

Aquaculture America 2012



Bringing all Players to the Table

February 29 - March 2
Paris Las Vegas
Las Vegas, Nevada USA

THE NATIONAL CONFERENCE & EXPOSITION OF



NATIONAL
Aquaculture
ASSOCIATION



Associate Sponsors

American Tilapia Association
American Veterinary Medical Association
Aquacultural Engineering Society
Aquaculture Association of Canada
Catfish Farmers of America

Global Aquaculture Alliance
Global Aquaculture Alliance
International Association of Aquaculture
Economics and Management
Latin American Chapter WAS
Striped Bass Growers Association
US Shrimp Farming Association
US Trout Farmers Association
Zebrafish Husbandry Association



AQUACULTURE AMERICA RETURNS TO LAS VEGAS



AQUACULTURE AMERICA 2012 returns to one of the favorite entertainment spots in the world for the only major national aquaculture conference and exposition held in the U.S. The U.S. Aquaculture Society (formerly U.S. Chapter of WAS) joins with National Aquaculture Association and the U.S. Aquaculture Suppliers Association to produce the annual Aquaculture America meetings.

These sponsors are joined by the annual meetings of Aquacultural Engineering Society, American Tilapia Association, Striped Bass Growers Association, US Trout Farmers Association, US Shrimp Farming Association and many more associations to make Aquaculture America 2012 the one meeting in the U.S. that you don't want to miss!

BEYOND THE CONFERENCE

Las Vegas offers many attractions and great fun. Aquaculture America 2012 is the place to learn about the latest in aquaculture, see the newest technology in the trade show and have a great time in the many fantastic restaurants, bars and entertainment sites in Las Vegas.

A CRITICAL TRADE SHOW FOR AQUACULTURISTS!

AQUACULTURE AMERICA 2012 will have the largest aquaculture trade show in the Western Hemisphere and one of the largest anywhere in the world with nearly 200 booths! This is your opportunity to inspect the latest in products and services for the aquaculture industry. It is the place to visit current suppliers and make new contacts. To keep ahead and to keep profits building, you need to keep pace with the technological advancements in the industry - and AQUACULTURE AMERICA 2012 is the place to do it!



EXPANDED PRODUCER PROGRAM

Aquaculture America is known for the high quality of its Producer Program organized by NAA. AQUACULTURE AMERICA 2011 will continue to expand the size and scope of the producer program to address all of the issues facing producers in the U.S. as well as around the world. Topics Include:

- Communications and Media
- Aquatic Animal Health
- National Animal Identification
- Feed Safety
- Aquatic Invasive Species
- Marketing
- Offshore Aquaculture
- Environmental Issues
- Start Up Aquaculture
- Science and Public Policy
- Federal Agency Town Hall Meeting

TECHNICAL PROGRAM COVERS THE LATEST RESEARCH

The U.S. Aquaculture Society will put together an extensive technical program featuring special sessions, contributed papers and workshops on all of the species and issues facing aquaculturists around the country and throughout the world. Sample topics:

- | | |
|-------------------------------|------------------------------------|
| Best Management Practices | Engineering |
| Environmental Monitoring | Statistics and Modeling |
| Biotechnological Applications | Biofloc Technology |
| Extension/Technology Transfer | Effluent Waste Management |
| Education Programs | Recirculation Systems |
| Ornamentals | Live Feed Production |
| Farm Production | Baitfish Production |
| Policy/Regulations | Polyculture |
| Stock Enhancement | Larviculture |
| Drugs/Therapeutants | Zebrafish |
| Water Quality and Effluents | Channel and Hybrid Catfish Culture |
| Finfish Physiology | Marine Finfish Culture |
| Ecological Interactions | Marine Shrimp Culture |
| Economics | Coldwater Fish Culture |
| Feeds/Nutrition | Mollusk Culture |
| Alternative Feed Ingredients | Finfish Culture |
| Health and Disease | Crustacean Culture |
| Animal Welfare | |
| Genetics and Breeding | |

YOUR FULL CONFERENCE REGISTRATION INCLUDES:

- Only pre-registered attendees are guaranteed materials
- Admission to all sessions, seminars and the trade show.
 - Admission to the President's Reception.
 - Conference Bag, Abstract CD and Show Directory
 - Refreshment Breaks and Cash Bar Happy Hour
 - Students receive the full registration package plus the Student Reception. To qualify for the student rate, a copy of your student I.D. is required.



