Pacific oysters in Danish waters – screening for pathogens

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Introduction

Pacific oyster (*Crassostrea gigas*) is an invasive species in Denmark, but the proportion of Pacific oysters has for the last decades increased in Danish waters and is now at a level, where it is of interest for the commercial fisheries. In other countries with Pacific oyster stocks, diseases caused by oyster herpesvirus (OsHV-1) and the bacterium *Vibrio aestuarianus* have resulted in mortalities in affected batches. In Denmark, the European flat oyster (*Ostrea edulis*) in the Limfjorden is affected by *Bonamia ostreae*, a parasite found in the population in this area for the last 8 years, and in the last few of those years also in connection with mortalities in some of the affected batches. This parasite does not normally give rise to disease in Pacific oysters. Another notifiable parasite *Marteilia refringens* has not been found in the flat oysters in the Limfjorden. The intention was to screen Pacific oysters for the mentioned pathogens, and to investigate if Pacific oysters of the area are carrying *Bonamia* parasites and thereby could spread the disease in the Limfjorden. Pacific oysters are also found in larger and/or persistent populations in two other areas, the Wadden Sea and the Isefjord, and samples from batches of Pacific oysters in these two areas were also investigated for the mentioned pathogens.

Methodology

Molecular methods were used for screening of the oysters samples; a duplex Real Time PCR method for *Bonamia* sp and *Marteilia refringens* (Canier *et al.* 2020) and Real Time PCR methods for OsHV-1 (EURL mollusc diseases SOP 2011) and *Vibrio aesturianus* (EURL mollusc diseases SOP, 2021), respectively.

Results

The screening is still ongoing, but until now, none of the pathogens has been found in Pacific oysters, neither from the Wadden Sea, Isefjord nor Limfjorden. Pacific oyster samples taken at sites harbouring flat oysters with *Bonamia* have not been found to be *Bonamia*-positive.

Conclusions

Currently, there is no indications of OsHV-1 or *Vibrio aestuarianus* in the Danish Pacific oyster populations. Moreover, it does not seem that the Pacific oysters in the Limfjorden are drivers for *Bonamia* disease outbreaks among flat oysters.

Canier L, Dubreuil C, Noyer M, Serpin D, Chollet B, Garcia C & Arzul I (2020). A new multiplex real-time PCR assay to improve the diagnosis of shellfish regulated parasites of the genus *Marteilia* and *Bonamia*. *Preventive Veterinary Medicine* **183**, 105126 https://doi.org/10.1016/j.prevetmed.2020.105126