Curriculum Vitae

Name: **Kim Schøn Ekmann**

Nationality: Danish

Civil status: Married to Stinne Uhrskov Ekmann. 2 children

Date of birth: December 19th 1972

Education: 2009-2013: Ph.D. in fish nutrition, January 2013, Danish Technological University (DTU), Section for Aquaculture
1993-2000: M.Sc. in Biology, June 2000, Aarhus University
1989-1992: Mathematical student, Hjørring Gymnasium (high school)

Key qualifications: Extensive knowledge about fish physiology, particularly nutritional physiology and nutritional requirements of a number of aquacultured fish species.

Extensive experience with intensive recirculated aquaculture systems (RAS) and development of bespoke RAS diets.

Extensive experience with biological documentation of raw materials utilized for aquafeeds, including sustainable raw materials.

Feed formulation and optimization of diets/recipes for Atlantic salmon, rainbow trout, gilthead seabream, European seabass, European eel and shrimp (Litopenaeus vannamei), including physiochemical characteristics of different raw materials on processability (effects on extrusion and lipid absorption potential).

Experience and responsibilities:

- Development of sustainable diets for several commercial aquaculture species, including European Seabass (*Dicentrarchus labrax*), Gilthead sea bream (*Sparus aurata*), rainbow trout (*Onchorynchus mykiss*) and Atlantic salmon (*Salmo salar*)
- Principle scientist in the development of bespoke recirculation aquaculture system (RAS) diets for rainbow trout and Atlantic salmon (BioMar's ORBIT concept)
- Global responsibility for biological approval of raw materials for all species
- Establishment of a multi-species raw material matrix comprising knowledge for safe formulation – determination of maximum acceptable raw material inclusion levels and partial apparent digestibility coefficients (ADC) determination.
- 18 years of experience in biological trialling under both controlled conditions (both own and external feed trial units) and under commercial farming conditions (both traditional and RAS farming)
- Formulation and optimization of commercial aquaculture diets for the European market and export feeds for China and Australia
- Ten years of management experience as feed trial unit (FTU) manager in BioMar R&D, Hirtshals, Denmark.
- Two and a half years experience as Global Raw Material Group manager in BioMar R&D.
- Strategy process work on both R&D department and global corporate level.

Occupational experience: September 2022 – present: Senior Researcher, Section for Aquaculture, DTU Aqua, Hirtshals, Denmark

May 2019 – July 2022: Senior Product Developer, Sourcing/Formulation/RAS, BioMar A/S, Brande, Denmark

July 2016 – May 2019: Senior Scientist, R&D Nutrition & Formulation group, BioMar AS, Trondheim, Norway

January 2014 – July 2016: Global R&D group manager – Raw materials, BioMar A/S, Brande, Denmark

December 2012 – January 2014: Manager of BioMar's feed trial unit at the North Sea Science Park, Hirtshals, Denmark

March 2009 – November 2012: Ph.D. student at Section for Aquaculture, DTU Aqua, Technical University of Denmark and part time employment in BioMar's R&D department

November 2000 – March 2009: Daily manager of BioMar's biological trial station at the North Sea Science Park, Hirtshals, Denmark

February 1999 – March 2000: Student worker, Danish Institute for Fisheries Technology and Aquaculture (DIFTA)

April 1998 – September 1998: Student worker, Bio/consult A/S

September 1996 – January 1997: Biological project work under the DANIDA sponsored 'Tropical Marine Mollusc Programme', Phuket Marine Biological Centre, Phuket, Thailand

Scientific publications:

Gachango, F.G.; Ekmann, K.S.; Frørup, J.; Pedersen, S.M., 2017 "Use of pig by-products (bristles and hooves) as alternative protein raw material in fish feed: A feasibility study". Aquaculture, vol. 479, p. 265-272.

Dalsgaard, A.J.T.; Knudsen, K.E.B.; Verlac, V.; Ekmann, K.S.; Pedersen, P.B., 2016 "Supplementing enzymes to extruded, soybean-based diet improves breakdown of non-starch polysaccharides in rainbow trout (*Oncorhynchus mykiss*)". Aquacult. Nutr., vol. 22, issue: 2, p. 419-426.

Letelier-Gordo, C.O.; Dalsgaard, A.J.T; Suhr, K.I.; Ekmann, K.S.; Pedersen, P.B., 2015 "Reducing the dietary protein:energy (P:E) ratio changes solubilization and fermentation of rainbow trout (*Oncorhynchus mykiss*) faeces". J. Aqua. Eng., vol. 66, p. 22-29.

Ekmann, K.S.; Dalsgaard, A.J.T.; Holm, J.; Campbell P.J.; Skov P.V., 2013 "Effects of dietary energy density and digestible protein:energy ratio on *de novo* lipid synthesis from dietary protein in gilthead sea bream (*Sparus aurata*) quantified with stable isotopes". Br. J. Nutr., DOI: http://dx.doi.org/10.1017/S0007114513001281

Ekmann, K.S.; Dalsgaard, A.J.T.; Holm, J.; Campbell P.J.; Skov P.V., 2013 "Glycogenesis and *de novo* lipid synthesis from dietary starch in juvenile gilthead sea bream (*Sparus aurata*) quantified with stable isotopes". Br. J. Nutr., vol. 109, issue: 12, p. 2135-2146.

