POMS UPDATE - Autumn 2018: # 11

The weather is getting colder, water temperatures are dropping and so the POMS season for 2017/18 is over. It's been an interesting season with major mortalities earlier than expected in November in Pitt Water and Pipeclay Lagoon, followed by periodic low level mortalities at all sites for the rest of the season. At the end of this third year of POMS disease activation in Tasmania it is very pleasing to observe that most POMS-affected oyster farmers appear to be relatively upbeat and comfortable with their current operations.

As Oysters Tasmania is now producing a regular newsletter for the Tasmanian oyster industry, we will sometimes tack our newsletter onto theirs. At other times and as circumstances dictate, we may still produce separate POMS-related newsletters for industry.

BIOSECURITY TASMANIA - JOHN PRESTON

THE POMS SEASON – THIS YEAR WAS DIFFERENT AGAIN!

WHERE HAVE I BEEN?

Many of you would be aware that I have been called away from my POMS role for a considerable part of the late summer to work as the Incident Controller on the Queensland Fruit Fly response on Flinders Island. Many staff from Biosecurity Tasmania, DPIPWE and other Government departments were conscripted to assist with what has been a significant Plant health emergency response. This meant it has been difficult to respond to all of the different queries that came my way in respect to POMS as quickly as I would have liked.

None the less, I managed to complete most of the POMS works program this summer, including surveillance testing of all 3 POMS free areas and extensive sampling in the upper Channel and Bruny Island.

In relation to the Channel testing, I was only able to achieve this through the fantastic assistance I received from all of the following people, Sue Grau of Oysters Tasmania, Christine Crawford and Sarah Ugalde of IMAS and the growers involved. Thank you very much to all those involved and for the patience of oyster growers who have been impacted by my absence.

THE SUMME4R OF 2017-18

As reported previously, the POMS season started with a vengeance in Pitt Water with the first significant mortalities reported on the 23 November. Following close behind was Pipe Clay Lagoon on the 28 November. Samples were taken for both of these areas as per our standard protocol of PCR testing the first reported mortalities in any growing area. The results from this testing indicated that individual CT values, or the amount of virus per oyster tested, was significantly higher than the oysters tested from the same growing area the previous year, which in turn, were much higher than the oysters tested in the first year of POMS.

The torrential rains in the first weekend of December put an end to the POMS season for a while but did create other problems with all growing areas being closed for a period of time. By January 2018, water temperatures had again risen to the extent that both Blackman Bay

(04/01/18) and Little Swanport (12/01/18) had reported mortalities and had confirmation PCR tests done. Both areas tested positive to POMS although the individual CT's were not as high as Pitt Water or Pipe Clay Lagoon. Mortalities were also reported as patchy across both of these growing areas. Additionally, Blackman Bay's mortalities at this time were limited to one particular family of oysters split over 2 parts of one lease. No other oysters on that lease or any other leases in Blackman Bay were impacted at that time.

Unlike the patchy water temperatures of last summer, this year's temperatures have been remarkably consistent across a number of growing areas. This resulted in more than 36 consecutive days above 18°C in a number of previously infected growing areas. Interestingly this did not necessarily translate into further outbreaks that correlated with this temperature profile. Later in the season there were ripples of an outbreak through Blackman Bay, however mortalities were quite inconsistent.

PORT CYGNET – A NEW INFECTED AREA

Probably the most significant POMS news of the 2017- 2018 summer was the detection of POMS in oysters on a lease at Gardners Bay. This was the first fresh detection of POMS since the original outbreak of Feb 2016. I received a report from an oyster grower of unexplained sudden mortality across different age/size classes of oysters. I inspected these oysters and collected samples for q PCR analysis with the opinion that the clinical signs looked like classical POMS disease. This was later confirmed by the PCR results.

Due to the location of the infected area in Gardeners Bay and the proximity to another lease about to be stocked with oysters at Deep Bay, it was determined by the Chief Veterinary Officer that the appropriate area to be classified as infected was the entire area of Port Cygnet. The DPIPWE website and associated information pages associated with POMS have been updated to reflect this change.

Consequent to this detection there was a great deal of concern from the oyster growers of Bruny Island about the possibility that the virus may have made its way across to their leases and as a result testing programs were arranged to target leases in the Upper Channel, including at Fleurty's Point, Little Taylors Bay and at Great Bay on Bruny Island. One of these testing programs was arranged and funded by Sue Grau of Oysters Tasmania and the second range of testing was organised by me and carried out by Christine, Sarah and Lewis from IMAS, with all analysis undertaken at Mt Pleasant Laboratories. All results from both tests were negative for POMS.Trace-back of the likely source of infection has been inconclusive with the most likely transfer of virus coming from one of the many vessels that has berthed in Port Cygnet over recent times.

