**Annex 33. Item 10.3.2. – Section 2.2.1. and 2.2.2. of Chapter 2.4.4. Infection with *M. refringens***

CHAPTER 2.4.4.

infection with *marteilia refringens*

[…]

2.2. Host factors

2.2.1. Susceptible host species

*~~Oyster~~* ~~species:~~ *~~Ostrea edulis~~* ~~(Grizel~~ *~~et al~~*~~., 1974);~~~~and mussel species:~~ *~~Mytilus~~* ~~species including~~ *~~M. edulis~~* ~~(Le Roux~~ *~~et al~~*~~., 2001) and~~ *~~M. galloprovincialis~~* ~~(López-Flores~~ *~~et al~~*~~., 2004; Novoa~~ *~~et al~~*~~., 2005; Robledo~~ *~~et al~~*~~., 1995a; Villalba~~ *~~et al~~*~~., 1993b).~~

~~Infection with~~ *~~M. refringens~~* ~~was demonstrated in the oyster~~ *~~Ostrea stentina~~*~~, the clam species~~ *~~Solen marginatus~~* ~~(López-Flores~~ *~~et al~~*~~., 2008a) and~~ *~~Chamelea gallina~~* ~~(López-Flores~~ *~~et al~~*~~., 2008b) and the mussel~~ *~~Xenostrobus securis~~* ~~(Pascual~~ *~~et al~~*~~., 2010).~~

~~Other~~ *~~Ostrea~~* ~~species including~~ *~~O. chilensis, O.~~**~~puelchana, O. angasi~~*~~, and~~ *~~O. denselamellosa~~* ~~were found to be infected with~~ *~~Marteilia~~* ~~sp~~*~~.~~* ~~when deployed in an infected area (Berthe~~ *~~et al~~*~~., 2004; Martin, 1993). However, in these cases, the parasite identification was not done at the molecular level.~~

~~In addition, different stages, including mature stages, of parasites looking like~~ *~~M. refringens,~~* ~~were observed by histology in cockles (~~*~~Cerastoderma edule~~*~~), clam species (~~*~~Ruditapes decussatus~~**~~R. philippinarum~~*~~,~~ *~~Tapes rhomboides~~*~~,~~ *~~T. pullastra~~*~~,~~ *~~Ensis minor, E. siliqua~~*~~), and oysters (~~*~~Crassostrea virginica~~*~~) among other bivalve species (Berthe~~ *~~et al~~*~~., 2004; López-Flores~~ *~~et al~~*~~., 2008b). In all these cases, parasite identification is uncertain.~~

~~Lastly, the copepod~~ *~~Paracartia grani~~* ~~was shown to be susceptible to~~ *~~M. refringens~~* ~~and this species could participate in the transmission of the parasites between bivalves (see 2.3.1)~~

Species that fulfil the criteria for listing as susceptible to infection with *Marteilia refringens* according to Chapter 1.5. of the *Aquatic Animal Health Code* (*Aquatic Code*) are: blue mussel (*Mytilus edulis*), dwarf oyster (*Ostrea stentina*), European flat oyster *(Ostrea edulis)*, European razor clam (*Solen marginatus*), golden mussel (*Xenostrobus securis*), Mediterranean mussel (*Mytilus galloprovincialis*) and striped venus clam (*Chamelea gallina*).

Additionally, a copepod species (*Paracartia grani*) has been found to meet the criteria for listing as susceptible to infection with *Marteilia refringens* and is considered an intermediate host.

2.2.2. ~~Susceptible stages of the host~~ Species with incomplete evidence for susceptibility

~~Juveniles and older life stages are known to be susceptible (Grizel, 1985).~~

Species for which there is incomplete evidence to fulfil the criteria for listing as susceptible to infection with *M.refringens* according to Chapter 1.5. of the *Aquatic Code* are: Chilean flat oyster (*Ostrea chilensis*), a copepod (*Paracartia latisetosa*) and Japanese flat oyster (*Ostrea denselamellosa*).

In addition, pathogen-specific positive polymerase chain reaction (PCR) results have been reported in the following species, but no active infection has been demonstrated: Cortez oyster (*Crassostrea corteziensis*), grooved carpet shell (*Ruditapes decussatus*), Pacific cupped oyster (*Magallana* [syn. *Crassostrea] gigas*) and zooplankton (*Acartia discaudata, Centropages typicus*, *Euterpina acutifrons*, unidentified *Oithona sp*., *Penilia avirostris*).

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