

## **ZIRC Nursery Procedure**

ZIRC utilizes a nursery system commonly referred to as an “autonursery.” The distinguishing feature of an autonursery is the ability to automatically deliver water, through a small valve, to each individual cage. Each cage also has a drain, which allows water to exit the cage automatically. This provides a better rearing environment for larval zebrafish as the water stays cleaner because fresh water can easily be introduced.

The following procedure explains all aspects of using an autonursery system. When to turn the water on and for how long is determined by the age of the fish, as is their diet.

### **Feeding:**

- 4-9 day old fish are fed concentrated paramecia
- 10-12 day old fish are fed concentrated paramecia and Zeigler larval diet
- 13-21 day old fish are fed Zeigler larval diet and brine shrimp

### **Transferring:**

- 0-4 day old fish are kept in petri dishes with embryo medium, within an incubator
- 4 day old fish are moved into automatic nursery tanks, water off
- 5-9 day old fish remain in the automatic nursery, water off
- 10-15 day old fish are given 12 hour water flow, only at night
- 15-21 day old fish are given 24 hour water flow

### **Detailed procedures for feeding the nursery**

#### Day 0-4:

- Fish are kept in Petri dishes at a density of 50 fish per dish.
- They are stored in a light cycle incubator at 28.5 degrees Fahrenheit.

#### Day 4:

- Fish are transferred to an automatic nursery cage, with a small amount of fish water

#### Day 5-9:

- During this time fish are kept in automatic nursery cages with the water tuned off.
- Fish are fed 40mls concentrated paramecia, 2x per day.

#### Day 10:

- On this day, a new food is added to the feeding regimen. In addition to the 40mls concentrated paramecia, the babies are given Zeigler larval diet. Feed each cage 5mls nursery Zeigler mix.

- Once Zeigler is added to the diet on day 10, the water to each cage is turned on for 12 hours during the night. The water is turned off each morning before the feeding takes place.

#### Day 11:

- Fish are fed 40mls concentrated paramecia and 5mls Zeigler 2x per day
- Water is running only during the night, and remains off during the day

#### Day 12:

- On this day, brine shrimp is added to the diet. Each cage is fed a 5ml portion of brine shrimp, 2x per day.
- Paramecia is removed from the diet, but Zeigler remains

#### Day 13-14:

- During these days, cages are fed 5mls Zeigler, and 5mls brine shrimp 2x per day.
- Water is turned on only at night, and remains off during the day

#### Day 15:

- The water is changed to 24 hour flow
- Feedings remain the same

#### Day 16-21:

- During these days, fish are fed brine shrimp 2x per day and Zeigler as an optional supplement
- Water is on 24 hours a day

#### Day 21:

- Fish are usually ready to be removed from the nursery and put into adult fish aquariums.
- If fish are not large enough, continue caring for them in the same manner until they are big enough to be transferred out of the nursery.

#### Day 21-80:

- Fish are put into a special nursery grow out space in the main facility. They are put into adult tanks, with special baby drains.
- They are fed brine shrimp and a juvenile powdered mix, made from Zeigler larval diet.
- Once fish are large enough, approx. 2-3 months, their baby drains are replaced with adult drains and they are given adult master mix. They are also moved off of the grow out racks and onto the standard fish racks.