CALL FOR PAPERS – DEADLINE: September 2, 2011

AQUACULTURE AMERICA 2012 encourages the submission of high quality oral and poster presentations. We strongly encourage authors to consider poster presentations because poster sessions will be an integral part of the program. Papers submitted for “oral presentation only” may not be accepted as oral presentations due to the limited number of available time slots. **All abstracts must be in English – the official language of the conference.**

Each oral presenter shall be entitled to no more than 12 minutes for a presentation, plus 3 minutes for questions. Authors of studies involving proprietary products or formulations should present this information in workshops or the trade show. Oral presentations should use Power Point. Slides, overhead projectors and video players will not be available or allowed.

All presenters are required to pay their own registration accommodation and travel expenses. AQUACULTURE AMERICA 2012 cannot subsidize registration fees, travel or hotel costs.

No Abstract Book will be printed – a CD Abstract Book will be given to registered attendees.

INSTRUCTIONS FOR PREPARATION OF ABSTRACTS

Expanded Abstract Format - Please refer to the sample.

- 1. TITLE OF PAPER:** The abstract title is printed in CAPITAL LETTERS, with the exception of scientific names which should be Upper/lower case and *italicized* (see example). Scientific names should not be preceded or followed by commas or parentheses or other markings.
- 2. AUTHOR(S):** The first name should be the presenting author. Use * after the presenting author. Type in upper/lower case.
- 3. ADDRESS AND EMAIL:** Type only the presenting author's institution, address and email. Type in upper/lower case.
- 4. MAXIMUM LENGTH:** One Page
- 5. PAGE SIZE:** Standard 8.5 x 11 inch paper (portrait)
- 6. MARGINS:** 1-inch margin throughout (left/right/top/bottom)
- 7. SPACING:** Single spaced
- 8. PARAGRAPHS:** Paragraphs should be separated by a blank line and should not be indented.
- 9. FONTS:** Character fonts should be 12 point type.
- 10. FIGURES & TABLES:** Figures and tables are highly recommended. They should be reduced to the appropriate size for a one page abstract and should be clearly readable at the reduced size. The reduced figures and tables should be included in the abstract in camera-ready form.

1 inch margin (2.54 cm)

EVALUATION OF JUVENILE AUSTRALIAN RED CLAW CRAYFISH *Cherax quadricarinatus* FED PRACTICAL DIETS WITH AND WITHOUT SUPPLEMENTAL LECITHIN AND/OR CHOLESTEROL

Laura A. Muzinic*, Kenneth R. Thompson, Tracey Christian, Carl D. Webster,
Lukas Manomaitis, and David B. Rouse

Aquaculture Research Center
Kentucky State University
Frankfort, KY 40601
lmuzinic@csr.net

Red claw crayfish (*Cherax quadricarinatus*) are one of more than a hundred species of Australian freshwater crayfish. However, because of its rapid growth rate, ease of spawning, wide tolerance for dissolved oxygen tolerance, and lack of a larval stage, red claw may be the best candidate for aquaculture in the United States. Red claw are only being investigated as an aquaculture species in this country and no information exists on their nutritional requirements and practical diet formulations. Many crustaceans require lecithin and cholesterol to be added to their diet, these two nutrients are usually found in fish oils; however, lecithin and cholesterol are very expensive. Since diet costs can be as much as 70% of the total expenses for an aquaculture enterprise, it is imperative that the least expensive diet be developed that meets the nutrient requirements of the species. The present study was conducted to determine if cholesterol or lecithin needs to be added to a practical diet for red claw crayfish.

An 8-week feeding trial was conducted in a recirculating system with newly-hatched juvenile (mean initial weight of 0.2 g) red claw, each stocked in individual plastic mesh culture units. Individual units were placed within fiberglass tanks, each containing aeration and water line. Water was recirculated through physical and mechanical filters. Water temperature was maintained at 27-29°C and lighting was provided by overhead fluorescent ceiling lights on a 12-hour light:dark cycle. Ammonia, nitrite, nitrate, oxygen, temperature, alkalinity, chloride, and pH were measured three times per week. The goal of the study was to examine the effects of growth performance of newly-hatched juvenile red claw when fed four practical diets with or without cholesterol and lecithin. Other practical diets included menhaden fish meal, soybean meal, shrimp meal, wheat flour, vitamin and mineral mix, pellet binder, cod liver oil, and corn oil (Table 1).