PROOF OF FREEDOM - SUMMER SURVEILLANCE TESTING

As previously stated, I have undertaken the Proof of Freedom testing of all of the three POMS Free area of the state, which involved testing up to 80 samples collected from each growing area. These samples were then PCR tested for POMS at Mt Pleasant laboratories. Normally there is one test undertaken at the beginning of summer and another at the end of summer. This is what happened in Circular Head and Port Sorell; however only the first test was completed in Georges Bay as reducing water temperatures beat us in the end for a second test.

TESTING OF OTHER AREAS

Testing of other areas around the state was significantly impacted by my involvement with the Fruit Fly response. The only Intermediate area tested was the Upper Channel as described earlier. Apologies to any growers who were hoping for testing in their areas that did not eventuate.

MOVEMENT PERMITS

Movement Permits continue to be required for all movements of oyster spat, oyster transfers between farms and movement of oyster equipment. There has been discussions around changing the requirements for movement permits in certain situations but to date these have not been realised.

To change the basis for movement permits from what it is currently, there is a need to change the wording of the Control Order that was written to regulate oyster movements across the state at the beginning of the POMS outbreak in 2016. This can be done by the CVO and there has been some preliminary discussion with Oysters Tasmania in relation to doing this.

Currently the Permit periods for stock movements (not hatcheries) are from 1 April 2018 to 30 November 2018 and then 1 December 2018 to 31 March 2019. If your permit has lapsed please complete an online application and submit it by email as per the directions on the application or if unsure what to do, please call me.

As usual if you have any enquiries in relation to POMS matters please do not hesitate to contact me:

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IMAS - CHRISTINE CRAWFORD AND SARAH UGALDE

We have now wound up our POMS experiments over summer and are currently analysing the results which we will present either at a special workshop or at Shellfish Futures later in the year. A report of our results from this last POMS season will also be written over the next couple of months and made available to industry. Below is a summary of some of our research.

Handling and Density

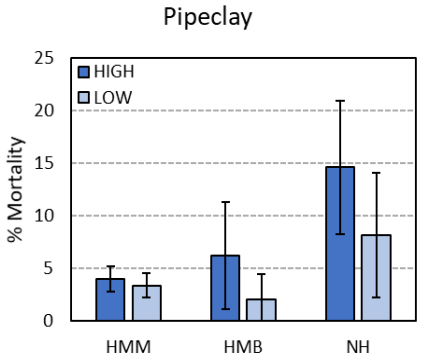
This project investigated the effects of handling and stocking density on POMS-related mortalities and oyster condition. It was designed in collaboration with industry, and oysters were donated by Barilla Bay Oysters. The project ran from October 2017 until early-mid March 2018.

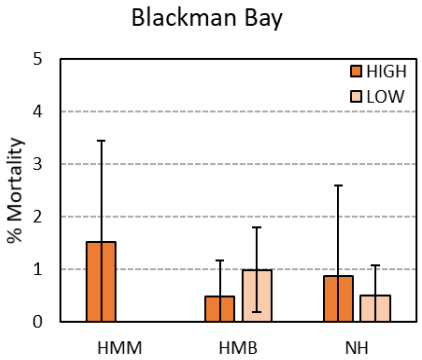
Two groups of oysters were used: 30 mm unchallenged oysters (grown at Dunalley) and 30 mm pre-exposed oysters (grown at Pitt Water). Unchallenged oysters (UC) were deployed at Pitt Water, Pipeclay Lagoon, and

Blackman Bay, and Pre-exposed (PX) oysters were at Pitt Water only due to low availability of oysters.

Oysters were deployed at two densities; High (200 oysters per tube) and Low (100 oysters per tube). These oysters were exposed to three handling regimes: no handling, monthly boat handling, and onshore mechanical grading. No handling (NH) oysters were not touched for the whole duration of the project. Handling Monthly Boat (HMB) oysters were gently sorted as soon as they were taken out of the water using buckets filled with water (right). Handling Monthly Mechanical (HMM) oysters were taken ashore overnight, and either sorted with a mechanical grader or hand sorted.

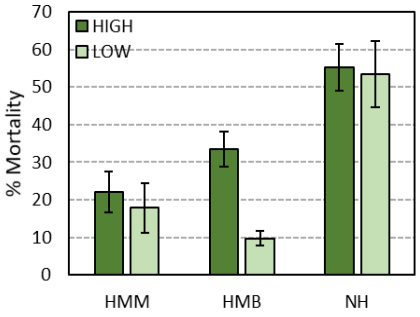
Blackman Bay had minimal mortality (<5 % in all tubes), and is not discussed in depth. Pitt Water and Pipeclay had mortalities, with high density oysters having equal or greater mortality than low density oysters.



