



## **Infection of North Sea cod (*Gadus morhua* L.) postlarvae and juveniles with the parasites *Hysterothylacium aduncum* Rudolphi and *Caligus* sp.**

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# **Infection of North Sea cod (*Gadus morhua* L.) postlarvae and juveniles with the parasites *Hysterothylacium aduncum* Rudolphi and *Caligus* sp.**

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Parasitic infections of individual juvenile and adult Atlantic cod (*Gadus morhua* L.) have been well studied for decades, but infections of early life stages and the impact of parasitism on population level have been less well elucidated. It is generally assumed that early developmental stages of fish are more vulnerable to infection compared to older age groups, but merely few investigations on parasitic infections in young cod are available. We have therefore performed a parasitological investigation of a total of 3361 specimens of Atlantic cod post larvae and juveniles sampled from the North Sea in 1992, 1993, 1994, 1999 and 2001. Two metazoan parasites *Caligus* sp. and *Hysterothylacium aduncum* (Rudolphi) were found at relatively high frequencies. *Caligus* sp. showed a higher infection level in 1992 compared to the following years, whereas the prevalence of *H. aduncum* increased from 1992 to 2001. It was indicated that these young stages of cod were not able to tolerate high parasite burdens which suggests that survival may be affected by a high infection pressure. We also analysed if infection with *H. aduncum* would influence growth of cod post-larvae. This was done by comparing the body size of infected (1-2 parasites per fish) and uninfected fish sizes in various age groups. Ageing was performed by otolith readings, and it was indicated that cod younger than 44 days were negatively affected by infection whereas cod older than 44 days tolerated this low parasite burden.

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