After 8 weeks, red claw crayfish fed a practical diet without cholesterol (Diet 3) had significantly ($P < 0.05$) lower final weight, percentage weight gain, and specific growth rate (SGR) compared to crayfish fed all other diets (Table 2). These results indicate that a practical diet containing 2% cod liver oil and 1% corn oil and having no lecithin appears to be sufficient and that lecithin may not be necessary for juvenile red claw diets.

1 inch margin (2.54 cm)

1 inch margin (2.54 cm)

1 inch margin (2.54 cm)

8.5 inches wide (21.6 cm)

11 inches long (27.94 cm)

SAMPLE

TABLE 1. Formulation of experimental diets fed to red claw crayfish.

	Diet			
	1	2	3	4
Menhaden FM	25.0	25.0	25.0	25.0
Soybean Meal	35.0	35.0	35.0	44.5
Lecithin 0.5	0.0	0.5	0.0	
Cholesterol	1.0	1.0	0.0	0.0
Other	38.5	39.0	39.5	30.5

TABLE 2. Final weight, percentage weight gain, specific growth rate (SGR), and percentage survival of red claw crayfish fed four practical diets. Means in a column with different letters were significantly different ($P < 0.05$).

	Diet			
	1	2	3	4
Final weight (g)	6.97a	6.00a	3.64b	5.11a
Weight gain (%)	3384a	2897a	1717b	2454a
SGR (%/day)	5.74a	5.66a	4.68b	5.41a
Survival (%)	76.0	64.0	56.0	80.0

PLEASE SUBMIT YOUR ABSTRACT ONLINE

**Submit your abstract via the internet at the meeting website.
Follow the complete instructions on the website for online submission.**

www.was.org

**If you are unable to submit your abstract online, contact the Conference Manager
for alternative methods at:**

worldaqua@aol.com or Fax: +1-760-751-5003



ATTENDEE REGISTRATION FORM

Aquaculture America 2012

February 29 - March 2, 2012 – Las Vegas, Nevada

Return address for payments in USD:
 AQUACULTURE AMERICA 2012
 Conference Manager
 P.O. Box 2302
 Valley Center, CA 92082 USA
 Tel: +1 760 751 5005
 Fax: +1 760 751 5003
 Email: worldaqua@aol.com

Online registration is preferred at www.was.org OR fax or mail both sides with payment. Use one form per person.

PLEASE PRINT CLEARLY OR TYPE ALL REQUESTED INFORMATION	
BADGE INFORMATION: (As you want your name badge to read – No titles, please)	
First Name _____	SURNAME (FAMILY NAME) _____
Company or Institution _____ <small>(Limited to 40 Letters & Spaces)</small>	
City _____	State/Prov _____ Country _____

MAILING INFORMATION: Email _____
(please include email address)

Postal Address _____

City _____ State / Prov _____ Postal Code _____ Country _____

Phone _____ Fax _____ Title: (circle one) Dr. Mr. Ms. Mrs.
(Include country and city code) (Include country and city code)

REGISTRATION FEES: In order to receive the discount rates as listed below, this form and payment must be received by the date listed. See brochure for what is included in registration fees.

