? A Cornell University researcher aims to find out. Photo of nine-day-old oyster larvae at 100x magnification by Gregg Rivara, courtesy of Cornell University.

temperature. New York's \$8.8 million dollar aquaculture industry depends on shellfish hatcheries for seed stock every year.

The initiative is one of eight new research projects across the state that New York Sea Grant (NYSG) – a collaboration between Cornell University and the State University of New York – is supporting through National Oceanographic and Atmospheric Administration funding.

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