U.S. Fish & Wildlife Service

The Aquatic Animal Drug Approval Partnership Program

"Working with our partners to conserve, protect and enhance the Nation's fishery resources by coordinating activities to obtain U.S. Food and Drug Administration approval for drugs, chemicals and therapeutants needed in aquaculture"

AADAP Aquatic Animal Drug Approval Partnership Program

Volume 1 - 2

AADAP NEWSLETTER

February 2005

WHAT'S SHAKIN'

Quarterly INAD Investigator Award: A tip-of-the-hat and a pat-on-the-back to John Thoesen (USFWS - Pinetop Fish Health Center) and Paul Curtis (Hubbs-Seaworld Research Institute) for their continuing involvement in efficacy studies and timely submissions of detailed data forms and reports.

Aquaflor® (florfenicol) pivotal efficacy study: A field efficacy trial was conducted in July 2004 to evaluate florfenicol medicated feed to control mortality of fall chinook salmon *Oncorhynchus tshawytscha* caused by furunculosis (10 mg florfenicol/kg fish/day for 10 days effectively controlled mortalities). A Final Study Report (abstract available at: http://fisheries.fws.gov/aadap/2_05Files/pivotal_04_Makah.pdf) was submitted to FDA's Center for Veterinary Medicine. If accepted as pivotal, the initial label claim for florfenicol will be for the control of mortalities in all freshwater-reared salmonids caused by bacterial coldwater disease and furunculosis.

> **Heads up!:** Only one more pivotal efficacy study is required on a salmonid species (other than steelhead trout) to add (once accepted by CVM) the following claim to the label: "Control mortality in all freshwater-reared salmonids caused by columnaris."

We need your help: Cooperators are needed to help us conduct pivotal efficacy studies on coolwater fish species for florfenicol (any fish species diagnosed with columnaris), oxytetracycline (any fish species diagnosed with columnaris), and chloramine-T (any fish species other than walleye diagnosed with external columnaris or BGD). If we can conduct studies at your facilities, please give us a call.

AQUI-S® efficacy work nearing completion: We are almost finished with AQUI-S® pivotal and supportive studies to complete the efficacy technical section for all freshwater-reared fish. To do so, CVM's Aquaculture Team requires acceptance of 2-3 pivotal studies and 3-6 supportive studies on representative cold, cool, and warmwater fish species. Refer to http://fisheries.fws.gov/aadap/studiesAquis.htm for further information on the status of AQUI-S® efficacy studies.

AQUI-S® target animal safety: CVM has accepted our research study protocol entitled "The Safety of AQUI-S® as an Anesthetic on Rainbow Trout." Completion and acceptance of this study should satisfy the target animal safety technical section for all freshwater-reared salmonids. The first study, scheduled for March 2005, will evaluate whether 40 mg/L AQUI-S® meets the safety criteria as the highest proposed dose (note: pilot testing has indicated that it will).

AQUI-S® field use: We've gained experience using AQUI-S® to anesthetize a variety of fish species under a variety of environmental conditions. If you're interested in experimenting with AQUI-S®, or need advice about using AQUI-S® as a fish anesthetic, please contact us.

New oxytetracycline approval for skeletal marking: On 15 September 2004, Phoenix Scientific, Inc. received an approval for their Oxytetracycline HCl Soluble Powder-343 for skeletal marking in finfish fry and fingerlings. Their product can be legally purchased over the counter, and regardless of whether the label includes fish it can be legally used for skeletal marking in finfish. For the names of distributors in your region, or any other information regarding this product, contact Phoenix Scientific at 1-800-759-3664.

EPA aquaculture effluents compliance guidelines: EPA recently circulated a draft guidance document to help aquaculture producers and NPDES permit writers comply with EPA's recently finalized Aquaculture Effluent Limitations Guidelines Rule. EPA will consider stakeholder input via a series of public meetings. The upcoming meetings are as follows: 10 March, Warwick, RI; 22 March, Seattle, WA; 13 April, Fletcher, NC and 22 April, Las Vegas, NV. For details see http://epa.gov/guide/aquaculture/workshops.htm.

