Plenary Session 1: SDG No. 6- Clean Water and Sanitation

Topic 1: A Tilapia Hatchery with Recirculating Water System

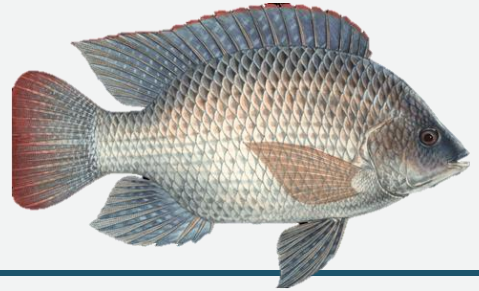
THE NEED FOR A CLEAN AND SANITARY WATER IN AQUACULTURE

QUALITIES OF TILAPIA AS AQUACULTURE SPECIES

1. They can tolerate high stocking density

2. Presence of slime coat

3. Tilapia is hardy



4. They grow quickly given good water quality and ample food

QUALITIES OF TILAPIA AS AQUACULTURE SPECIES

5 They are omnivorous

6 Fingerlings are produced by the females all year long

NUTRITIONAL FACTS OF TILAPIA

Nutrition Facts

Serving Size: 100 g

Amount Per Serving	
Calories 96	Calories from Fat 15
	% Daily Values*
Total Fat 1.7g	**3%**
Saturated Fat 0.571g	**3%**
Polyunsaturated Fat 0.387g	
Monounsaturated Fat 0.486g	
Cholesterol 50mg	**17%**
Sodium 52mg	**2%**
Potassium 302mg	
Total Carbohydrate 0g	**0%**
Dietary Fiber 0g	**0%**
Sugars 0g	
Protein 20.08g	
Vitamin A 0%	Vitamin C 0%
Calcium 1%	Iron 3%

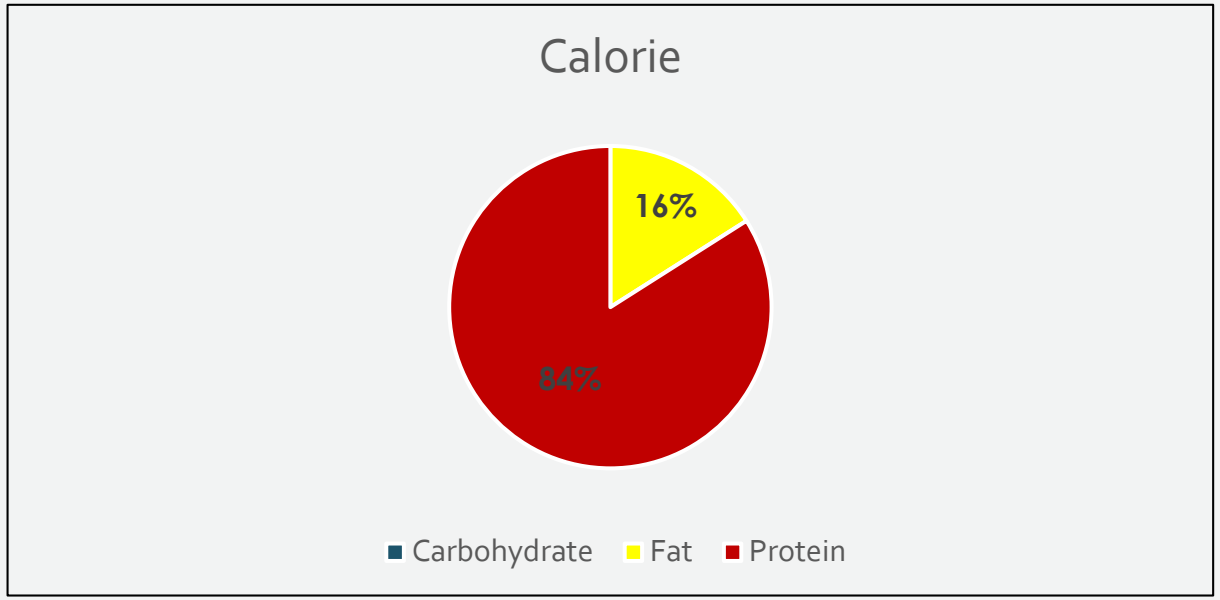
* Percent Daily Values are based on a 2000 calorie diet. Your daily values may be higher or lower depending on your calorie needs.

Nutrition summary:

Calories	Fat	Carbs	Protein
96	1.7g	0g	20.08g

There are **96 calories** in 100 grams of Tilapia (Fish).

Calorie breakdown: **16% fat**, 0% carbs, 84% protein.



