PRO 2655

Study the Growth of Guppy Fish in Nursery Phase by Feeding Different Feeds

TSK 4739

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1 Introduction

Growth, health and reproduction of fish and other aquatic animals are primarily dependent upon an adequate supply of nutrient, both in terms of quantity and quality, irrespective of the culture system in which they are grown.

It is essential to have require protein, lipids, energy, vitamins, minerals and other normal physiological functions for the growth of fish.

In fish farming, nutrition is critical because feed represents 40-50% of the production costs.

The development of new species-specific diet formulations supports the aquaculture (fish farming) industry as it expands to satisfy increasing demand for affordable, safe, and high-quality fish.

Prepared or artificial diets may be either complete or supplemental.

Complete diets supply all the ingredients (protein, carbohydrates, fats, vitamins, and minerals) necessary for the optimal growth and health of the fish.

Most fish farmers use complete diets, those containing all the required protein (18-50%), lipid (10-25%), carbohydrate (15-20%), ash (< 8.5%), phosphorus (< 1.5%), water (< 10%), and trace amounts of vitamins, and minerals.

When fish are reared in high density indoor systems or confined in cages and cannot forage freely on natural feeds, they must be provided a complete diet.

Supplemental diets do not contain a full complement of vitamins or minerals, but are used to help fortify the naturally available diet with extra protein, carbohydrate and/or lipid.

Fish, especially when reared in high densities, require a high-quality, nutritionally complete, balanced diet to grow rapidly and remain healthy.

2 Objective

- To find out the effect on growth of Guppy fish in Nursery phase by feeding different feeds

3 Methodology

Three nursery tanks were selected. 60 G tank was fed with the normal dry feed amount given by workers.

Table 1: Current Practice

Time	Feed
8.00 a.m.	Prima 0
10.00 a.m.	Brine shrimp
1.30 p.m.	Prima 0
3.30 p.m.	Brine shrimp

3.1 Feed preparation

61 G and 63 G tanks were fed with Prima 0 and 999 feed. In here, 999 feed was blended well and mixed with Prima 0 feed with 2:1 ratio. Different feed amounts were provided as mentioned follow. Feed ration was increased with their palatability.

Table 2: DOH in Controller

	Date	Controller - 60 G (2016/7/23)	
No of date		Feeding	DOH
1	23/7/2016	current procedure	
2	24/7/2016	practiced in farm	
3	25/7/2016		
4	26/7/2016		
5	27/7/2016		
6	28/7/2016		1(due to large particle tapped in a mouth)
7	29/7/2016		
8	30/7/2016		
9	31/7/2016		
10	1/8/2016		
11	2/8/2016		
12	3/8/2016		
13	4/8/2016		
14	5/8/2016		
15	6/8/2016		
16	7/8/2016		
17	8/8/2016		
18	9/8/2016	Sorted	

Table 3: Provided feed amount during 1st week

Date		Tank 1 - 61 G (2016/7/27)				Date	Tank 2 -63G (2016/7/29)			
No.		Feeding	Feed form	Water Level(cm)	DOH		Feeding	Feed form	Water Level(cm)	DOH
1	27/7/2016	6 g	Powder	14	No	29/7/2016	6 g	Powder	14	No
2	28/7/2016	6 g	Powder	14	No	30/7/2016	6 g	Powder	14	No
3	29/7/2016	14 g	Powder	14	No	31/7/2016	7 g	Powder	14	No
4	30/7/2017	16 g	Powder	15	No	1/8/2016	8 g	Powder	14	No
5	31/7/2017	18 g	Powder	18	No	2/8/2016	9 g	Powder	15	No
6	1/8/2016	18 g	Solid	19	No	3/8/2016	9 g	Solid	19	No
7	2/8/2016	20 g	Solid	23	No	4/8/2016	10 g	Solid	22	No
8	3/8/2016	20 g	Solid	22	No	5/8/2016	10 g	Solid	23	No
9	4/8/2016	20 g	Solid	22	No	6/8/2016	10 g	Solid	22	No
10	5/8/2016	20 g	Solid	22	No	7/8/2016	10 g	Solid	22	No
11	6/8/2016	20 g	Solid	22	No	8/8/2016	12 g	Solid	22	No
12	7/8/2016	20 g	Solid	22	No	9/8/2016	12 g	Solid	22	No
13	8/8/2016	20 g	Solid	22	No	10/8/2016	12 g	Solid	22	No
14	9/8/2016	20 g	Solid	22	No	11/8/2016	12 g	Solid	22	No
15	9/8/2016	SORTED				12/8/2016	12 g	Solid	22	No
16						13/8/2016	SORTED			
17										
18										

4 Observations

Figure 3: Fry in 61 G tank

Figure 2: Fry in 63 G tank

Figure 1: Fry in 60 G tank

Visual observation of fry after one week

Figure 6: Fry in 61 G tank

Figure 5: Fry in 63 G tank

Figure 4: Fry in 60 G tank

Visual observation of fry after Second Week

Figure 7: Fry in 61 G tank

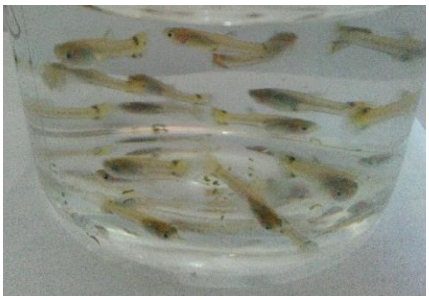

Figure 9: Fry in 63 G tank

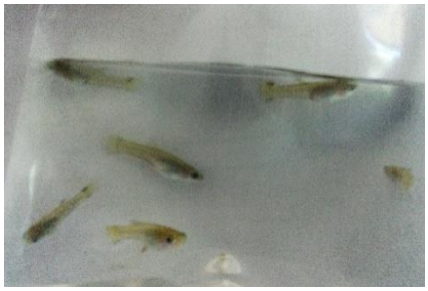

Figure 8: Fry in 60 G tank

From the beginning, prepared feed powder was eaten by one day fry.

