

QUARTERLY PROGRESS SUMMARY:

Jan to Mar 2018

SPATnz



Summary of progress during this quarter

Most plants and animals that humans farm are selectively bred by choosing parents that accentuate desirable features. Each year or two we establish a cohort of 50-100 families for our mussel breeding programme. Each family represents the offspring from a male and female mussel chosen carefully based on desired characteristics. The new cohort makes progressive improvement on past cohorts, and builds on the wide range of families that industry can choose from for their farm stock. Ripe parents are induced to spawn with temperature fluctuations, and planned families are established by mixing sperm and eggs from the chosen parents. With traditional systems, many families would be lost during rearing of the larvae (swimming stage). Novel systems (see photo 1) developed by Cawthron, SPATnz and other industry partners have made this process very reliable and consequently made breeding much more effective. This year, 99 out of 100 families made it through the tricky larval stage to settlement.

The 2017 cohort of families were “final seeded” in February. This involves taking them off their growing ropes, singulating them and reseeded them at a density suitable for growth through to harvest size. The mussels looked great, and there were obvious differences between the families (see photo 2). It is critical that farmed mussels are robust so they can cope with environmental challenges and the mechanical handling involved in farming. Virtually all of the mussel families display this robustness – just one out of the 98 families proved to be weak and so will not be used for future farming.

Key highlights and achievements

Successful establishment of the 2018 cohort of families for the selective breeding programme – 99 out of 100 families successfully through the larval stage.

The 2017 cohort of families successfully reared through spat stages at sea – 97 out of 98 families successfully through to final seed.

Upcoming

The 2018 families will be reared to 1-2 mm and transferred to sea

Further data will be gathered comparing selected hatchery strains vs wild sourced mussels

Investment

Investment period	Industry contribution	MPI Contribution	Total Investment
During this Quarter	\$0.33 M	\$0.33 M	\$0.66 M
Programme To Date	\$9.43 M	\$9.43 M	\$18.86 M

Photo 1: Rearing larvae of 100 mussel families simultaneously



Photo 2: Six of the 2017 families grown in the same place at the same time, showing obvious differences