JSA's revised "Guide to Drug, Vaccine, and Pesticide Use in Aquaculture:" The Federal Joint Subcommittee on Aquaculture announced the availability of the revised edition of the popular publication, "Guide to Drug, Vaccine, and Pesticide Use in Aquaculture." The "Guide" provides a complete listing of federally approved/registered drugs, vaccines and pesticides, as well as revised legislation and compliance policies. Additionally, it offers more complete information through direct links to important web sites, including product labels for many pesticides and updated information on federal agency web pages. To access the revised publication, visit: http://aquanic.org/jsa/wgqaap/drugguide/drugguide.htm.

SLICE® INAD: If you are interested in using SLICE® (emamectin benzoate; Schering- Plough Animal Health) to control freshwater parasitic copepods (e.g.,*Salmincola* sp.) please contact us to discuss the possibility of AADAP pursuing the development of an INAD for SLICE®.

SE-MARK® INAD: If you are interested in mass-marking larval fish via immersion to produce a fluorescent mark detectable non-lethally, SE-MARK® (calcein) may provide you with a useful management tool. For more information, please contact Western Chemical (phone 800-283-5292).

SE-MARK® feed studies to be conducted: Two USFWS Fish Technology Centers (Bozeman & Lamar) and the USGS Research Lab at Wellsboro, PA have just received funding to investigate the feasibility of SE-MARK® being administered via feed. Studies will begin in 2005 and will investigate its potential use on a variety of fish species.

FEATURE ARTICLE

The aquatic animal drug approval "consortium": who's been doing what? In the last edition of our Newsletter, we provided insight into the aquatic animal drug approval process

(in particular INADs and NADAs from the process perspective). Although CVM is the same regulatory agency for major terrestrial and aquatic species, and only a pharmaceutical manufacturer/sponsor can submit an NADA for either, there is a significant difference in who generates data for technical sections. In the case of traditional major terrestrial species (i.e., cattle, swine, chickens, horses, dogs and cats), the overwhelming majority of data are generated by the pharmaceutical sponsors. In contrast, data for aquatic animal approvals are usually generated by a "consortium" of federal, state, tribal and private entities.

The following is a list of those involved in the aquatic animal drug approval process, as well as their associated activities. Several identified entities comprise their own list. As an example, the AADAP INAD Program participants comprise more than 150 federal, state, tribal and private units.

We regret if we have inadvertently failed to include any group or entity on this list or an entity's activities; the list should not be considered inclusive, but instead representative.

The Aquatic Animal Drug Approval "Consortium"	
Participant	**Major activities/drugs**
American Veterinary Medical Association	co-principal[1] of the MUMS coalition; facilitator, liaison and supporter with agencies, industry and the veterinary profession
aquaculture producer organizations	co-principal[1] of the MUMS coalition, lobbyists, judicious antibiotic-use publication, INAD sponsors
aquaculture support industries	co-principal[1] of the MUMS coalition, lobbyists
Auburn University	effectiveness studies and environmental assessment for 17-α methyltestosterone
Center for Veterinary Medicine – Office of Surveillance and Compliance	develop import tolerance regulations, low regulatory priority drug list, guidance to CFSAN on priority testing of imported and domestic seafood for drug residues, CVM's Compliance Policy Guidelines
Center for Veterinary Medicine – Office of New Animal Drug Evaluation	review of all technical sections of NADAs, granting and administration of INADs, technical guidance on INAD/NADA process
Center for Veterinary Medicine – Office of Research	lab research on pivotal efficacy studies, species-grouping, drug pharmacokinetics, drug residues, development of antimicrobial resistance, and antimicrobial sensitivity testing methods; formalin, erythromycin
International Association of Fish & Wildlife Agencies – Drug Approval Working Group (DAWG)	funding of drug research via national federal-state cooperative program (1995-2002) and numerous "National Conservation Need" grants, oversee/guide national activities through their DAWG
Joint Subcommittee on Aquaculture – Working Group on Quality Assurance in Aquaculture Production	national federal interagency coordination/education forum among government, academic and industry on drugs, biologics, and pesticides; developed reference publications and quality assurance programs, created National Coordinator for Aquaculture NADAs position, initiated National Aquaculture Drug Research Forum
Minor Use and Minor Species (MUMS) Coalition	successfully obtained Congressional support for the "Minor Use and Minor Species Animal Health Act of 2004"
Mississippi State University	pivotal efficacy and TAS, florfenicol
National Coordinator for Aquaculture New Animal Drug Applications; Roz Schnick	coordinates NADAs and INADs for all aquaculture drugs, liaison to CVM, provides regulatory assistance to drug sponsors, develops matrices for all data requirements, writes status reports, seeks funding for research
participants in AADAP's INADs	provide facilities and staff for the active conduct and participation in pivotal and supportive efficacy studies
pharmaceutical companies	active direct conduct of studies for all technical sections of NADAs, assembly of technical sections and NADAs, funding of studies for technical sections
private aquaculture companies	INAD sponsors, conduct of supportive and pivotal efficacy studies
Southern Illinois University	pivotal TAS studies for crude carp pituitary and 17-α methyltestosterone
State Resource Agencies	INAD sponsors, conduct of supportive and pivotal efficacy studies
Tribal or Inter-Tribal Resource Agencies	conduct of supportive and pivotal efficacy studies
U.S. Department of Agriculture – Harry K. Dupree National Aquaculture Research Center; Stuttgart, Arkansas	efficacy, TAS and environmental assessment studies; copper sulfate, potassium permanganate, florfenicol
U.S. Fish & Wildlife Service – Aquatic Animal Drug Approval Partnership Program; Bozeman, Montana	INAD management, NADA coordination, pivotal target animal safety (GLP laboratory) and efficacy studies, information dissemination, annual drug approval workshop; chloramine-T, OTC, florfenicol, 17-α methyltestosterone, AQUI-S®, calcein, etc.
U.S. Geological Survey – Upper Midwest Environmental Sciences Center; LaCrosse, Wisconsin	residue chemistry studies, pivotal target animal safety (GLP laboratory) and efficacy studies, environmental assessments; Chloramine-T, formalin, OTC, florfenicol, H_2O_2
U.S.D.A. – National Research Support Project #7	funding and conduct of efficacy, TAS and residue depletion studies; species-grouping; OTC, Romet, florfenicol, H_2O_2
U.S.D.A. – Regional Aquaculture Centers	funding of efficacy, TAS, human food safety studies and analytical methods development; 17-α methyltestosterone, AQUI-S®, OTC, florfenicol, chloramine-T, hydrogen peroxide, National NADA Coordinator funding
University of Arizona	efficacy, TAS, residue depletion and environmental assessment studies; OTC for shrimp
University of Idaho	efficacy, TAS and environmental safety studies; erythromycin
University of Wisconsin -Madison	feed stability, analytical methods development, biodegradation studies; 17-α methyltestosterone
Western Regional INAD Project	INAD management, supportive efficacy studies; multiple drugs

Footnotes: **1.** Co-principals included American Veterinary Medical Association, the National Aquaculture Association and the American Pet Products Manufacturers Association.

Article Upshot: obviously the aquatic animal drug approval consortium is a HUGE collaborative effort !!!

INAD INFORMATION & STATUS

The USFWS currently holds 15 INADs that can be used for a variety of fish culture and fisheries management issues. Often,

there are a number of INAD or approved drugs that can be used for effective treatment. For some pathogens there may be several optional therapies. Potential therapies include:

- treatment to control mortality in fish caused by systemic bacterial infections or external infections or infestations of bacteria or parasites,
- treatment to mark bony fish structures,
- treatment to anesthetize fish,
- treatment to induce gamete maturation, or
- treatment to induce sex reversal.

If treatments are to control mortality caused by a suspected fish pathogen, make sure that the diagnosis is presumptive or confirmatory. In the case of systemic bacterial pathogens, antibiotic sensitivity testing to determine which antibiotic to use is strongly recommended. Additionally, when using antibiotics the CVM and the American Veterinarian Medical Association's judicious use of antibiotics guidelines should be considered (http://fisheries.fws.gov/aadap/guidancedocs.html).

The following table provides a list of disease/use indications and INAD or approved drugs that should be considered.