TYPE OF REGISTRATION	Register by January 14, 2012	Register by January 28, 2012	Register after January 28, 2012	
FULL CONFERENCE & TRADE SHOW <small>In order to receive the Pre-Registration discount rate, this form and payment must be received by the date above</small>				* To qualify for Member Rate you <u>must</u> complete the Association Memberships section on the reverse side. ● ● ● ● ● ● ● ● Trade Show is <u>included</u> in the Full Conference Registration Rate. TOTAL REGISTRATION FEE US\$ _____
ASSOCIATION MEMBER RATE*	<input type="checkbox"/> US\$ 395	<input type="checkbox"/> US\$ 555	<input type="checkbox"/> US\$ 655	
STUDENT MEMBER RATE* <small>Include copy of Student I.D.</small>	<input type="checkbox"/> US\$ 195	<input type="checkbox"/> US\$ 195	<input type="checkbox"/> US\$ 265	
Non-Member Rate	<input type="checkbox"/> US\$ 530	<input type="checkbox"/> US\$ 660	<input type="checkbox"/> US\$ 755	
Student Non-Member Rate <small>Include copy of Student I.D. You can join WAS on the reverse side and use the Member Rate.</small>	<input type="checkbox"/> US\$ 275	<input type="checkbox"/> US\$ 275	<input type="checkbox"/> US\$ 325	
<input type="checkbox"/> Spouse Rate Name _____	<input type="checkbox"/> US\$ 315	<input type="checkbox"/> US\$ 375	<input type="checkbox"/> US\$ 425	
TRADE SHOW PASS <small>Good for 3 days admission to exhibits only – February 29, March 1, 2</small>			<small>(Trade show pass is included with the Full Conference Registration)</small>	
			<input type="checkbox"/> US\$ 50	TOTAL TRADE SHOW PASS US\$ _____
PROFESSIONAL DEVELOPMENT/CONTINUING EDUCATION WORKSHOP <small>Students \$100 USAS/AFS members \$150 Non-members \$250</small>				TOTAL WORKSHOP US\$ _____
MEMBERSHIP DUES – Enter amount from Membership Application on other side if applicable.				TOTAL MEMBERSHIP DUES US\$ _____
Do not mail registration after Feb. 10, 2012 or fax after Feb. 25. After Feb 15, bring this form with you to register at the show.			TOTAL AMOUNT US\$ _____	

Registration Confirmation and Receipt will be emailed after processing.

CANCELLATION POLICY: Cancellation of registration must be received - in writing - no later than January 28, 2012. Refunds for registration fees will be subject to a 20% handling fee. Refunds are processed after the conference. No refund will be made for cancellations received after January 28, 2012 or for "no shows". After January 28, 2012, no refunds will be made for professional or personal emergencies, flight cancellations, denied visa, weather related cancellation or other travel emergencies. Fees for memberships are non-refundable.

PAYMENT METHOD: All fees must be paid to the order of **AQUACULTURE AMERICA 2012**. For bank transfer details, contact us.

Check # _____ Visa Mastercard American Express Discover Diners Club
 Card # _____ Expiration Date _____
 Name on Card _____ Date _____ Signature _____
 Credit Card Billing Address _____

REGISTRATION FORM - SIDE 2

Name _____

ASSOCIATION MEMBERSHIPS: Please check all boxes for associations for which you are a current member. Membership in any of those associations qualifies you for the Member Rate* on the Registration Fees. You can join an association at any time before registering to qualify for the Member Rate.

- | | |
|---|--|
| <input type="checkbox"/> American Tilapia Association
<input type="checkbox"/> American Veterinary Medical Association
<input type="checkbox"/> AQUABIO
<input type="checkbox"/> Aquaculture Association of Canada
<input type="checkbox"/> Aquacultural Engineering Society
<input type="checkbox"/> Aquaculture Association of Canada
<input type="checkbox"/> Aquaculture Without Frontiers
<input type="checkbox"/> Asian Fisheries Society
<input type="checkbox"/> Asian-Pacific Chapter WAS
<input type="checkbox"/> Catfish Farmers of America
<input type="checkbox"/> China Society of Fisheries
<input type="checkbox"/> Egyptian Aquaculture Society
<input type="checkbox"/> European Aquaculture Society
<input type="checkbox"/> Fish Culture Section - AFS
<input type="checkbox"/> Global Aquaculture Alliance
<input type="checkbox"/> Indonesian Aquaculture Society
<input type="checkbox"/> International Assn of Aquaculture Economics and Mgmt
<input type="checkbox"/> IAFI – The Intn'l Assn of Seafood Professionals | <input type="checkbox"/> Korean Aquaculture Society
<input type="checkbox"/> Korea Chapter, WAS
<input type="checkbox"/> Latin American & Caribbean Chapter WAS
<input type="checkbox"/> Malaysian Fisheries Society
<input type="checkbox"/> National Aquaculture Association
<input type="checkbox"/> National Aquaculture Council of Australia
<input type="checkbox"/> National Association of State Aquaculture Coordinators
<input type="checkbox"/> Sociedad Brasileira de Acuicultura
<input type="checkbox"/> Society of Aquaculture Professionals
<input type="checkbox"/> Spanish Aquaculture Association
<input type="checkbox"/> Sociedad Brasileira de Acuicultura
<input type="checkbox"/> Striped Bass Growers Association
<input type="checkbox"/> US Marine Shrimp Association
<input type="checkbox"/> US Chapter of WAS (USAS)
<input type="checkbox"/> US Trout Farmers Association
<input type="checkbox"/> World Aquaculture Society (WAS)
<input type="checkbox"/> Zebrafish Husbandry Association |
|---|--|