Source: USDA

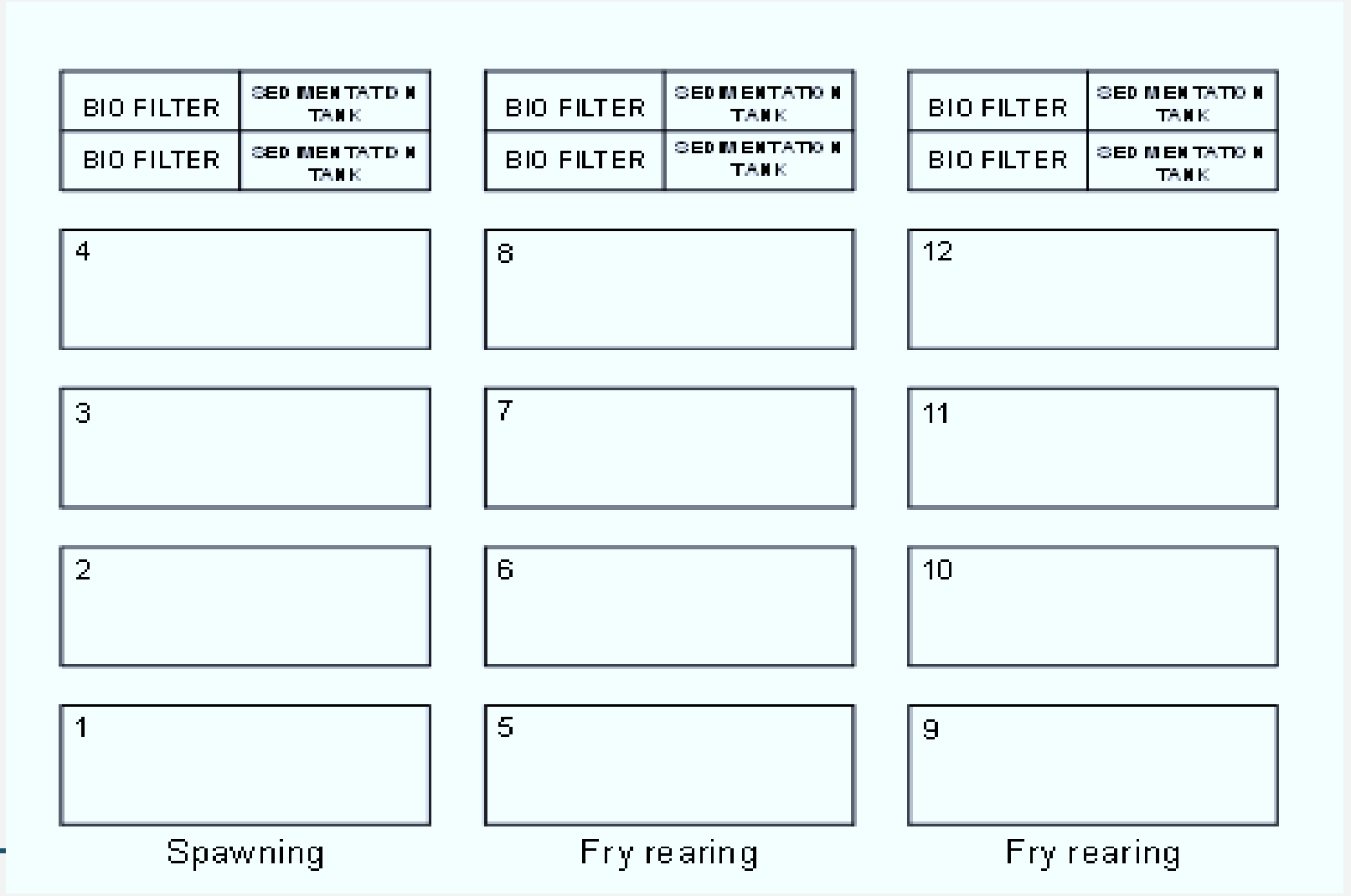
RECIRCULATING WATER SYSTEM

- Synonymous to recirculating aquaculture system (RAS)
- Rears fish at high densities, in indoor tanks with “controlled” environment
- Recirculating systems filter and clean the water for recycling back to the fish culture tanks

BENEFITS OF RECIRCULATING AQUACULTURE SYSTEMS (RAS)

- Maximize production on a limited supply of water and land
- Nearly complete environmental control to maximize fish growth year-round
- Flexibility to locate production facilities near large markets
- Complete and convenient harvesting
- Quick and effective disease control
- Recycle most of the water
- Consume less water than other types of culture systems

A TILAPIA HATCHERY WITH RECIRCULATING WATER SYSTEM



CULTURE OPERATION INCLUDES:

- Broodstock management
- Breeding
- Fry rearing/Nursery

SALIENT FEATURES OF A TILAPIA HATCHERY WITH RECIRCULATING WATER SYSTEM

- It has an exemplary water management system that maintains good water quality throughout the whole culture system
- Applies probiotics in the spawning/rearing tanks which is then circulated in the different tanks
- It has biofilter which is the site where beneficial bacteria remove (detoxify) fish excretory products like ammonia.

SALIENT FEATURES OF A TILAPIA HATCHERY WITH RECIRCULATING WATER SYSTEM

- It has a sedimentation tank which serves as settling basin to concentrate and remove suspended solids (fish feces, uneaten feed particles) to avoid the clogging of biofilter and lessen the consumption of oxygen

- Produce fertilizer out of the gathered sludge from the sedimentation tanks

SALIENT FEATURES OF A TILAPIA HATCHERY WITH RECIRCULATING WATER SYSTEM

- Applies heterotrophic or “biofloc” technology
- The application of biofloc technology reduces external feed requirement to up to 70% ((DeKeyzer, et, al., 2013)
- The recirculation of water creates an ideal environment for protein-rich bacteria to develop abundantly in water