Dalsgaard, A.J.T.; Verlhac, V.; Hjermitslev, N.H.; Ekmann, K.S.; Fischer, M.; Klausen, M.; Pedersen, P.B., 2012. "Effects of exogenous enzymes on apparent nutrient digestibility in rainbow trout (*Oncorhynchus mykiss*) fed diets with high inclusion of plant-based protein". Anim. Feed Sci. Tech., vol. 171, p.181-191

Dalsgaard A.J.T.; Ekmann K.S.; Pedersen P.B.; Verlhac V., 2009. "Effect of supplemented microbial phytase on the performance of phosphorus-limited juvenile rainbow trout (*Onchorynchus mykiss*) and on the magnitude and composition of the phosphorus waste output". Aquaculture, vol. 286, p. 105-112

Rasch M.; Buch C.; Austin B.; Slierendrecht W.J.; Ekmann K.S.; Larsen J.L.; Johansen C.; Riedel K.; Eberl L.; Givskov M.; Gram L., 2004. "An Inhibitor of Bacterial Quorum Sensing Reduces Mortalities Caused by Vibriosis in Rainbow Trout (*Oncorhynchus mykiss*, Walbaum)". Systematic and Applied Microbiology, vol. 27, issue 3, p. 350-359

Fenn, E.; Holm, J.; Ekmann, K.S.; McKenzie, D.J.; Steffensen, J.F.; Wang, T.; Taylor, E.W., 2003. "The effect of dietary protein on gilthead seabream, assessed using static respirometry". Comp. Biochem. Physiol., vol. 134A, issue 3, pp. 16

Scientific poster presentations:

Ekmann, K.S.; Dalsgaard A.J.T.; Holm, J.; Campbell, P.J.; Skov, P.V., 2011. "Effects of substituting lipid with starch as metabolic fuel on performance and nutrient utilization in gilthead sea bream (*Sparus aurata*) juveniles". EAS meeting, Rhodes, Greece.

Waagbø, R.; Bendiksen, E.Å.; Ekmann, K.S.; Guttvik, A.; Hemre, G-I., 2010. "Vitamin and mineral status in young rainbow trout fed extruded feeds with graded inclusions of a vitamin and mineral premix". 14th International Symposium on Fish Nutrition & Feeding - Qingdao, China

Ekmann, K.S.; Holm, J.; Pedersen, P.B., 2003. "Dietary lipid level for gilthead sea bream – effects on apparent digestibility, growth, protein retention and proximate composition". ISFNF conference, Rhodes, Greece.

Reports and popular science publications:

Henryon, M.; Berg, P.; Olesen, N.J.; Kjær, T.; Schlierendrect, H.; Ekmann, K.; Lund, I.; Jokumsen, A., 2003. "Avlsarbejde kan øge sygdomsresistens hos regnbueørred" Ferskvandsfiskeribladet, nummer 6, p. 126-127

Ekmann, K.S., 2000. "Effects of dietary lipid level on apparent digestibility coefficients, growth performance, protein retention ratio and proximate composition of gilthead seabream (Sparus aurata)", Specialerapport, Århus Universitet

Ekmann, K.S., 1997. "Settling and dispersal of tropical marine molluscs", National Research Council of Thailand

Oral presentations:

Ekmann, K.S., 2013. "Feed for recirculating aquaculture systems". Farmer's Day Seminar, Aalborg, Denmark.

Ekmann, K.S., 2013. "Feed for recirculation aquaculture systems (RAS)". 2nd NordicRAS workshop, Aalborg, Denmark.

Ekmann, K.S., 2014. "Feed for recirculation aquaculture systems (RAS)". Aquaculture Europe 2014, San Sebastián, Spain.

Ekmann, K.S., 2015. "ORBIT for Atlantic salmon". Commercial launch of recirculation diet for Atlantic salmon. Puerto Varas, Chile.

Ekmann, K.S. and Jensen, M.D., 2015. "Recirculation feed for Atlantic salmon". 3rd NordicRAS workshop, Molde, Norway.

Ekmann, K.S. and Zatti, K.M., "Shit matters – quality matters". PatagonicRAS 2018, Puerto Varas, Chile.

Zatti, K.M. and Ekmann, K.S., 2019. "Feed for advanced aquaculture technology". 5th NordicRAS workshop, Berlin, Germany.

Farmer's day presentations ('Opdrættermøde') in 2004, 2006 and 2010

Internal sales seminar presentations in 2010, 2014, 2015, 2016

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Advisory panel:

Member of an international expert panel evaluating the Master of Science in Engineering, Aquatic Science and Technology programme offered at the Technical University of Denmark (DTU), 2021.