MEMBERSHIP APPLICATIONS NEW APPLICATION RENEWAL

NATIONAL AQUACULTURE ASSOCIATION (NAA)

For details on the different types of memberships and options, please contact the NAA home office at:

Tel: +1-304-728-2167 Fax: +1-304-728-2196 Email: naa@frontiernet.net

Individual Memberships: Individuals, growers, partnerships and corporations who engage in the practice of and who derive a portion of their income from aquaculture. Individual members nominate and elect four board members for three-year terms.

_____ Individual: \$250	_____ Silver: \$1,000 to \$2,499
_____ Gold: \$2,500 to \$4,999	_____ Platinum: \$5,000 and above

For membership information on State Associations and Species Associations, call for details.
 Web: www.nationalaquaculture.org

Total Amount for NAA Membership USD _____

Fees for memberships are non-refundable.

Please enter this amount under "Membership Dues" section on opposite side of this form.

WORLD AQUACULTURE SOCIETY (WAS) APPLICATION www.was.org

For details on the different types of memberships and options, please contact the WAS home office at

Tel: +1-225-578-3137 Fax: +1-225-578-3493 Email: judya@was.org

MEMBERSHIP CATEGORY: (Indicate only one)

- Individual** (Electronic JWAS) (USD 65/yr) Applies to an individual only
- Individual** (Printed JWAS) (USD 85/yr) Applies to an individual only
- Student** (Electronic JWAS) (USD 45/yr) (Copy of Student ID or Signature of Professor required)
- Student** (Printed JWAS) (USD 65/yr) (Copy of Student ID or Signature of Professor required)
- Sustaining** (Electronic JWAS) (USD 105/yr) Applies to any one individual from a company
- Sustaining** (Printed JWAS) (USD 125/yr) Applies to any one individual from a company
- Corporate** (Electronic JWAS) (USD 255/yr) Allows all employees of one company to attend meeting at Member Rate
- Corporate** (Printed JWAS) (USD 275/yr) Allows all employees of one company to attend meeting at Member Rate
- Lifetime** (Electronic JWAS only) (USD 1100/yr) Applies to an individual only
- E membership** (USD 10/yr) Full access to the WAS website and Member's Area.
 Chapter membership not included. No member discount on conferences.
 Printed publications not included. Cannot have been a regular member in the last five years.

CHAPTER OPTIONS:

- (Must have active membership in one of the categories at left)*
 Please mark the Chapter you choose that is included in your dues above. You can join more chapters by adding USD 5 per extra chapter. If you mark none, you can deduct USD 5.
- Asian Pacific** (USD 5)
 - Japan** (USD 5)
 - Korea** (USD 5)
 - Latin American/Caribbean** (USD 5)
 - United States (USAS)** (USD 5)
 - None**

Total Amount for WAS Membership USD _____

Fees for memberships are non-refundable.

Please enter this amount under "Membership Dues" section on opposite side of this form.

**For membership in other associations, please contact them directly.
 If you need a phone number, contact the Conference Manager (+1-760-751-5005).**

MANY OPPORTUNITIES FOR FARM TOURS

The Next Generation of Statistics in Aquaculture - Mixed Models and Generalized Linear Mixed Models (GLMM): A workshop using SAS® PROC GLIMMIX with real data examples.

