



Snorkel merder

Geirmund Vik – Egersund Net

Geir Magne Knudsen - Bremnes Seashore

Frode Oppedal, Havforskningsinstituttet

Prosjekter finansiert av

Norges Forskningsråd, SFI – CREATE

Fiskeri og Havbruksnæringens Forskningsfond – FHF

Egersund Net

Bremnes Seashore



CREATE

Seafood based innovation

FHFs Havbrukssamling høsten 2014, Hell 23-24 september

Luselarver finnes mest i øvre vannlag

Dyptsvømmende laks har mindre lus

Hvordan kan vi få laksen til å svømme dypt/ dypere

- Lys
- Fôring
- Nedsenkte merder
- Tak på merden



Available online at www.sciencedirect.com

SCIENCE @ DIRECT®

Aquaculture 220 (2003) 1–14

www.elsevier.com/locate/aqua-online

Aquaculture

The effect of artificial light treatment and depth on the infestation of the sea louse *Lepeophtheirus salmonis* on Atlantic salmon (*Salmo salar* L.) culture

E.M. Hevrøy^{a,b,*}, K. Boxaspen^b, F. Oppedal^c,
G.L. Taranger^c, J.C. Holm^{a,b}

^aDepartment of Fisheries and Marine Biology, University of Bergen, PO Box 7800, N-5020 Bergen, Norway

^bInstitute of Marine Research, Austevoll Aquaculture Research Station, N-5392 Storebø, Norway

^cInstitute of Marine Research, Matre Aquaculture Research Station, N-5984 Matredal, Norway

Received 31 December 2000; received in revised form 18 March 2002; accepted 22 April 2002

Abstract

Two field studies were carried out with farmed Atlantic salmon (*Salmo salar* L.) in sea cages to examine various effects of artificial light (AL) and the vertical distribution of salmon on lice infestation. The use of AL light caused an overall increase in lice infestation in both experiments. The first study showed that salmon held at 0–4 m depth in cages developed higher infestation than salmon held at greater depths (4–8 and 8–12 m) under both natural light (NL) and AL. In the second study, salmon maintained in 14-m deep sea cages that were exposed to AL with different light intensities. The AL treatments resulted directly in different diel and seasonal patterns of vertical distribution of the salmon and also different temporal patterns in lice infestations. So indirectly the infestation pattern appeared to be correlated with median day-time swimming depth of the salmon.

© 2003 Elsevier Science B.V. All rights reserved.

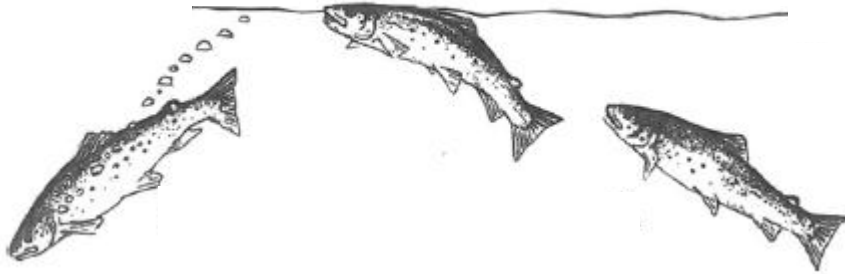
Keywords: Swimming behaviour; Artificial light; Sea lice; *Lepeophtheirus salmonis*; Infestation; Atlantic salmon; *Salmo salar*

1. Introduction

The louse *Lepeophtheirus salmonis* (Krøyer, 1837) infestation on cultured Atlantic

