

# STANDARD OPERATING PROCEDURES

DIVISION OF COMPARATIVE MEDICINE

UNIVERSITY OF SOUTH FLORIDA

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**TITLE:** Zebrafish Care and Feeding  
**SCOPE:** Animal Care Personnel  
**RESPONSIBILITY:** Facility Manager and Technical Staff  
**PURPOSE:** To Outline the Proper Procedures for the Care and Feeding of Zebrafish.

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## I. PROCEDURES

### 1. Receiving

- a. Zebrafish are shipped/transported in sealed, water filled, plastic bags with oxygen added. Upon arrival shipping bags are inspected for signs of damage and shipment accuracy.
- b. Inspect fish for any signs of stress, trauma, or mortality that may have occurred while in transit.
- c. Fish and fish embryos from approved vendors are introduced into an appropriate size tank and isolated from resident fish until they are fully acclimated to the aquatic system.
- d. Fish are acclimated to the aquatic system within 24 hours of arrival by emptying the fish, with the water they were shipped in, into an empty tank connected to the system. The water in-flow valve is then slightly opened to allow for the fish to slowly acclimate to the aquatic system water and conditions.
- e. Fish from unapproved vendors, or arriving with health concerns, or found sick, are isolated from healthy fish by placing them in their own tank with the out-flow emptying into the sink drain, and the Facility Manager and Clinical Veterinarian notified as needed.
- f. Individual shipments are identified by source, date of arrival, and any pertinent information.
- g. Animal numbers are recorded at time of arrival on ***Per Diem Sheets***.

### 2. Housing

- a. As a rule of thumb, fish should be housed in the Aquatic Habitats™ System (AHAB) tanks at a maximum density of 5 adult fish per liter of water.
- b. A net is utilized for catching fish that must be removed from a tank.
- c. Water conditions and quality for Zebrafish are maintained as follows:

Aquatic Habitats™ Water Quality Guidelines			
Parameter	Range	Preferred	Confirmed
Temperature	23-29°C	25-28°C	Daily
PH	6.0-8.0	7.2	Daily
Conductivity	450-1500 µS	700-900 µS	Daily
Alkalinity	50-200 ppm	170 ppm	Weekly
Hardness	4-8 dGH	6 dGH	Weekly
Ammonia	0	0	Weekly
Nitrite	0-25 ppm	0	Weekly
Nitrate	0-40 ppm	10 ppm	Weekly

- d. Room light cycle, 14 hours light (e.g., 9 AM till 11 PM) /10 hours dark cycle.
- e. Housing access is limited to IACUC certified personnel only.

### 3. Feeding

- a. Zebrafish are fed commercial Zebrafish diet (e.g., Hikari™ Tropical Micro-pellets or Zeiglar® Adult Zebrafish Complete Diet).

- b. Zebrafish should be fed twice daily by adding enough food to each tank so that food is available to all fish and nearly all food is eaten within 10 minutes.
- c. To feed zebrafish, turn off water flow to tank/rack, feed enough food that very little remains after ten minutes, restore water flow.
- d. Record feeding on the **Room Status Sheet**.

#### 4. Daily Duties

- a. Conduct health surveillance per **SOP #006**.
- b. Feed Zebrafish twice daily as outlined above.
- c. Check the AHAB system and verify system is operating properly using the checklist included on the **Room Status Sheet**, refer to the Aquatic Habitats™ User Manual for more detailed information.
- d. Inspect display and record the temperature, pH, and conductivity.
- e. Visually inspect the system pre-filter and replace as needed (e.g. daily to every 3<sup>rd</sup> day depending on the load on the system).
- f. Inspect the system particulate filter and change as needed. The charcoal filter is changed as needed. Additional maintenance schedules are conducted as needed.
- g. Assure no investigator's supplies or trash is left in the room.
- h. Check supplies (e.g., soap, paper towels, etc.).
- i. Clean counter/sink area and wipe down with disinfectant as needed.
- j. Complete **Room Status Sheet**.
- k. Assure all new arrivals are added to, and any animals sacrificed or found dead are deducted from the **Per Diem Sheet**.
- l. Sweep floor as needed and empty trash.

#### 5. Weekly Duties

- a. Mop floor with Decon-Spore 200.
- b. Water chemical analyses are conducted weekly to determine water quality parameters as defined in table above..

#### 6. Semi-annual Duties

- a. Disassemble tanks and clean with tap water. **Caution:** Use of chemicals and/or detergents can be detrimental to fish, refer to AHAB user manual.

#### 7. References

- a. Aquatic Habitats™ System Instruction Manual 2<sup>nd</sup> Edition.

Approved:

Date: