

Investigations into the Causes of Mortality of the Pearl Oyster, *Pinctada maxima* (Jamson), in Western Australia

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Abstract

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An investigation into the cause of high mortality of the pearl oyster, *Pinctada maxima*, in the north-west of Western Australia was carried out over a 3-year period. Pathological and microbiological investigations revealed that the majority of diseased oysters were infected with marine *Vibrio* bacteria. One common isolate, *Vibrio harueyi*, was shown experimentally to induce disease similar to that seen in the field.

Pearl oyster mortality during pearling industry operations occurred following transportation of oysters in tanks on carrier boats from collection grounds to oyster lease sites. The number of marine *Vibrios* in the water of carrier tanks increased rapidly during transportation because of inadequate water circulation and this was believed to be the time when infection occurred.

Mortalities were greatest at times when water temperatures were lowest and experiments showed that oysters were most susceptible to disease at these low temperatures. It is postulated that oysters, weakened by exposure to low ambient temperature, come into contact with high concentrations of bacteria during transportation to lease sites at which time bacterial invasion occurs.