But first, a few words of caution:

- test a subset of fish to be treated to ensure selected treatment regimen is safe to test fish, and
- check to make sure that calculations for dose are determined using percentage of active ingredient (note: some compounds are considered to be "100% active" ingredient even though the actual active ingredient is less, e.g., 100% formalin is actually a saturated solution of 37% formaldehyde gas in water).

Drug-Use Considerations

Disease or Use Consideration	INAD or Approved Drug to Consider
Bacterial Coldwater Disease	florfenicol, Romet or oxytetracycline (OTC) medicated feed or OTC immersion therapy
Columnaris	florfenicol, Romet or OTC medicated feed; OTC injectable (adults only); or OTC immersion therapy
Furunculosis	florfenicol, Romet or OTC medicated feed; OTC injectable (adults only); or OTC immersion therapy
Other Gram-negative pathogens[1]	florfenicol, Romet or OTC medicated feed or OTC immersion therapy
Bacterial Gill Disease	chloramine-T, Diquat, potassium permanganate ($KMnO_4$), hydrogen peroxide (H_2O_2), and OTC immersion therapy
External Cold Water Disease or Columnaris	chloramine-T, Diquat, $KMnO_4$, H_2O_2, and OTC immersion therapy
External parasites	formalin, $KMnO_4$, H_2O_2, and copper sulfate ($CuSO_4$)
Saprolegnia	formalin, $KMnO_4$, H_2O_2, and $CuSO_4$
Marking skeletal tissue	calcein, Pfizer's OTC-343, OxyMarine™, and Phoenix's OTC-343
Spawning hormones	human Choriogonadotropin (hCG), crude carp pituitary (CCP), luteinizing hormone releasing hormone analog ($LHRH_a$)
Anesthetics	AQUI-S®, Finquel®, Tricaine-S™
Sex reversal (tilapia only)	17-α methyltestosterone

Footnotes: **1.** e.g., pathogens that cause enteric septicemia, vibriosis, aeromonas disease, and enteric redmouth disease.

FEATURED INAD DRUG

AQUI-S®: The following is a brief status report on approval activities for the use of AQUI-S® as a potential zero-withdrawal fish anesthetic. As we have all been long aware, fisheries biologists have a critical need for a FDA-approved fish anesthetic for which no withdrawal period is required.

AQUI-S, New Zealand Ltd. (ANZL; Lower Hutt, New Zealand) has been working actively for the past 8-plus years to gain FDA approval for the use of AQUI-S® as a zero-withdrawal fish anesthetic. AQUI-S® was developed as a fish anesthetic by the New Zealand Institute of Crop Research, and at present, is approved as a food safe, zero-withdrawal anesthetic in New Zealand, Australia, and Chile to calm commercially-reared fish before harvest. This process, termed "rested harvesting," reduces pre-harvest exercise, thereby improving the quality of edible fish tissue. The two ingredients comprising AQUI-S®, including the active ingredient isoeugenol, are both classified as generally regarded as safe (GRAS) by the FDA (see AADAP website for GRAS definition; http://fisheries.fws.gov/aadap/gras.html), which bodes well for the success of ongoing FDA-approval efforts.

Although approval efforts in the U.S. include the generation of data to support a label claim for rested harvesting, current project focus is geared towards developing data to support a label claim for use in fish management and husbandry practices such as stock assessment, spawning, marking, tagging, etc. Furthermore, although the ultimate goal is to obtain an approved anesthetic for use in all freshwater and marine species, initial efforts are focusing on all freshwater-reared salmonids. In this respect, Tom Goodrich, U.S. representative for ANZL, has indicated that progress is being made on all fronts. ANZL is responsible for completing the Product Chemistry, Environmental Safety, and Mammalian Toxicology Technical Sections.

ANZL studies currently in progress include:

- development of analytical methods for product chemistry,
- ecotoxicology and physiochemistry studies to address Environmental Safety issues and
- a 2-yr toxicology study being conducted by the National Toxicology Program.

ANZL studies completed to date include:

- development of an analytical method to verify AQUI-S® doses in water in support of efficacy and target animal safety studies,
- an efficacy and target animal safety (TAS) study on Atlantic salmon, and
- a 90-d toxicology study (note: preliminary results from this study showed no indication of carcinogenicity).

Researchers at the USGS Upper Midwest Environmental Sciences Center (UMESC; LaCrosse, WI) have completed a "cold" residue depletion study on rainbow trout exposed to a combination of one of two doses of AQUI-S® at one of three different water temperatures. UMESC researchers have also started a "hot" residue depletion study on rainbow trout using radio-labeled AQUI-S® and plan to submit results from this study to CVM by April 2005. Residue depletion studies for representative cool and warmwater fishes remain to be done, but will not require radio-labeled AQUI-S®.

AADAP researchers will soon complete the efficacy technical section for all freshwater fish. Pivotal field efficacy studies

have been completed on rainbow trout, largemouth bass, smallmouth bass, walleye, tilapia, channel catfish, and hybrid striped bass. Two or three additional efficacy studies are scheduled for the coming months, and results from these studies will be submitted to CVM by the end of 2005. In addition, AADAP researchers will start a TAS study in March 2005, in which rainbow trout fingerlings (average length 3.8 cm) will be exposed to 20, 40 and 80 mg/L AQUI-S® for various durations at 15°C. Results from this study will also be submitted to CVM by the end of 2005. TAS studies on representative cool and warmwater fishes are tentatively scheduled by AADAP staff for 2006, but actual initiation/completion dates of these studies will be dependent upon available funding. However, these studies will be able to be completed under the CVM-approved rainbow trout protocol, hence, this work should be straightforward and relatively easy to complete.

Various life-stages of rainbow trout anesthetized with AQUI-S®

ANZL is hopeful that all pieces of the puzzle will be in place to apply for a new animal drug approval for AQUI-S® use on all freshwater salmonids in the next 2-3 years. For details see AADAP's website (http://fisheries.fws.gov/aadap/aquis.htm and http://fisheries.fws.gov/aadap/studiesAquis.htm).

FINS & TAILS, BITS & BOBBERS

The intent of this section is to provide readers with INAD informational tidbits of a less detailed nature than those found in the previous "INAD Information & Status" section. Hopefully, this information will assist INAD co-investigators in the effective and efficient use of investigational drugs.

- **INAD paperwork timeline:** Participants in AADAP's INADs must complete several forms prior to and following INAD drug use. The following is the list of forms that need to be completed and sent to the AADAP Office (the florfenicol INAD is used as an example, thus the abbreviation "FFC" is used in the Form Numbers below). The list (and the associated timelines) is provided in the order in which forms are to be completed and sent to AADAP.
  - **Form FFC-W: Worksheet for Designing Individual Field Trials** - Send in before a trial is conducted or at least once per month if more than one lot of fish is being treated in a 1-month period.
  - **Form FFC-1: Report on Receipt of Drug** - Send in within 10 days of receipt of drug.
  - **Form FFC-2: Drug Inventory Form** - Send in with the corresponding Form FFC-3 (if no further treatments are necessary) or at the end of the calendar year.
  - **Form FFC-3: Results Report Form** - Send in after treatment has occurred and data have been collected to document drug use, efficacy and disposition of the fish (usually within 10 days of completing the post-treatment period).
  - **Addendum 2: Discharge Worksheet** - Send in with corresponding Form FFC-3.
- **No discharge of marking solution will be allowed under INAD 10-987.** Although calcein (SE-MARK®) solution is a non-hazardous, non-Resource Conservation and Recovery Act (RCRA) regulated liquid, it does require solidification and disposal in a landfill or incineration. All SE-MARK® solution remaining in static baths following completion of treatment should be collected in a secure, leak-proof container that clearly identifies container contents, responsible party and date. Based on the non-hazardous, non-regulated status of SE-MARK® solution, these containers may be retained on-station for a period of time before disposal. However, all SE-MARK® solution must ultimately be disposed of by shipment to Emerald Services, Inc., 1825 Alexander Avenue, Tacoma, WA 98451 (phone: 206-832-3083; fax: 206-832-3183; email: emeraldnw.com) according to procedures detailed in general Waste-stream Profile #216200B. Procedures and forms for Waste-stream Profile #216200B, and other disposal details can be provided by Emerald Services, Inc.

