

STANDARD OPERATING PROCEDURES
 DIVISION OF COMPARATIVE MEDICINE
 UNIVERSITY OF SOUTH FLORIDA

SOP#: 803.7 Date Issued: 5/01

Date Revised: 10/22

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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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and Clinical Veterinarian notified as needed.

are identified by source, date of arrival, and any

be recorded at time of arrival on Per Diem Sheets.

os are transferred out of Quarantine into the Main

h should be housed in the Tecniplast ZebTec
 stem. The maximum density is 5 adult fish per liter of

atching fish that must be removed from a tank.

quality for Zebrafish are maintained as follows:

Tecniplast Zeb Tec ¥ Water Quality Guidelines			
Parameter	Range	Preferred	Confirmed
Temperature	72-82°F	78°F	Daily
PH	6.8-7.8	7.4	Daily
Conductivity	400-600 FS	550 FS	Daily
Alkalinity	50-200 ppm	170 ppm	Weekly
Hardness	0 dGH	0 dGH	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 a combination of live feeds and commercial processed dry feeds (e.g., Tecniplast ZEBRAFEED 200-400, ZEBRAFEED 100-200).
- 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. When feeding brine shrimp, use freshly harvested shrimp. Collect shrimp into a pipette while trying to avoid collecting any unhatched eggs into the pipette.
- d. When hand feeding, feed approximately one 1.5 ml pipette of shrimp per 10 adult fish. This can vary depending on the size and number of fish in the tank.
- e. Place pipette in the top of the tank and dispense about half the contents into the tank.
- f. Wait for the fish to consume most of the shrimp then dispense the remaining shrimp into the tank.
- g. Rinse pipette after each use. Place unused shrimp in the refrigerator for future use
- h. Record feeding on the Room Status Sheet .

4. Daily Duties

- a. Conduct daily monitoring of zebrafish morbidity and mortality.
 - i. Removing sick fish from the population is our most effective means of detecting pathogens and adverse environmental conditions, preventing spread of disease, controlling morbidity, and ensuring a high level of fish welfare.
 - ii. Observations of sick fish and communications must be noted on the Room Status Sheet and the Facility Manager's Animal Health and Environmental Concern Form. Tanks with health concerns are flagged with a red sticker tab.
 - iii. Remove Fish exhibiting the behavioral and physical signs below:

Behavioral Abnormalities	Physical Abnormalities
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- b. Place dead fish in a cooler at +4°C for 48 hours and lab informed.
- c. Feed Zebrafish twice daily as outlined above.
- d. Check the ZebTec system and verify system is operating properly using the checklist included on the Room Status Sheet , refer to the Tecniplast ZebTec ¥ User Manual for more detailed information.
- e. Inspect display and record the temperature, pH, and conductivity.
- f. Visually inspect the sea salt and bicarbonate tanks (e.g. refill as needed).
- g. Inspect the system. Additional maintenance schedules are conducted as needed.
- h. Assure no investigator's supplies or trash is left in the room.
- i. Check supplies (e.g., soap, paper towels, etc.).
- j. Clean counter/sink area and wipe down with disinfectant as needed.
- k. Complete Room Status Sheet .
- l. Sweep floor as needed and empty trash.
- m. Mop floor with AQUALIFE Multi-Purpose Cleaner dilution with water only.
- n. Adult fish that are sick and need to be euthanized: Contact lab to inform them about sick fish. If lab requests Comparative Medicine euthanize, immerse fish in buffered (pH 7.0 -7.4) Tricaine MS-222 at 250 mg/liter for 30 minutes following loss of rhythmic opercular movement. Zebrafish fry 4 to 14 days post fertilization (dpf) should be exposed for at least 20 additional minutes following loss of opercular movements. For embryos up to 7 days of age, immersion in diluted sodium hypochlorite solution (bleach at 6.15%) is acceptable. Always wear nitrile gloves, and safety glasses when handling Tricaine (workwear[2 01 Tc -0.001n.7(,)]TJ 0

- a. Check heating elements.
- b. Check Drum Filter
- c. Check UV lamp
- d. Check Conductivity probe
- e. Check pH probe

7. 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 ZebTec user manual.

II. References

1. Tecniplast ZebTec Stand Alone Aquatic System user manual.

Approved:

Date: