

FINE FISH Training Course, Malformations in Atlantic salmon
Bergen, Norway
26-27th March 2009

Thursday March 26			
10:00 – 10:20	Welcome and Introduction	Courtney Hough	FEAP
10:20 – 10:40	Malformations in farmed fish and the FINE FISH project	Grete Bæverfjord	Nofima Marin
10:40 – 11:00	Deformities in commercial production – status report from a fish vet	Solveig Nygaard	Fiskehelse og miljø as
11:00 – 12:00	Rearing temperatures as a causative factors for deformities Egg incubation – first feeding – juvenile stages – smoltification Temperature variation and temperature shocks. High and low temperatures. Interaction with other environmental factors.	Grete Bæverfjord Ingrid Lein	Nofima Marin
12:00 – 13:00	Lunch		
13:00 – 14:15	Dietary mineral supply in Atlantic salmon – impact on skeletal development. Requirements, growth rates and feed efficiency. Long term effects of inadequate supply. Control of mineral supply.	Grete Bæverfjord Synnøve Helland	Nofima Marin
14:15 – 15:00	Deformations of the spinal column in A. salmon	Per Gunnar Fjelldal	Institute of Marine Research (IMR)
15:00 – 15:30	Coffee break		Nofima Marin
15:30 – 16:00	Molecular mechanisms for skeletal deformities in Atlantic salmon	Elisabeth Ytteborg	Nofima Marin
16:00 – 17:00	Water quality as part of malformation etiology. CO ₂ /pH, O ₂ saturation and stress. Challenges of recirculation systems (RAS). Underyearling production strategies. Temperature regimes, vaccination strategies, smoltification procedures, light supplementation.	Grete Bæverfjord Synnøve Helland	Nofima Marin
17:00 - 17:30	What can we learn from production data – the FINE FISH development of a tool for data mining and benchmarking	Francesca Margiotta	FEAP
19:00 -	Dinner		
Friday March 27			
09:00 – 09:30	The relation between vaccination side-effects and deformities	Arnfinn Aunsmo	Salmar
09:30 – 10:00	Other causal factors – a summary of loose ends of the multifactorial etiology of deformities.	Grete Bæverfjord	Nofima Marin
10:00 – 10:45	Malformation diagnostics: Methodology and guidelines for classification	Kirsti Hjelde Grete Bæverfjord	Nofima Marin
10:45 – 11:15	Coffee break		
11:15 – 12:00	Malformation diagnostics, continued	Kirsti Hjelde	Nofima Marin
12:00 – 12:30	Fish welfare legislation applicable to salmon production	Bente Bergersen	Mattilsynet,
12:30 – 13:00	FINE FISH guidelines, manuals and protocols. Summary and closure	Grete Bæverfjord	Nofima Marin
13:00 – 14:00	Lunch		