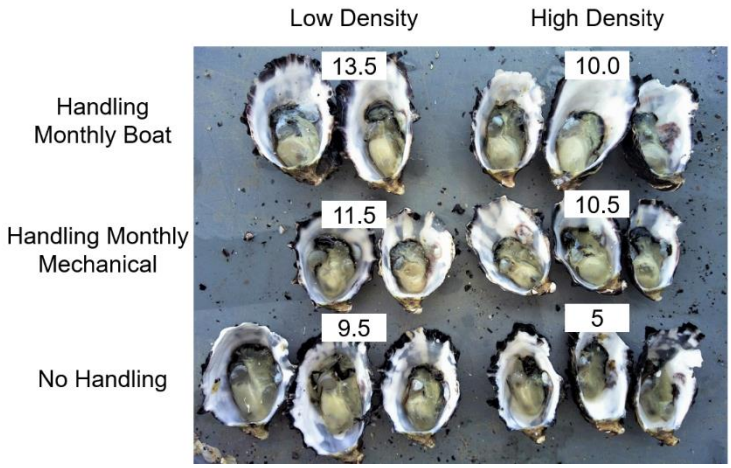


There was little difference between HMB (gentle handle) and HMM (rough handle), and suggests that oysters may be more tolerant to handling regimes than previously thought. However, timing of handling is likely to be an important factor. No handling (NH) oysters in Pitt Water and Pipeclay had the highest mortality, probably due to a build-up of cunjevoi in that treatment.

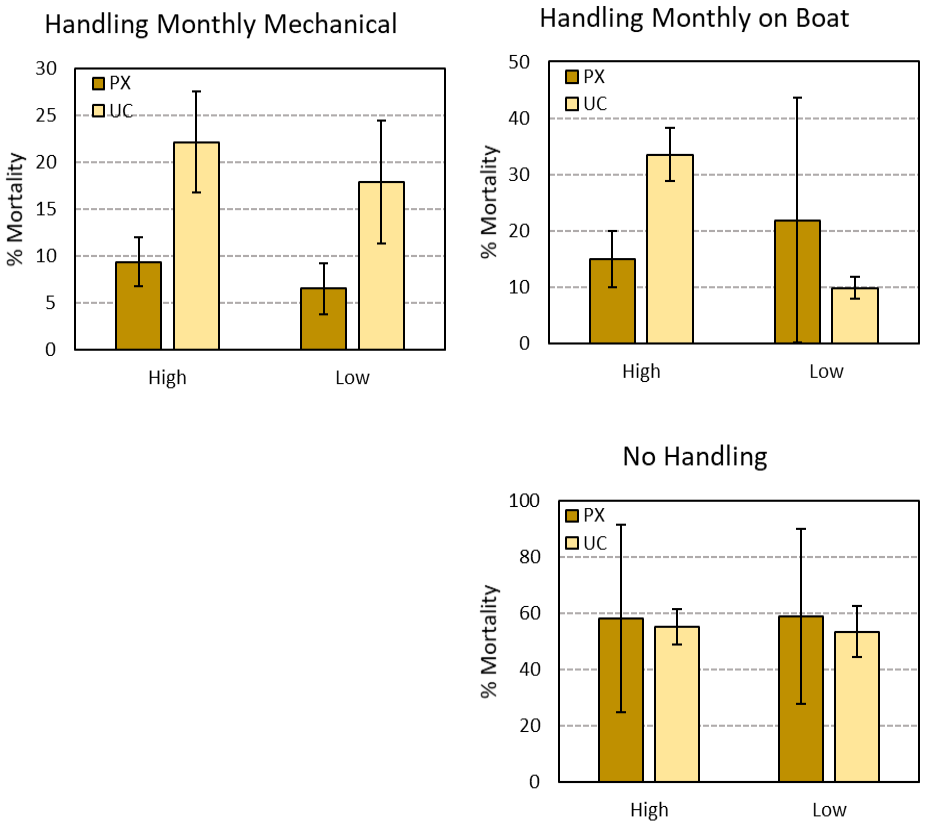
Oysters with cunjevoi



We also asked farmers to score the oysters out of 20 for condition factors such as fat coverage, meat:shell ratio, shape, defects, shell and abductor strength. Low density oysters not only had lower mortality, but also better condition. No handling oysters with high mortality also had less favourable condition, especially for shell and abductor strength. The example below shows oysters from Pipeclay across all treatments and scored out of 20 by farmers.



At Pitt Water, the pre-exposed oysters generally performed better than unchallenged oysters. This was also seen in the Chilling Project (data shown in last POMS Newsletter)



Age-Size

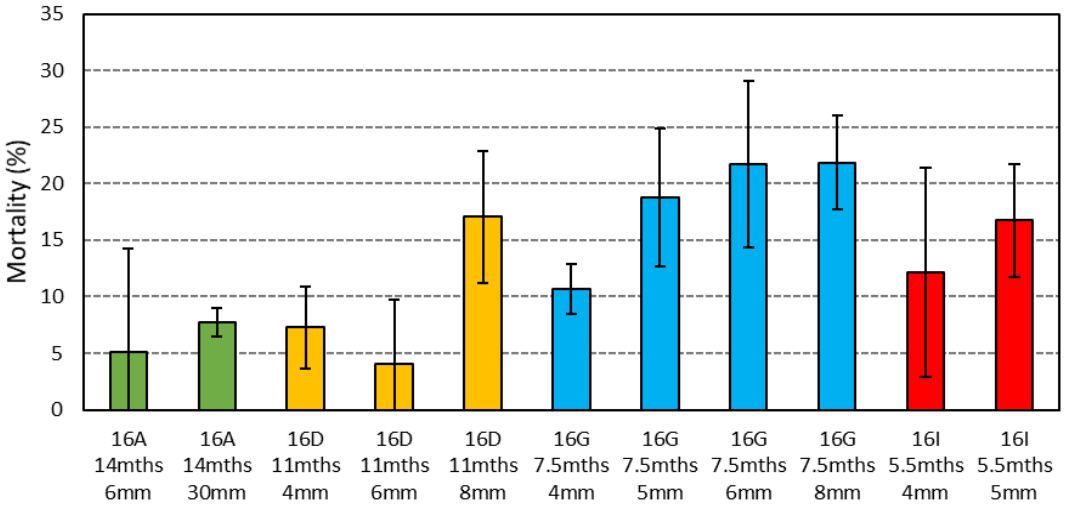
This Project investigated whether oyster age and/or size influence mortality. It was developed in collaboration with farmers from Pipeclay Lagoon, and oysters were donated by Shellfish Culture and Barilla Bay Oysters. Oysters were deployed from end-November until mid-February, and probably experienced two POMS outbreaks.

Four batches of oysters of the same genetics were used; 16A, 16D, 16G, and 16I, across 4 ages (14, 11, 7.5, and 5.5 months) and 5 sizes (30, 8, 6, 5, 4 mm).

	4mm	5mm	6mm	8mm	30mm
14mths	.	.	16A	.	16A
11mths	16D	.	16D	16D	.
7.5mth	16G	16G	16G	16G	.
5.5mth	16I	16I	.	.	.

Oysters were kept at low density in each tube, with 4 replicates per age/size treatment. They were handled once in mid-February by hand, and oysters were split into two or three baskets where needed. Data were collected on mortality, growth, biofouling, and predation. This project focused on smaller oysters only, because smaller oysters are more susceptible to POMS than larger oysters. The 30mm size was opportunistic.

There was no notable biofouling or predation recorded on the oysters. The average mortality was 39% across all treatments. Mortality generally increased with size of spat in each age group. It also decreased with age, except for the youngest age group at 5.5 months. However, there was major variation between many replicates in each size/age class.



NEW POMS SURVEY

At present we are preparing another survey of oyster farmers, similar to last year, where we aim to get a consolidated view across industry of the effect of POMS and how farmers are managing around it. As previously, we are primarily asking questions around what died, where, when and why, along with environmental conditions and management practices. We are also very interested in changes that have occurred since the previous POMS season.

The survey questions are basically very similar to last year, but we have improved the wording of several questions, deleted a couple that didn't work and added a couple of others that we thought were more relevant. We are also planning to interview oyster farmers who don't have POMS, but with a much shorter questionnaire about how POMS has affected their farming operations and changes that they have made as a result.

We will be contacting oyster farmers over the next couple of weeks with information about the survey and setting times to conduct the interviews. As before, Sarah Ugalde, John Preston and Christine Crawford will be conducting the interviews, mostly in pairs.

We were extremely pleased with the response we received last year and the information that was amalgamated from farmers affected by POMS. It provided a very useful industry-wide assessment, and we are hopeful that this can be repeated this year.

FUTURE RESEARCH

The CRC-P Future Oysters continues until August 2019, so we have another POMS season to work with industry to better understand the drivers of POMS outbreaks and how to minimise POMS mortalities. At this stage we have no clearly defined projects for next season and we are interested in hearing from industry about any burning questions that they have or issues that they would like more research to be conducted on.

If you have any questions or comments about our research, please give us a call. We are always interested in hearing your views.

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