

Tenth International Conference on Recirculating Aquaculture – August 22 – 24, 2014

June 2, 2014

Thursday, August 21, 2014

2:00 p.m. - 8:00 p.m. Exhibitor Set-up

Friday, August 22, 2014

Time

7:30am – 5:00pm *Registration*

8:00am - 5:00pm *Continuous Refreshment Break*

9:00am - 9:00pm *Trade Show Open*

8:30 – 9:30

Welcome

George Flick

Plenary Session – Washington Room

Bjarne Hald Olsen, Billund Aquaculture, Denmark - Current Status and Vision for the Future of Fish Production within Water Recirculation Systems

Roanoke A

Health and Diseases Session

Moderator: C. Good

9:30 - 10:00

L.-F. Pedersen

Ozone in a Jar - Water Treatment with Peracetic Acid Products

10:00 - 10:30

C. Good

Investigating Early Male Maturation in Salmonids in RAS

Roanoke B

Engineering & Systems Design Session

Moderator: L. Marsh

H. Grundvig

New Diffused Aeration Concept for Aquaculture in Earthen Ponds and Large Scale Tanks

B. Briese

Taste of BC Aquafarms Model Trout Farm RAS System Integrates New Technologies and Low Head Systems for Cost Effective and Duplicatable Commercial Production

Crystal A, B, C

Advances in Animal Nutrition for RAS Session

Moderator: G.J. Flick

A. Davis

Recent Advances in Fish and Shrimp Nutrition

S. Backman

Feed Yesterday, Today and Tomorrow

Crystal D, E

Aquaponics Session

Moderator: D.P. Taylor

D.I Anadu

Aspects of Aquaponics: A Review

D. Love

A Survey of Commercial Aquaponics Operators

10:30 - 11:00	Break	Break	Break	Break
11:00 - 11:30	B. Vinci Biosecurity Considerations during the RAS Design Phase	U. Ben Yosef Recycling Solid Waste for Bioenergy in a Near Zero-Discharge Land-Based Recirculated Saline System	D. Drahos Use of Recent Practical Molecular Tools for Beneficial Microbes in Aquaculture	R. Chatterson Heirloom Tomato Production Trial in a Zero Discharge Recirculating Aquaponics System
11:30 - 12:00	R.H. Khalil Some Study on Heavy Metal and Bacterial Infection Relationship in Some Cultured Marine Fish	S.D. van Gorder Comparison of Biofiltration Performance Characteristics of the Rotating Biological Contractor (RBC) and the Moving Bed Bioreactor (MBBR) in Recirculating Aquaculture Systems	G.S. Burr Growth and Fatty Acid Composition of Two Strains of Arctic Charr (<i>Salvelinus alpinus</i>) Fed Diets Formulated with Low Fish Oil Inclusion in a Recirculating Aquaculture System	C.L. Ramos Considerations of Desing and Ionic Balance of a Hybrid Recirculating Aquaculture Technique using Commercial Aquaponics, Biofloc, Algae and/or Nitrification Systems for Tilapia Culture
12:00 - 1:30	Lunch	Lunch	Lunch	Lunch
	Hatchery Technologies Session Moderator: M. Schwarz	RAS Design Innovations & Opportunities for New Technologies Session Moderator: S. Summerfelt	Nutrition Session Moderator: L. Marsh	Session Moderator:
1:30 - 2:00	M. Schwarz Development of Larval Production Protocols for Emerging Marine Finfish Species	G. Myers RAS Design Innovations Leading to Significantly Reduced Costs of Finfish Production	O.K. Gbadamosi Nutritional Assessment of <i>Phaeodactylum tricornutum</i> Based Feeds for Tilapia in Intensive Aquaculture	W. Wasielesky The Use of Fish Meal Analogy in the Feeding of <i>Litopenaeus vannamei</i> BFT Culture
2:00 – 2:30	N.King Intensive Rearing of Larval Finfish; A Review of Critical Benchmarks	I. Warrer-Hansen Cost-Efficient Strategies for CO ₂ Control in RAS	K.T. Stiller Metabolic Fuel Use of Rainbow Trout Feed with Varying Macronutrient Feeds in Low Oxygen Environment at Different Temperatures	D. Kuhn & M. Choi Title
2:30 - 3:00	Break	Break	Break	Break
3:00 - 3:30	A. Rhyne A Public Aquarium Larval Rearing System	F. Gaumet RAS Design Innovations & Opportunities for New Technologies	C.O. Letelier Gordo Effects of Diet Composition on Hydrolysis and Fermentation of Faecal Solids for Denitrification	C. Browdy Title
3:30 - 4:00	A. Rhyne Advances in Copepod Culture for Finfish Larviculture	T. Losordo & H. Tran Linking RAS and Aquaponics for Reduced Effluent Discharge	C.L. Ayisi An Assessment of Growth, Feed Utilization, Body Composition and Plasma Metabolites of <i>Oreochromis niloticus</i> Fed Diets of Different Palm Oil Levels Exclusively	J. Lefler Title
4:00 - 4:30	A. Squadrito Effect of Live Versus Prepared Diets on the Growth and Survival Rate of Larval Paddlefish, <i>Polyodon spathula</i>	Panel Discussion	A.M. Salem Greenwater, Marine <i>Bacillus subtilis</i> Probiotic and Synbiotic Enriched Artemia and Rotifers Improved European Seabass <i>Dicentrarchus labrax</i> Larvae Early Weaning Water Quality and Bacteriology in Alexandria, Egypt	W. Wasielesky Evaluation of Dissolved CO ₂ Concentration in <i>Litopenaeus vannamei</i> BFT Culture in Different Amounts of TSS

