

SPATnz Programme Quarterly Progress Report (April-June 2013)

Executive Summary

The Shellfish Production and Technology (SPATnz) PGP Programme will provide a step change in mussel aquaculture by developing hatchery production of selectively bred juvenile mussels. Mussel “spat” (juveniles) are currently collected with seaweed washed up on 90-mile beach, or caught on lines in Golden Bay. In both cases, we take what we get in terms of quality and quantity of spat. Once we develop methods for large scale spat production we will be able to control the timing of spat supply and to produce spat from parents selected for characteristics desired by farmers, processors or customers. This same traditional selective breeding approach has been practised for many years for virtually every species that is farmed on land.

In the quarter to 30 June 2013 we have been working with a cohort of about 50 mussel families produced in 2012. Each family is the offspring of 1 male and 1 female mussel, chosen for certain characteristics like their growth rate, robustness or season of fattening. We grow the families individually until their shells are large enough to engrave easily. In the last few months about 60,000 mussels from 50 families were engraved, then mixed in even proportions and returned to marine farms. In the next 1-2 years these will be sampled to assess the performance of each family in a range of growing environments and throughout the year.

In the reporting quarter we progressed planning and design for a pilot scale hatchery which is to be built in 2014. This will allow research into spat production at a commercially relevant scale. The first mussel spat from this facility are expected in early 2015.

Another objective of the SPATnz Programme is to contribute to the development of tertiary training that provides graduates with the skills required for hatchery-based mussel production. In the past quarter, SPATnz staff have contributed in various ways to the teaching of the Nelson-Marlborough Institute of Technology Aquaculture course, and facilitated mussel farm and factory tours along with Sanford Ltd. We also contributed to Year 13 practical science workshops to help inspire suitable students into aquaculture. These exercises have proven very valuable for the students but also beneficial for SPATnz to evaluate potential employees and ensure that their training is relevant to our needs.

In the July-September quarter, SPATnz will look at factors affecting the success of winter spat rearing, which is outside of the natural breeding season of mussels and therefore often much more challenging.