PARTNERS' CORNER

Kent SeaTech Corporation: ***"The Private Aquaculture Sector Must Get Involved in Drug Approvals."*** Aquaculture is the fastest growing sector of the U.S. agriculture industry. Infectious disease continues to impede the growth and expansion of aquaculture in the U.S. Continued growth of the industry requires the approval of safe and effective therapeutants. Obtaining new approved drugs is a costly and time-consuming process, but it is necessary to ensure a safe, consistent, high quality seafood supply. The private aquaculture sector can, and must, become involved in this endeavor.

Many private aquaculture facilities probably feel that they are too small to even be considered as an ideal participant in the drug approval process. This is simply not true. Regardless of your facility's size, the species of fish that you rear, or the type of disease that infects your fish, chances are your facility would be well suited for conducting drug efficacy trials. As an example, even though Kent SeaTech Corporation (the largest producer of farm-raised hybrid striped bass in the U.S., producing 3.5 million pounds of fish annually) must maintain production as its primary objective, the health of our fish is paramount. Our intensive recirculating system inherently exacerbates many bacterial and parasitic diseases, for most of which there are no approved drugs available. Our situation has heightened our appreciation of the approved aquaculture drug void. We believe we have an obligation to our company, our customers and our industry to be involved in drug approval activities.

Photo courtesy of Kent SeaTech

For the past 4 years, Kent SeaTech has collaborated with the AADAP program by actively participating in pivotal field efficacy studies on florfenicol to control mortality in hybrid striped bass infected with *Streptococcus iniae*. Currently there is no

FDA-approved drug for the treatment of diseases caused by *S. iniae* in any fish species. By assisting AADAP researchers in their pivotal field efficacy studies, we help support this aspect of the drug approval process. The final approval of an effective drug to control mortality caused by *S. iniae* is not only a win-win situation for hybrid striped bass producers in the U.S, but also could help treat existing and other emerging diseases of warmwater food fish.

The success of this and any other drug approval endeavor will require concerted and coordinated efforts from all sectors of U.S. aquaculture. Contact the AADAP program coordinator to see how you can help in the drug approval process. *Dr. Vaughn E. Ostland; Director of Aquatic Pathology; Kent SeaTech Corp.; Mecca, CA 92254.*

MEETINGS, ETC.

Upcoming meetings

World Aquaculture 2005; 9-13 May 2005; Bali, Indonesia: The annual World Aquaculture Conference is being held at the Bali International Convention Center, Nusa Dua, Bali, Indonesia. For more information contact the Conference Manager, 2423 Fallbrook Place, Escondido, CA 92027, phone 760-432-4270, fax 760-432-4275.

National Association of State Aquaculture Coordinators; 31 May through 3 June 2005; Long Branch, New Jersey: Further information can be obtained by contacting NASAC c/o Maryland Department of Agriculture, 50 Harry S. Truman Parkway, Annapolis, MD 21401, phone 410-841-5724, fax 410-841-5970.

East Coast Trout Management and Culture Workshop IV; 6-8 June 2005; Lock Haven, Pennsylvania: The Southern Division AFS Trout Committee is sponsoring the 4th East Coast Trout Management and Culture Workshop to be held at Lock Haven University, Pennsylvania. The workshop agenda, registration form and additional meeting information can be downloaded from the Southern Division's website (www.sdafs.org/trout). Abstracts are due by 11 March 2005.

Eastern Fish Health Workshop; 13-17 June 2005; Shepherdstown, West Virginia: The 30th Annual Eastern Fish Health Workshop will be hosted this year by the USGS National Fish Health Research Laboratory (Leetown, WV). The workshop will be held 13-17 June at the Clarion Hotel and Conference Center in Shepherdstown, West Virginia. Abstracts are due by 1 May 2005. For details see http://fisheries.fws.gov/aadap/2_05Files/30th%20Annual%20Eastern%20Fish%20Health%20Workshop%20announcement.pdf. For more information contact Dr. Rocco Cipriano at: phone 304-724-4432; fax 304-724-4435 or rocco_cipriano@usgs.gov.