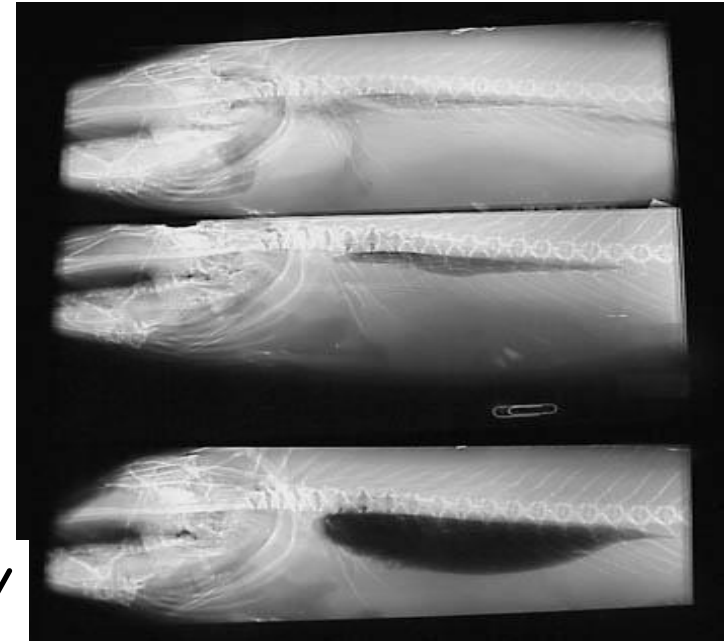
Laks har åpen svømmeblære

Laks må ha jevnlig tilgang til overflate for å fylle svømmeblære



Hvis ikke tømmes svømmeblære slik at oppdriftkontroll svekkes

Tid

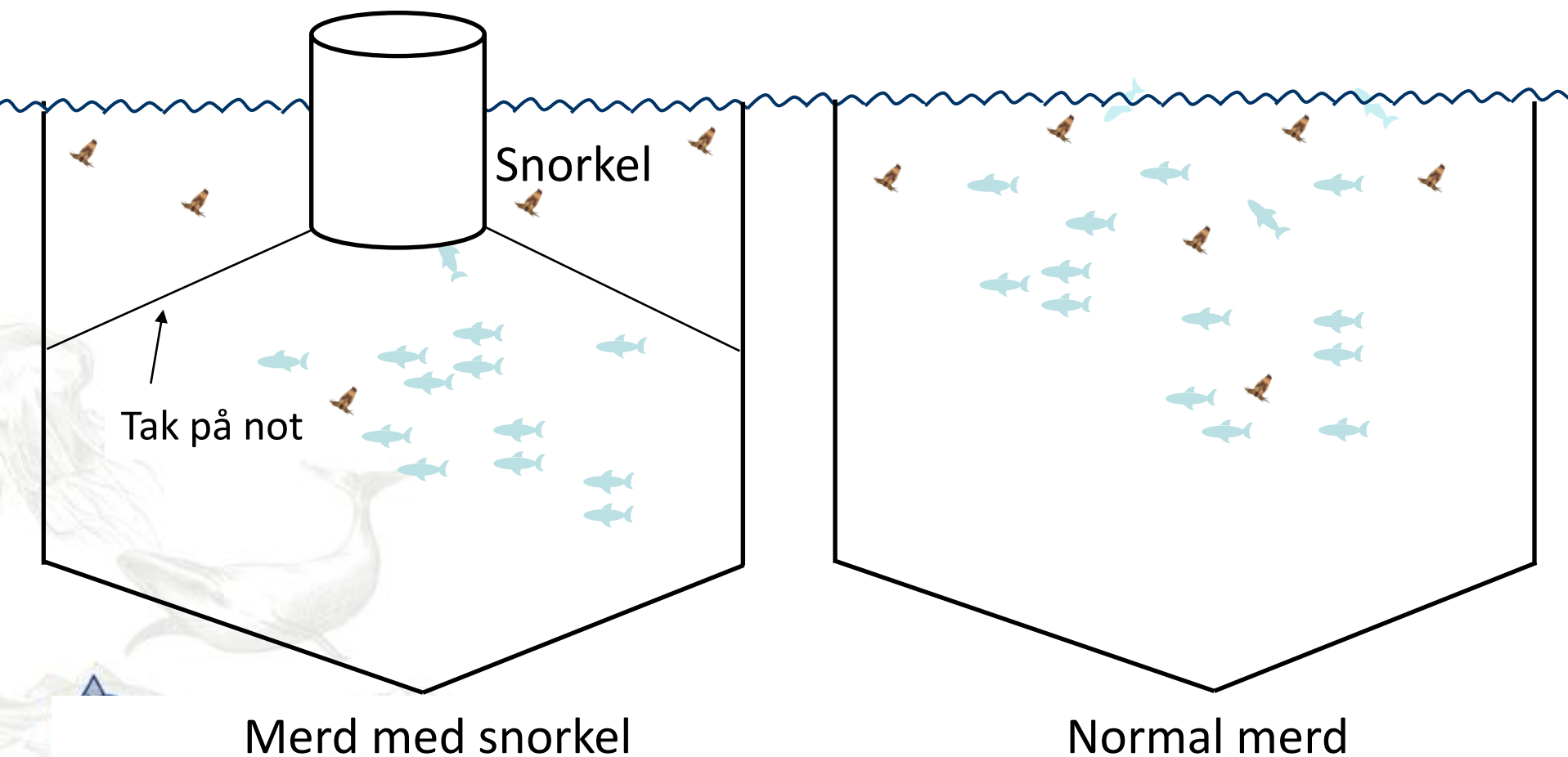


- Økt svømmehastighet, tiltet svømming
- Redusert appetitt, vekst, kondisjon, fôrfaktor
- Økt finne- og snuteslitasje, komprimert ryggrad
- Uakseptabel velferd



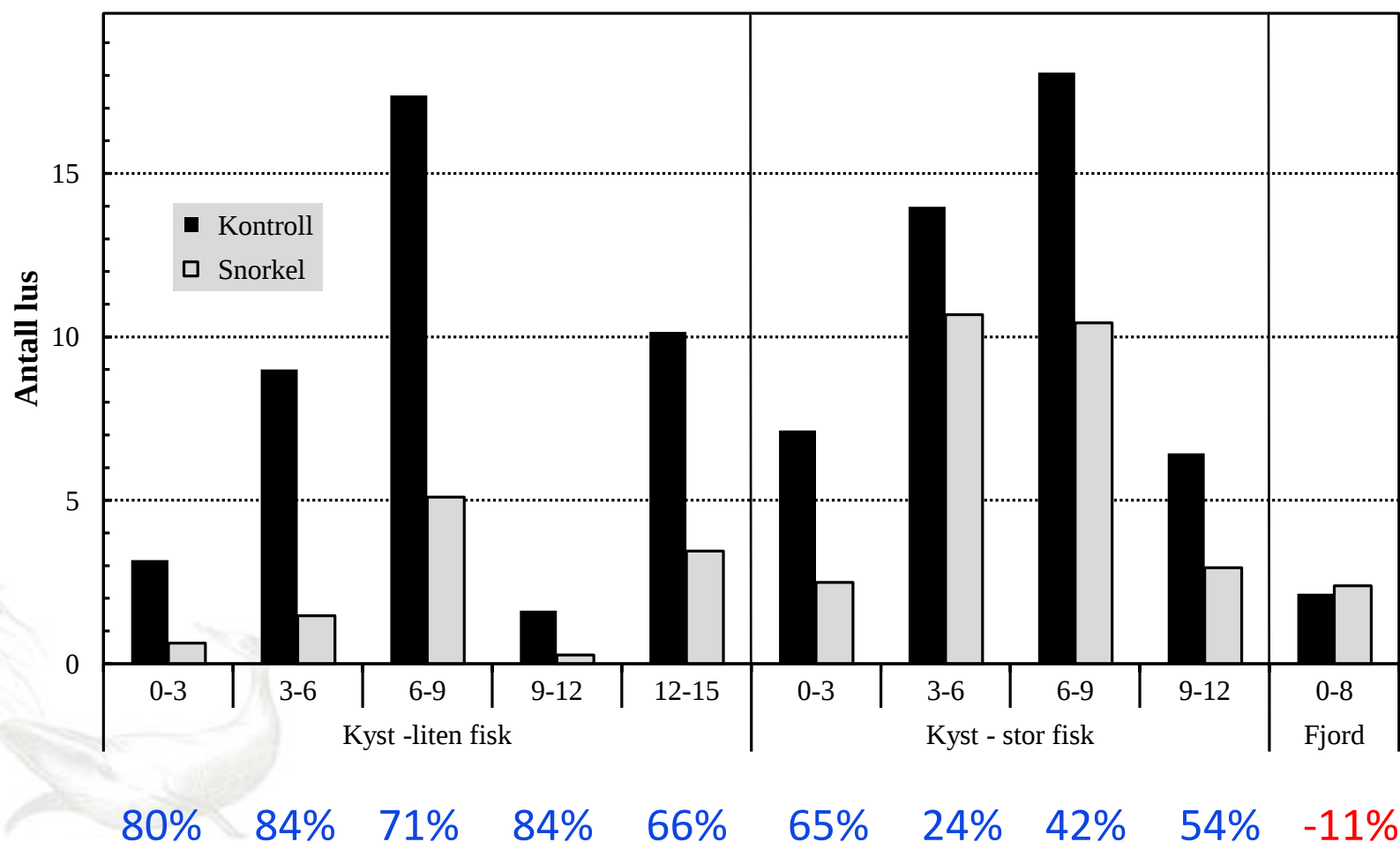
Snorkelmerd

Laks i snorkelmerder svømmer ikke de øverste 3-5 m, men har tilgang til å fylle svømmeblæren gjennom snorkelen