Poster presenters will be available for questions

A.K. Amirkolaie

Dissolved Air Flotation System Influences Nitrification in a Recirculation Aquaculture System (RAS)

S.K. Barman

Potential of Recirculating Aquaculture in Bangladesh

J. Barraza

Pressure Drop Due to Biofouling Roughness Under Turbulent Seawater Flow in Pipes Systems

S. Crisp

Geothermal Benefits in Recirculating Aquaculture

A.B. Dauda

Performance of Palm Kernel Shell as a Denitrification Media at Different Drying Times in Recirculating Aquaculture System

H.S. El-Sayed

Effects of Short Term Feeding of Some Microalgae on the Microbial Profiles Associated with *Dicentrarchus labrax* Post Larvae

H.S. El-Sayed

Great Enhancement of Growth and Survival of *Solea vulgaris* Larvae Reared on Live Food Enriched with Industrial Organic Waste

F.A. Fakunmoju

Effects of Different Levels of Dietary Sun-Dried Cassava Peels on the Growth Performance and Economical Characteristics of Nile Tilapia (*Oreochromis niloticus*)

W.A. Fayed & G.R.A. Sallam

Influence of Dietary Protein Levels of Nile Tilapia, *Oreochromis niloticus* (L.), Fingerlings during Maturation Period on Fry Production, Survival and Unfavorable Conditions Tolerance

M. Gholizadeh

A Simulation Model for Multiple Stocks and Multiple Species Production Optimization in RAS

A.M. Hammed

The Use of Coconut Oil as an Alternative Source of Energy in the Diet of African Mud Catfish (*Clarias gariepinus*) Juveniles

B.U. Ibrahim

Food and Feeding Habit of *Clarias anguillaris* in Tagwai Reservoir Minna, Niger State, Nigeria

G.O. Idowu

The Cost Effectiveness Design of Electrocoagulation-Recirculation Aquaculture System in a Developing Country

C. Khangembam

Use of an Eco-Friendly and Cost-Effective Filter Bed Material in Recirculating System for the Removal of Nitrogenous Wastes

A.M. Lotfy

Effect of Feed Additives on Feed Attractability, Growth Performance, and Survival Rate of Gilthead Sea Bream, *Sparus aurata* Larvae

Y.-A. Ma

Development of a Chlorophyll Fluorescence Detector Using in Microalgae Cultivation

Y.-A. Ma

Using Absorption Spectrum and Chlorophyll Fluorescence to Evaluate the Growing Conditions of Microalgae

M. Moriarty

Effect of UV Light Treatment on Total Coliforms in Water and Internalization of *Escherichia coli* in Lettuce in Aquaponic Systems

K. Nadiradze

Aquaculture Farming in Georgia

R.W. Prihardianto & H. Nadeak

Biodiesel from Microalgae *Botryococcus braunii* as Resource Renewable Energy

A.M. Salem

Effects of Clearwater, Greenwater, Marine *Bacillus subtilis* Probiotic and Synbiotic on European Seabass *Dicentrarchus labrax* Fertilized Eggs and Newly Hatched Yolk Sac Larvae Length, Growth, Survival, Water Quality and Bacteriology in Alexandria, Egypt

A.M. Salem

Impacts of Female Broodstock European Seabass (*Dicentrarchus labrax*) Weight on the Reproductive and Post Larvae Growth Performances under NIOF Marine Hatchery Conditions in Alexandria, Egypt

M. Shafahi

Aquaponics, a Sustainable Food Production System

6:00 - 8:00pm Dinner

(Moderator: Dave Kuhn)

Saturday, August 23, 2014

8:00am - 10:00am *Registration*

8:00am - 4:00pm *Continuous Refreshment Break*

9:00am - 3:00pm *Trade Show Open*

Roanoke A

Shrimp Culture in RAS Session I
Moderator: D. Kuhn & A. Lawrence

9:00 - 9:30
A. Lawrence
Heterotrophic Biofloc Production in Four to Six Days in the Shallow Water Raceway Production System

9:30 - 10:00
A. Lawrence
Production Strategies for Juvenile *Litopenaeus vannamei* using a Two Phase Nursery Raceway System