February 28, 2012

8:00am - 5:00pm

Instructor: Dr. Walter Stroup, Department of Statistics, University of Nebraska, Lincoln, NE.

Workshop Description: The statistical tools available in the agricultural and natural resource sciences have progressed from basic t-tests to ANOVA to Mixed Models and now Generalized Linear Mixed Models. Generalized and Mixed Model applications are now available in a myriad of statistical software packages, SAS Proc GLIMMIX being the most flexible and widely applicable. This workshop will serve as an introduction to mixed models, focusing on their application in aquaculture. Topics for discussion in the workshop will be: Review and definition of fixed, random, and mixed models; how mixed model analysis builds upon and how it differs from previous generations of statistical analysis (why do mixed models matter?); statistical models for common applications including split-plot experiments and designs with repeated measures; how statistical analysis differs for normal and non-normal distribution of responses; and mixed model concepts of power, precision, and sample size essential for planning experiments. All topics will be discussed using real data examples from aquaculture and related disciplines. While mixed models may be implemented with numerous software packages, this workshop will focus on the GLIMMIX procedure in the SAS software suite. The workshop is lecture-based so laptop computers are not necessary for attendance. Prior to the workshop, participants will be provided a packet of workshop materials used during the course that will include lecture materials and applicable data and code.

Cost: \$100 Students \$150 USAS/AFS members
\$250 Non-members

TRAVEL

Special car rental fares have been arranged with AVIS. you can make reservations at 800-331-1600 or +1-918-624-4338 and mention the special discount code #J770126.

Special airfares are available. For the best airfares, contact: Flight Coordinators for details at:
Tel: 1-800-544-3644 or +1-310-581-5600
Fax: +1-310-581-5620 Email: globaltc@gte.net

HOTELS

We have arranged for a fantastic rate at the Paris Las Vegas for Aquaculture America 2012! Be sure to mention Aquaculture America 2012 to get the very special rate of \$149-169. Contact the hotel directly for your reservation:

Tel: 1-800-634-3434 use Special Code SPAQU2

Web:
<http://www.harrahs.com/CheckGroupAvailability.do?propCode=PLV&groupCode=SPAQU2>

Stay in touch with the program
developments for
**AQUACULTURE
AMERICA 2012**
www.was.org



TENTATIVE SCHEDULE

Tuesday, February 28

Registration Open	11:00am - 5:30pm
Exhibitor Move-in	11:00am - 6:00pm
Poster Set-up	1:00pm - 5:30pm

Wednesday, February 29

Registration Open	7:30am - 5:00pm
Plenary Session	8:30am - 10:00am
Exhibitor Move-in	8:00am - 10:00am
Poster Set-up	8:00am - 10:00am
Refreshment Break	10:00am - 11:00am
Trade Show & Posters Open	10:00am - 6:00pm
Sessions	11:00am - 12:30pm
Lunch (On your own)	12:30pm - 1:30pm
Sessions	1:30pm - 3:00pm
Refreshment Break	3:00pm - 3:30pm
Sessions	3:30pm - 5:00pm
Happy Hour	5:00pm - 6:00pm
Presidents Reception	6:00pm - 9:00pm

Thursday, March 1

Registration Open	8:00am - 5:00pm
Sessions	8:30am - 10:00pm
Refreshment Break	10:00am - 10:30am
Sessions	10:30pm - 12:30pm
Trade Show	10:00am - 6:00pm
Lunch (On your own)	12:30pm - 1:30pm
Sessions	1:30pm - 4:30pm
Poster Session	4:30pm - 6:00pm
Happy Hour	4:30pm - 6:00pm
NAA Auction	6:00pm - 8:00pm
Student Reception	7:00pm - 9:00pm

Friday, March 2

Registration Open	8:00am - 3:00pm
Sessions	8:30am - 10:00am
Trade Show	10:00am - 4:00pm
Refreshment Break	10:00am - 11:00am
Sessions	11:00am - 12:30am
Lunch (On your own)	12:30pm - 1:30pm
Sessions	1:30pm - 3:00pm
Refreshment Break	3:00pm - 3:30pm
Exhibitor Move-out	3:30pm - 7:00pm
Sessions	3:30pm - 5:30pm
Closing Happy Hour	5:30pm - 6:30pm