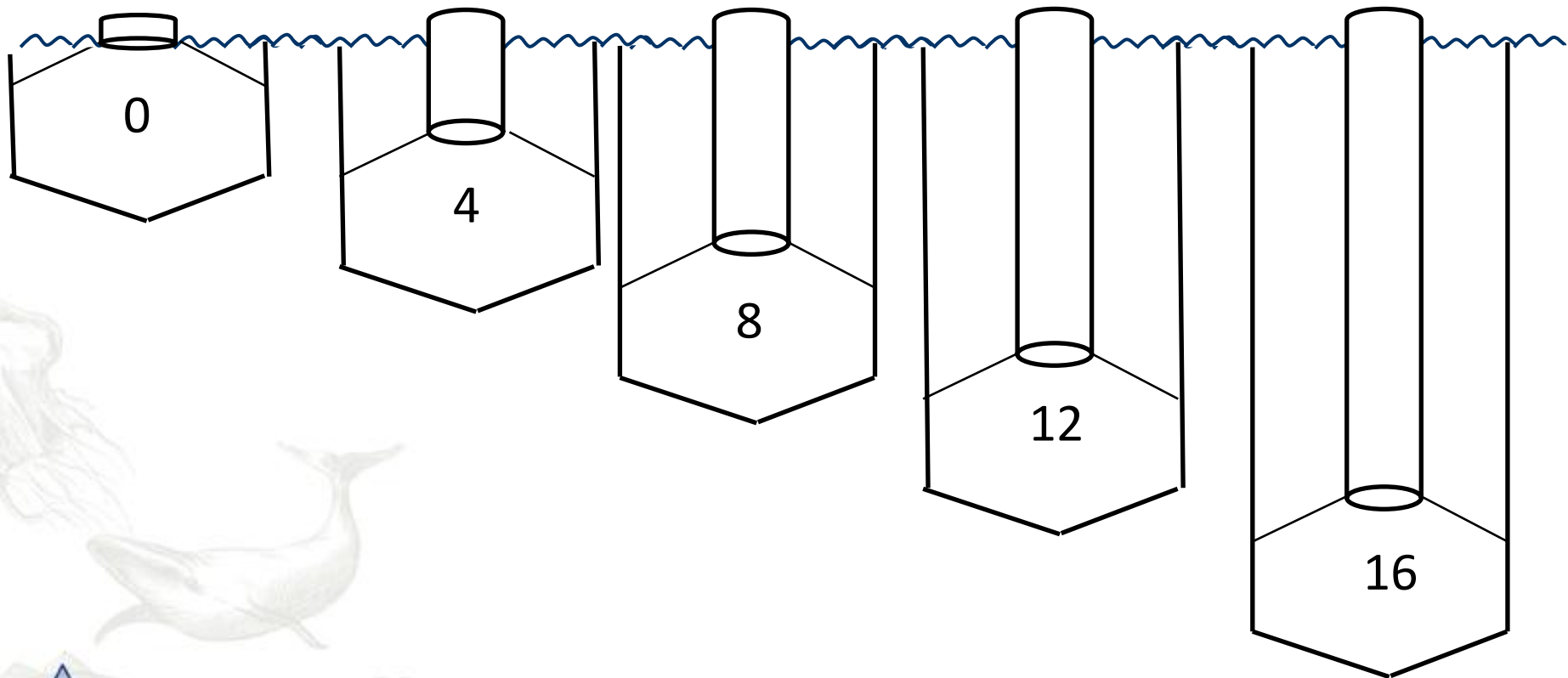
Opp til 84% redusert lusepåslog

3-4 m dyp snorkel



Kan vi oppnå 0 lus og god dyrevelferd?

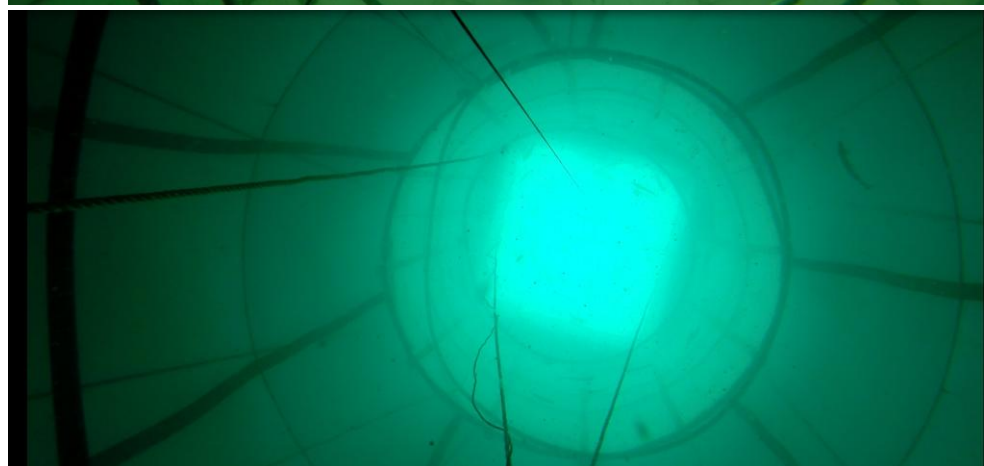
- Forsøksoppsett nov 2014 – feb 2015
 - Lusetall, appetitt, vekst, atferd



16 m dyp snorkel

-pilot forsøk juni 2014

- Logistikk testet
- Laksen benyttet snorkel
- Normal
 - atferd
 - Apetitt
 - vekst
- Lusetall
 - Kontroll: 27 ± 8
 - Snorkel: 0.2 ± 0.5
- **99% reduksjon!**





Centre for research based innovation in aquaculture technology

FHF snorkel prosjekt:

Styringsgruppe:

Rune Engevik (Lerøy Vest ASA)

Sigurd Kilane (Erfjord stamfisk AS)

Robin Neil Scotland (Marine Harvest Norway AS)

Observatør:

Kjell Maroni (Fisheries Seafood Fund/ FHF)

Egersund Net

Geirmund Vik

Monika Dybing



Egersund
Net
Part of Egersund Group


Bremnes Seashore