Western Fish Disease Workshop; 28-29 June 2005; Boise, Idaho: The annual Western Fish Disease Workshop is being held at the Doubletree Riverside in Boise, Idaho. On Monday 27 June, the American Fisheries Society – Fish Health Section will be conducting a continuing education session. The workshop is being sponsored by the Idaho Department of Fish & Game, the University of Idaho and Clear Springs Foods. Details will be forthcoming on the AFS-FHS webpage (http://www.fisheries.org/fhs).

American Fisheries Society – Fish Health Section; 27-29 July 2005; Minneapolis, Minnesota: The annual meeting of the Fish Health Section will be held at the Ramada Inn Airport at the Mall of America. In conjunction with the meeting will be a continuing education course "Current Topics in Aquatic Toxicology" to be held on Saturday, 30 July. For further information refer to the AFS-Fish Health Section webpage (http://www.fisheries.org/fhs).

AADAP's 2004 Aquaculture Drug Approval Workshop

11th Annual Drug Approval Coordination Workshop; 2-3 August 2005; Bozeman, Montana: This year's Workshop is scheduled to be held in Bozeman, MT on 2-3 August 2005. The 11th Annual Workshop will be co-hosted by USGS's Upper Midwest Environmental Sciences Center. In addition to the 2-day Workshop, a JSA sponsored "Biologics in Aquaculture Workshop" and the JSA's "Aquaculture Drug Research Forum" are scheduled to dovetail with the Workshop. Each will be a 1-day session and are scheduled for 1 August and 4 August, respectively. The First Announcement for the Workshop has been sent out, so please notify Molly Bowman if you'd like to receive a copy of the announcement and/or be added to the Workshop mailing list (molly_bowman@fws.gov). The announcement is also available on AADAP's website (http://fisheries.fws.gov/aadap/2_05Files/1st%20Announcement%20for%20Workshop.pdf). The Final Announcement for the Workshop, to be sent out in early spring, will include detailed lodging information and a registration form, and will be made available at http://fisheries.fws.gov/aadap/inadworkshop.html.

Recently held meetings

Minor Use Minor Species (MUMS) meeting with FDA's Center for Veterinary Medicine; 6 December 2004; Rockville, Maryland: Several aquaculture stakeholders had requested a meeting with FDA's Center for Veterinary Medicine. That meeting was held on 6 December at CVM headquarter in Rockville, MD. The purpose of the meeting was to discuss the Minor Use and Minor Species (MUMS) Act in the context of providing input to CVM on potential content of forthcoming implementing Regulations to the MUMS Act. The meeting was not only a source of information for CVM but also provided the same to stakeholder attendees. A set of meeting notes, including a list of the attendees, has been assembled and reviewed by CVM; these notes are available at http://fisheries.fws.gov/aadap/2_05Files/Meeting%20Notes%20with%20CVM%206dec04%20ver4.pdf. Additional information about MUMS can be found at: http://www.fda.gov/cvm/index/updates/MUMSOffice.htm. Comments submitted to FDA regarding MUMS can be found at: http://www.fda.gov/ohrms/dockets/default.htm. Once at this site, enter the number 2004N-0480 in the Docket Search box, which will reveal all days on which comments were submitted to this and other dockets. Selecting a day will then require you to use your browser's search function to find items submitted specifically to docket number 2004N-0480.

Marine Aquaculture Drug Workshop, 16 November 2004; Sarasota, Florida: The workshop entitled "Marine Aquaculture Drug and Chemotherapeutant Issues and Needs in Southern United States" was held on Tuesday, 16 November. The

organizers report that it was well received and attended. Roz Schnick, who led the program, has made her presentation available. It can be found on AADAP's website at (http://fisheries.fws.gov/aadap/2_05Files/Marine%20Drugs%20Sarasota%20ver%202,%2028jan05.pdf). Further inquiries about the workshop can be directed to Roz Schnick at RozSchnick@centurytel.net.

