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Published in:
Program and abstract for the conference Flavobacterium 2012

Publication date:
2012

Document Version
Publisher's PDF, also known as Version of record

[Link back to DTU Orbit](#)

Citation (APA):
Madsen, L., Ingerslev, H.-C., Boye, M., & Dalsgaard, I. (2012). Influence of organic diets and probiotics on an experimental *Flavobacterium psychrophilum* infection in rainbow trout fry. In *Program and abstract for the conference Flavobacterium 2012* (pp. 88). Åbo Akademi University.
<http://www.vet.dtu.dk/Forskning/Projekter/OptiFish.aspx>

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Influence of organic diets and probiotics on an experimental *Flavobacterium psychrophilum* infection in rainbow trout fry

Lone Madsen, Hans-Christian Ingerslev, Mette Boye & Inger Dalsgaard

*National Veterinary Institute, Technical University of Denmark, Bülowsvej 27, 1870
Frederiksberg C, Denmark*

Correspondence: loma@vet.dtu.dk

The aim of the Danish project OPTIFISH is to optimize growth and survival for organic cultured rainbow trout, the dominant fish species produced in Denmark. Currently there is no production of organic fry, as the classification organic only can be given to fish that have not been treated with antibiotics more than twice in a lifetime. This is hard to achieve as recurrent disease outbreaks, especially with the bacterium *Flavobacterium psychrophilum*, are seen during the fry stage. A further challenge is that diets with high plant contents cause enteritis and injury to the intestine, which in the end will affect the overall health status of the fish and result in a higher risk of disease following exposure to pathogenic microorganisms. OPTIFISH investigates how organic vs. non-organic diet types as well as diets with or without probiotics (lactic acid bacteria) affects the intestine, the intestinal microbiota and survival rates of rainbow trout following exposure to pathogens. An experimental bath model with *F. psychrophilum* was used for infecting subgroups of rainbow trout, approximately 1 g, raised on different diet types from first-feeding. Samples were taken before as well as after exposure to the pathogen from different groups and analysed by traditional bacteriology and molecular methods, e.g. next generation sequencing. Results of the analyses will be presented and discussed.



Program and abstracts for
the conference:

Flavobacterium 2012

The 3rd International Conference on Members
of the Genus Flavobacterium

Turku, 5-7 June 2012

