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ASI
Thoroughbred Oysters

Emergency Funding for the National Pacific Oyster Industry

Rebuilding with POMS Resistant Oysters

SUMMARY

The viral disease known as Pacific Oyster Mortality Syndrome (POMS) was diagnosed for the first time in Tasmania in February 2016. Based on the high mortality and rate of spread seen in previous outbreaks of this disease in NSW, it is expected that Tasmanian oyster production will be severely impacted over the coming year. Since the two hatcheries that produce most of the oyster spat for Australia are based in Tasmania, production in NSW and SA will also be significantly reduced. This represents a loss of livelihood for 300 family farms with an annual GVP of $75million.

ASI Pty Ltd is an industry-owned company with the sole responsibility of breeding POMS resistant Pacific Oysters by 2018. The company's only source of income is a voluntary levy on oyster spat sales that generates $730,000 per year. Oysters that are partially resistant to POMS have been produced and these oysters offer the best solution to the industry for restocking following the outbreak of POMS. It will take a year to breed a sufficiently large number of these partially resistant oysters for restocking. During that time ASI would not receive any levy income and would thus become insolvent, thereby precluding the restocking.

An amount of $984,000 is requested as emergency funding to enable ASI to continue its breeding operations until 30 June 2017, after which time the industry levy should once again be sufficient to cover the company's costs.

Background

POMS Disease Outbreak

In 2010 the viral disease known as Pacific Oyster Mortality Syndrome (POMS) was detected for the first time in Australia in the Hawksbury and Georges River estuaries in NSW. Experience with this disease in other countries was that mortality approached 95% and spread was rapid. A similar pattern was seen in NSW with the result that the Pacific Oyster industry in the two affected estuaries was decimated and has not yet returned to full production.

Animal health authorities and industry implemented quarantine and movement controls in order to prevent POMS spreading from NSW. This was successful for a time, but in February 2016, POMS was found in Tasmania with multiple farms experiencing high oyster mortalities. Testing is continuing and more affected farms have been identified. It is expected that the disease will continue to spread and a considerable portion of Tasmanian oyster production will cease within the year. Movement controls have been implemented by state governments, prohibiting removal of oysters from Tasmania to other States. This may prevent spread of the disease to South Australia, the other major producer of Pacific Oysters.

However, oyster growers require a regular supply of juvenile spat to maintain their businesses. This spat is produced by commercial hatcheries and the two biggest hatcheries are located in Tasmania. With movement controls likely to stay in place indefinitely, there will be a significant reduction in oyster production in SA and NSW as a result of the Tasmanian POMS outbreak.

This represents a loss of livelihood for approximately 300 family farms across Australia with an annual GVP of $75million.

Control of POMS

The primary approach to control this disease is to breed oysters that are genetically resistant to it. The Seafood Cooperative Research Centre and FRDC therefore supported research toward this objective. The research was commenced by Australian Seafood Industries Pty Ltd (ASI), a company owned by the oyster industry and established for the sole purpose of breeding oysters. Excellent progress was achieved so that when funding from the Seafood CRC ceased in 2014 all state industry bodies agreed to implement a levy based on oyster spat sales to continue the research. The levy was implemented with the cooperation of all commercial oyster hatcheries, and was sanctioned by an Australian Consumer and Competition Commission Determination (See ACCC Authorisation No. A91444, attached.)

The objective of genetic selection for POMS resistance is to identify oyster families that survive natural infection and can then be used for future breeding. In conjunction with industry, ASI set the standard for POMS resistance at "70% of individuals in an oyster family surviving a POMS challenge as 1 year old animals". The research has progressed well and it was expected to make the first commercial supply of POMS resistant broodstock that meet this standard in 2018.

An Emergency Response

It can be seen from Figure 1 that while the average POMS resistance of ASI oysters is currently 40%, there are some elite families with up to 70% resistance. Assessment of survival of ASI oysters that have been exposed to natural infection in Tasmania over recent weeks has confirmed that these families are indeed resistant to the disease, with our best 1 year old family showing more than 90% survival.

