

Zebrafish Care and Feeding

Purpose: To outline the proper procedures for the care and feeding of zebrafish

Procedure:

- 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) Fish are inspected for any signs of stress, trauma, or mortality that may have occurred while in transit.
 - c) Fish 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 placing the sealed bag into the housing tank. The bag with the fish is floated for a minimum of 30 minutes depending on water temperature to allow for the fish to slowly acclimate to the 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. The designated lab personnel are notified as needed.
 - f) Individual shipments are identified by source, date of arrival, PI, IACUC #, and any other pertinent information.
 - g) Animal numbers are recorded on the census sheet at the time of arrival.

- 2) Housing

Recommended Maximum Housing Density:

Tank Size (Liters)	Holding	Breeding
10	100	60
3	30	18
1.5	10	6

A net is utilized for catching fish that must be removed from a tank.

Water conditions and quality for zebrafish are as follows:

Parameter	Range	Preferred	Frequency
Temperature	23-29°C	25-28°C	Daily
PH	7.0-8.0	7.5	Daily
Conductivity	3-500 µS	200 µS	Daily
Alkalinity	50-200 ppm	170 ppm	Biweekly
Hardness	4-8 dGH	6 dGH	Biweekly
Ammonia	0	0	Biweekly
Nitrite	0-25 ppm	0	Biweekly
Nitrate	0-40 ppm	10 ppm	Biweekly

Room light cycle, 14 hours light (e.g., 6 AM till 8 PM) /10 hours dark cycle. Housing access is limited to IACUC certified personnel only.

- 3) Feeding

- a) Zebrafish are fed commercial zebrafish diet (e.g., Hikari™ Tropical Micropellets 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) Feeding is recorded on the **Room Log Sheet**.

- 4) Daily Duties

- a) Health checks are conducted.
- b) Zebrafish are fed twice daily as outlined above.

- c) Tanks are inspected and the temperature, pH, and conductivity (use colemetric test kit, refractometer, thermometer) are recorded.
 - d) The system particulate filter is inspected and changed as needed. The charcoal filter is changed as needed. Additional maintenance schedules are conducted as needed.
 - e) All new arrivals are added to, and any animals sacrificed or found dead are deducted from the zebrafish census sheet.
 - f) Floor is swept as needed and trash is emptied.
- 5) Biweekly Duties
- a) Water chemical analyses are conducted twice weekly to determine water quality parameters by monitoring nitrite (NO₂), nitrate (NO₃), ammonia (NH₃), and water hardness levels with appropriate test bits.
- 6) Semi-annual Duties
- a) Tanks are disassembled and cleaned with tap water. Caution: Use of chemicals and/or detergents can be detrimental to fish.
- 7) Cleaning Patterns
- a) Floors of rooms and adjacent corridors will be swept daily.
 - b) Floors of rooms and adjacent corridors will be mopped with an appropriate disinfectant (see SOP "Preparation and Use of Disinfectants") at least twice weekly.
 - c) Sinks will be cleaned with disinfectant at least twice weekly.
 - d) Doors, door frames, and all other surfaces will be wiped weekly with disinfectant.
 - e) Rooms, including walls and ceilings, are sanitized monthly, as emptied of occupants, or more often as needed, using appropriate disinfectants (see SOP "Animal Room Sanitization").
 - f) Accidental spills and soiled wall surfaces will be cleaned as discovered or reported.
 - g) Soiled equipment left in animal or procedure rooms will be removed daily unless otherwise approved by the Operations Supervisor, CMF.
 - h) All towel dispensers will be checked daily and replenished as necessary.
 - i) Trash containers will be checked daily and removed as needed.
 - j) Room exhaust air filters are changed or cleaned monthly or more frequently if needed.
 - k) Light fixtures and tubes are checked daily. Any failures will be reported to the Operations Manager, CMF, who will then generate work orders for repair by Engineering Service personnel.
- 8) Reference
- a) Aquatic Habitats™ System Instruction Manual 2nd Edition.