10:00 - 10:30
L.-M. Wang & A. Lawrence
Dietary Protein Effect on Survival and Growth of *Litopenaeus vannamei* and Water Quality in Recirculating and Zero Exchange Water Systems

10:30 – 11:00
Break

11:00 - 11:30
L.-M. Wang & A. Lawrence
Dietary Vitamins, Cu and Zn Effect on Survival and Growth of *Litopenaeus vannamei* and Water Quality in Recirculating and Zero Exchange Water Systems

11:30 - 12:00
V. Robitaille
Comparing the Accuracy of Different Methods for Counting Shrimp Post Larvae

12:00 - 1:30
Lunch

Roanoke B

Innovative Research & Technologies for RAS Session
Moderator: J. Davidson

L. Christianson
Woodchip Denitrification Bioreactors for Treatment of RAS Effluent

S. Summerfelt
Use of Membrane Biological Reactors within Water Recirculating Aquaculture Systems to Remove Nitrate, Stabilize Biosolids, and Eliminate System Flushing and Discharge Requirements

J. Davidson
Evaluating Standard Operating Procedures to Mitigate Off-Flavor from Atlantic Salmon *Salmo Salar* Cultured in a Semi-Commercial Scale Recirculating Aquaculture System

Break

K. Attramadal
Positive Microbial Control, Sanitation, Disinfection and Risk of Contamination in RAS

B. Barrut
Water Delivery Capacity, Gas Exchange and Particulate Removal Efficiencies of a Vacuum Airlift – Application to Water Recycling in Aquaculture System

Lunch

Pocahontas

Topics in RAS Session
Moderator: L. Marsh

S. Srivastava
Asset Performance Index – A Custom Metric for Aquaculture Financial Health Assessment

M. Moriarty
Effect of UV Light Treatment on Total Coliforms in Water and Internalization of *Escherichia coli* in Lettuce in Aquaponic Systems

S. Summerfelt
Retrospective Assessment of the Design and Assumptions used in a 125 Tonne/yr Water Recirculating System Used for Yellow Perch and Rainbow Trout Production

Break

N.G-E. Mohammady
Maximizing Utilization of *Chlorella* Algae for Simultaneous Feeding and Biodiesel Production

K.M. Adamu
Growth and Physiological Profiles of Hybrid Catfish Fed Fluted Pumpkin Leaf and African Locust Bean in a Recirculating Aquaculture System

Lunch

Shrimp Culture in RAS Session II

Moderator: D. Kuhn & A. Lawrence

Marine Species in RAS Session

Moderator: K. Attramadal

Waste Management & Water Quality Session

Moderator: D.P. Taylor

1:30 - 2:00

J. Crockett

Two Organic Carbon Application Rates to Control Inorganic Nitrogen in Minimal Water Exchange, Biofloc, Shallow Water, Shrimp Nursery Systems

U. Waller

Technology and Testing of a Highly Engineered Multi-Trophic Recirculation Aquaculture System (RAS) for Fish, Halophytes, and Microalgae

A.B. Holan

Development of Rapid Methods for Measurement of Biodegradable Organic Carbon in Recirculating Aquaculture System (RAS)

2:00 - 2:30

J. Crockett

Comparison of Growth and Production in Minimal Water Exchange, Biofloc, Shallow Water, Shrimp Nursery Systems using Two Feeding Rates

I. Seginer

Growth Models for Gilthead Sea Bream (*Sparus aurata*)

M. von Ahnen

Removal of Urea, Ammonium and Nitrite in Moving Bed Biofilters Operated at Different Loadings

2:30 - 3:00

Break

Break

Break

3:00 - 3:30

A. Ray

Perspectives and Innovations in Biofloc-Based Aquaculture

J. Orellana

Culture of Yellowtail Kingfish (*Seriola lalandi*) in a Marine RAS Using Artificial Seawater

P. Fernandes

Water Quality in an Experimental Recirculating Aquaculture System, as Affected by Biofilter Mode of Operation

3:30 - 4:00

A. Ray

Clear Water RAS Versus Biofloc Technology and an Evaluation of the Nutritional Contribution of Biofloc to Shrimp (*Litopenaeus vannamei*)

A.B. Holan & S.W. Dahle

Membrane Filtration of the Bacteria *Moritella viscosa* from Seawater

M. Schumann

Floating Faeces – First Experiences with a New Approach to Optimizing Solid Removal in RAS

4:00 - 4:30

Speaker

Title

M. Abdel-Rahmin

Effect of the Bottom Area of Spawning Tank on the Reproductive Performance of Green Tiger Shrimp, *Penaeus semisulcatus*

Y.-J. Ruan

Bacterial Community Analysis of Biofilter in Full-Scale Marine Recirculating Aquaculture System Based on 454 Pyrosequencing

Sunday August 24, 2014

Field trip (Includes lunch)

6:00 a.m. - 6:00 p.m. Freshwater Institute, Shepherdstown, WV