

# QUARTERLY PROGRESS SUMMARY:

July to September 2015

SPATNZ



## Summary of progress during this quarter

The main food of mussels is single celled microalgae (phytoplankton). For rearing the sensitive early life stages of mussels in a hatchery we grow the microalgae in a highly controlled system. Having an ample supply of the highest quality microalgae is a critical prerequisite to a successful mussel hatchery. In the reporting quarter SPATNZ staff have ramped up algae production levels to near the capacity of our pilot scale operation. We are currently producing about 3400 L/d of algal soup. About 400 million algal cells are produced each second, adding up to about 36 trillion cells per day. Now that the basics are working so well, we have commenced trials growing a wider range of microalgae species, and trying to get a key species, *Chaetoceros calcitrans*, growing in the more efficient continuous flow bag system (see photos below).

SPATNZ staff were involved in a research project with the Nelson-Marlborough Institute of Technology (NMIT) aquaculture students. This annual event sees the students conduct a research project that is relevant to the mussel selective breeding programme, under the guidance of SPATNZ staff and NMIT tutors. This year the project looked to develop a new method for assessing the meat condition of mussels, to fit with a large experiment that SPATNZ is running.

One of SPATNZ's key goals at present is to develop methods to consistently produce batches of mussel spat at pilot commercial scale. This quarter we reared our biggest batch of mussel spat to date, and approached the target scale for the pilot hatchery.

SPATNZ was recognized at the New Zealand Marine Farming Association annual awards, with SPATNZ picking up the Research and Development Award, and staff member Ellie Kerrisk winning the New Entrant award.

## Key highlights and achievements

- Microalgae production expanded to 3400 L per day (36 trillion cells per day)
- Several additional microalgae species established in culture
- Research project with NMIT aquaculture students completed
- Produced our largest batch of mussel spat to date, approaching the target scale for the pilot hatchery
- SPATNZ was awarded the New Zealand Marine Farming Assn Research and Development award.

## Upcoming

- Production of selected mussel strains for benchmarking against wild mussel controls
- Ongoing development of methods to scale up spat production

## Investment

| Investment period   | Industry contribution | MPI Contribution | Total investment |
|---------------------|-----------------------|------------------|------------------|
| During this Quarter | \$0.30 M              | \$0.30 M         | \$0.60 M         |
| Programme To Date   | \$6.12 M              | \$6.12 M         | \$12.24 M        |

*Microalgae cultures grown as mussel food are scaled up from small flasks to carboys, then into a hanging bag system (lower photo). The flasks and carboys are sterilized in the autoclave (top photo) and are grown for just a few days before they are harvested. The bag system receives a continuous inflow of pasteurized plant food and a continuous outflow of dense, healthy algae. The bag cultures that were set up in March are still going strong in October, which is testimony to the quality of the systems and the skill of the staff.*

