

NOTE

First record of *Tetracapsuloides bryosalmonae* (Myxozoa; Malacosporea) in European whitefish (*Coregonus lavaretus*)

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Abstract

Proliferative kidney disease (PKD) is a temperature-dependent disorder of salmonids induced by the myxozoan parasite *Tetracapsuloides bryosalmonae*. In Europe, *T. bryosalmonae* has been reported in rainbow trout, Atlantic salmon, brown trout, Arctic char, brook trout and grayling. This study reports for the first time the presence of *T. bryosalmonae* in European whitefish (*Coregonus lavaretus*) while the parasite was not found in vendace (*C. albula*) and European smelt (*Osmerus eperlanus*).

The Myxozoan parasite *T. bryosalmonae* causes one of the most devastating parasitic diseases in salmonid fish, known as Proliferative Kidney Disease (PKD). The disease is highly problematic for hatcheries as well as for wild fish populations in Europe and North America, causing high mortalities at elevated water temperatures (Hedrick et al., 1993; Wahli et al., 2002; Sterud et al., 2007). *T. bryosalmonae* has a complex lifecycle exploiting freshwater bryozoans and salmonids as primary and secondary hosts, respectively (Okamura et al., 2011).

In North America, *T. bryosalmonae* has been

reported in Pacific salmon and trout (*Oncorhynchus tshawytscha*, *O. kisutch*, *O. gorbuscha*, *O. clarki*, *O. mykiss*) (Hedrick et al., 1993; Braden et al., 2010), and most recently in mountain whitefish (*Prosopium williamsoni*) (Robbins, 2016). In Europe, *T. bryosalmonae* has been reported in rainbow trout, Atlantic salmon (*Salmo salar*), brown trout (*S. trutta*), brook trout (*Salvelinus fontinalis*), Arctic char (*S. alpinus*) and European grayling (*Thymallus thymallus*) (Plehn, 1924; Roberts, 1978; Hoffmann and Dangschat, 1981; Ellis et al., 1982; Clifton-Hadley et al., 1984), while conflicting evidence exists for pike *Esox lucius* (e.g. Seagrave et al., 1981; Bucke et al.,

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