NRSP-7 International Minor Species Workshop; 7-8 October 2004; Rockvillle, Maryland: The workshop covered all minor species, spotlighting drug availability and approval requirements. Discussions focused on commonalities and the potential for international harmonization, or at least data sharing, in the future. Significant differences were often noted to be a function of whether a particular animal group was a major or minor food source, e.g., sheep are a minor species in the U.S., while they are a major species in New Zealand and Australia. Many presentations and discussions centered on aquaculture species. The CVM has made all presentations available on their website: http://www.fda.gov/cvm/index/mums/MUMSIntlMtg.htm under the topic "Presentations".

Zero-withdrawal Fish Anesthetic Roundtable Discussion; American Fisheries Society Meeting; 22 August 2004; Madison, Wisconsin: The meeting was very successful. Action items and more information on the discussion session can be found at (http://fisheries.fws.gov/aadap/archives.htm).

ROZ's CORNER

As the National Coordinator for Aquaculture New Animal Drug Applications, I prepared a fact sheet on the need for a zero-withdrawal anesthetic and compared the approval efforts on AQUI-S® with the regulatory status of MS-222, clove oil, sodium bicarbonate, and carbon dioxide gas. AQUI-S® is the only candidate anesthetic for achieving zero withdrawal through the drug approval process. This fact sheet, along with a cover letter, was sent to all International Association of Fish and Wildlife Agencies Drug Approval Working Group members, state fish chiefs, and aquaculture organizations in October 2004.

Aquaculture stakeholders met with the Center for Veterinary Medicine's new Office of Minor Use and Minor Species Animal Drug Development on 6 December 2004 to provide input to and discuss the provisions of the Minor Use and Minor Species (MUMS) Animal Health Act of 2004. One of the major provisions of MUMS is the designation of specific drugs, which makes a sponsor eligible for 7 years of marketing exclusivity and potential grants in the future. Tax incentives may be added as well, but this provision was not part of MUMS; this provision will require separate legislation. I provided draft requests for designation to all drug sponsors who have been active in gaining approvals of their drugs for aquaculture, resulting in sponsors of 12 drugs submitting 23 requests for designation for 34 label claims.

Under the auspices of the JSA's Working Group on Quality Assurance in Aquaculture Production, I developed "Matrices for Tracking Major Aquaculture Drug Approval Development". These documents provide detailed information on the data and information being developed for the approval of high priority drugs in the United States. These documents:

- provide the status of each drug toward approval,
- provide investigational and approval numbers for other interested entities to access,
- identify research entities and contact information for drug development by others,
- provide opportunities for funding and planning research by other entities, and
- identify potential bottlenecks impeding approval progress so that solutions can be found.

Thirteen high priority aquaculture drugs are included in these initial matrix documents. *Rosalie (Roz) Schnick, National Coordinator for Aquaculture New Animal Drug Applications, Michigan State University, La Crosse, Wisconsin*

CVM's NOTES

Oxytetracycline for Skeletal Marking - INAD Wrap-Up: With the recent approval of new products for use in marking the skeletal tissues of all finfish fry and fingerlings by immersion, CVM is encouraging holders of oxytetracycline hydrochloride (OTC) INADs for this claim to conclude their investigations and submit final study reports.

The effectiveness and safety data to support these approvals were generated by the public sector under a variety of INADs and summarized in Public Master File 5667 by NRSP-7. The Freedom of Information Summary for this file can be viewed at http://www.fda.gov/OHRMS/DOCKETS/98fr/PMF5667-fois001.doc. Sponsors seeking original or supplemental NADAs for this claim may reference this file in their application.

At this time, CVM believes the data in PMF 5667 are adequate to support the claim for marking of all species of finfish fry and fingerlings at a dose of 200 to 700 mg/L OTC (buffered) for two to six hours. Data collection under most of the publicly held INADs has been to support this claim.

CVM encourages the holders of these INADs to now use the approved products. Investigational use of OTC for skeletal marking is no longer appropriate for this treatment regimen. INAD holders may request investigation of other treatment regimens for species or life stages they believe are not well covered by the approved products.

For information on submitting final study reports or requesting alternate treatment regimens, INAD holders may contact *Dr. Donald A. Prater, Leader, Aquaculture Drugs Team at 301-827-7567 or dprater@cvm.fda.gov*.