

The prevalence of *Vibrio parahaemolyticus* and *Vibrio vulnificus* in New Zealand Pacific oysters and Greenshell™ mussels and implications for risk management

Little information is available on the prevalence of *Vibrio parahaemolyticus* (*Vp*) and *Vibrio vulnificus* (*Vv*) in New Zealand and there are no reported cases of food poisoning from NZ-grown seafood. Fletcher (1985) identified peaks in *Vp* numbers during summer but only 1/161 oyster samples exceeded 1000/g. The effect of increasing seawater temperatures on vibrio numbers due to climate change has not been reported in NZ. The aim of this study was to determine current numbers of *Vp* and *Vv* in NZ Pacific oysters and Greenshell™ mussels and the prevalence of pathogenic *Vp*. Pacific oysters (63 samples) and Greenshell™ mussels (13 samples) were obtained from warm, northern, shellfish-growing areas between October 2009 and June 2010. *Vp* and *Vv* levels were determined using the Most Probable Number method of the Bacteriological Analytical Manual (FDA, 2004). Pathogenicity of *Vp* isolates was determined according to Tada et al. (1992). *Vv* was not detected in mussels but was present in 13% of oyster samples. Most positive samples (88%) occurred in February (late summer) but numbers only reached 3/g. *Vp* was detected in 76% of oysters samples. Numbers increased proportionally with increasing seawater temperatures, peaking in February. One sample exceeded 10,000/g. Mussel samples had lower numbers of *Vp* (maximum of 95.4/g in February) and an incidence of 53% for the period studied. No pathogenic genes (*tdh*, *trh*) were detected in the *Vp* isolated from either seafood. This work shows a 19% increase in the occurrence of *Vp* in oysters since the 1980s.

References

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