

January to March 2017: SPATnz Executive Summary



Summary of progress during this quarter

Hatchery performance was excellent, with all process steps exceeding target levels and each batch being the largest produced to date. With the hatchery performing so well, we are turning more of our research effort toward optimising survival of spat following transfer to spat farms, and to challenges associated with scale up.

This quarter we established the 2017 selective breeding cohort. This involved an ambitious mating design to establish 100 families selected from an extensive database for a range of performance traits. Virtually all of the planned matings were achieved and all 100 families survived the three weeks of larval rearing, which was an excellent result. The families are now on marine farms where they will be grown through to harvest size.

The mussels from the first spawning in the new hatchery reached harvest size this quarter having done very well through all stages in the hatchery and farming process. They have proven very robust and fast-growing, reaching harvest size in approximately 2 years from spawning (approximately 12 months from final seeding). Informal side-by-side comparisons show that the hatchery seed grew considerably more quickly than wild-sourced mussels. These differences will be quantified by comparing three hatchery strains with three wild spat controls across a wide range of growing conditions. Results will become available next year.

Key highlights and achievements

- The hatchery exceeded performance targets this quarter and all three batches of larvae reared were larger than any previous batches
- We took the next step in the selective breeding programme by establishing a cohort of ~100 families – the most successful breeding run to date
- The mussels from the first batch spawned in the new hatchery reached harvest size after performing very well through all stages of the farming process.

Upcoming

- Continue to scale up processes toward target
- Increase research on optimising survival of mussels after transfer to spat farms
- Begin attempts to find DNA markers associated with traits of interest

Investment

Investment period	Industry contribution	MPI Contribution	Total Investment
During this Quarter	\$0.41 M	\$0.41 M	\$0.81 M
Programme To Date	\$8.20 M	\$8.20 M	\$16.40 M

Photos from the 2017 Selective Breeding run **Top:** Spawning mussels selected for a range of traits. **Below:** Setting up 100 individual families of mussel larvae.



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