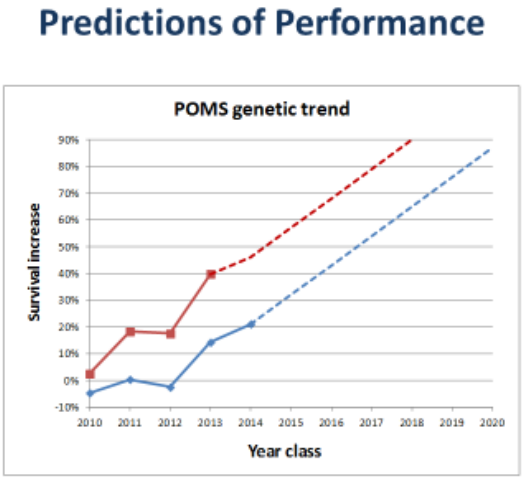

Figure 1. Genetic trends for POMS as 1 year old animals. The blue line represents the genetic trend for the population and the maroon line represents genetic trend for the elites which would be the commercial candidates.

The significance of these results cannot be understated. There is now every reason to believe that these resistant oyster families can be used to help the industry restock. The science on which the ASI breeding program is based is supported by CSIRO and has proven to be successful. (See letter from CSIRO, attached). While survival of the new stock will be less than ideal, it will enable oyster growers to get back into production as an emergency measure.

Need for Emergency Funding

Building up the required number of partially resistant oyster families will require ASI to work in conjunction with all seven hatcheries in Australia over the coming year.

However, the occurrence of POMS in Tasmania and the consequential quarantine and control procedures implemented between States to limit spread of the disease means that sale of normal oyster spat will be minimal for the foreseeable future. Since ASI's revenue is derived exclusively from the levy on spat sales, this means that ASI will have no revenue stream. Financial analysis by the company's accountant has determined that in the absence of any assistance ASI will become insolvent by mid June, 2016.

This cannot be allowed to happen. There is every reason to believe that if ASI can continue operations, the industry will be able to recover from this outbreak within two years.

Financial assistance is therefore requested for ASI for the rest of this financial year and the full 2016-17 financial year.

Financial Details

The annual budget for ASI is $730,000. This was reviewed in December 2015 at the request of ASI shareholders and found to be accurate. Levy revenue to date in the

current financial year is $426,819. It is not expected that any more revenue will be received this financial year or during the next financial year. This results in an income gap of $254,455 this financial year and $730,000 in 2016-17. A total of $984,455.

Table 1 provides a summary of ASI finances. Additional detail is provided in the 2014-15 ASI Annual Report and Financial Statements to 31 January 2016, attached.

Table 1. ASI financial summary.

Item	**2015-16 Full Year ($)**	**2015-16 To 31 Jan ($)**	**2016-17 Full Year ($)**
Income			
Levy income budget	731,274	439,254	730,000
Levy income, actual		426,819	
Emergency grant from FRDC	50,000		
Income Gap	254,455		730,000
Expenditure			
Expenditure, budget	705,436	428,175	715,000
Expenditure, actual		309,578	

Activities to be conducted by ASI

Listed below are a summary of the activities that ASI will need to carry out over the next 18 months to provide an ongoing supply of selectively bred POMS resistant oysters.

- Monitoring mortality in the broodstock of 80 ASI oyster lines located in 10 estuaries in SA, NSW and Tas. (March – May 2016)
- Management and Analysis of data to generate Estimated Breeding Values (EBV's) for POMS resistance and other traits of commercial importance. (March – May 2016)
- Design of a breeding plan based on the EBV's to maximise genetic improvement whilst managing inbreeding (April 2016)
- Undertake breeding of the next generation of POMS resistant Oysters. (June-Aug 2016)
- Distribute next generation of POMS resistant Oysters for evaluation to 10 estuaries in SA, NSW and Tas (September 2016 – March 2017)
- Continue to develop accelerated broodstock program for improved genetic progress and commercial supply (March 2016 – June 2017)
- Provision of most resistant Oysters to commercial hatcheries (March 2016 – June 2017)
- Liase with industry on progress towards breeding a POMS resistant Oyster (ongoing)
- Develop breeding strategy for supply of improved Oysters to South Australia and New South Wales (March 2016 – August 2016)

- Consult with international colleagues on POMS breeding strategies (May 2016)

In addition to the above ASI has also identified additional R&D opportunities that will add significant value to ASI's core business activities and intends to pursue funding accordingly.

Yours Sincerely
Matt Cunningham
General Manager
Australian Seafood Industries