Visually, there were higher growth rate in tank no. 61 G than other two tanks.

Figure 10: small fry tending to eat feed balls during their 5th day

5 Results

Weight of fishes in three tanks

Table 4: weight of fish in three tanks

	Weight(g)		
Stage	**60 G**	**61 G**	**63 G**
Initial	0.018	0.018	0.018
1 st week	0.02	0.029	0.022
2nd week	0.028	0.051	0.032
During sorting	0.042	0.051	0.049

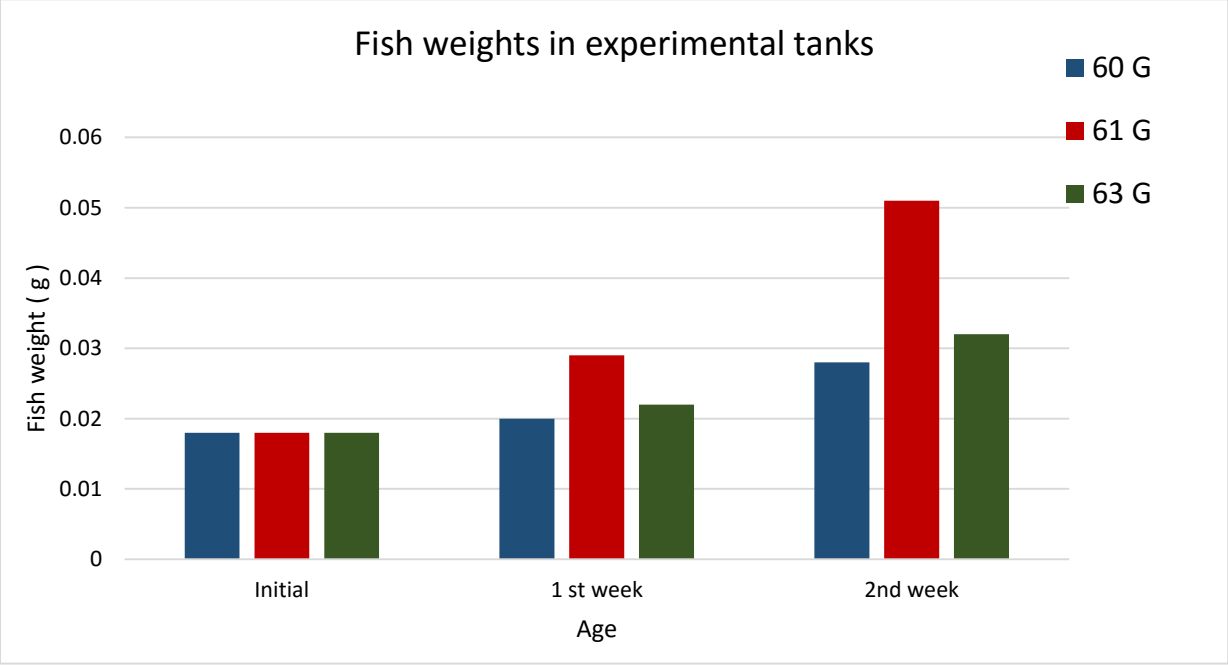

Figure 11: Fish weights in experimental tanks

Weight Gain of Fish

Table 5: Weight gain of a fish in three tanks

	Weight Gain of a fish (g)		
	60 G Tank	**61 G Tank**	**63 G Tank**
1 st week	0.002	0.011	0.004
2nd week	0.008	0.022	0.01

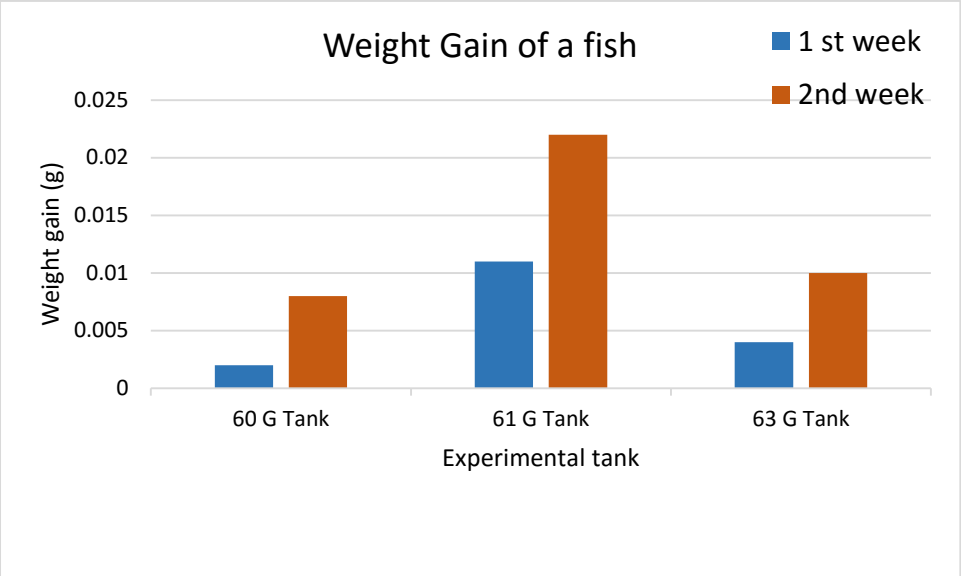

Figure 12: Weight gain of a fish during the experiment

Sorted Counts

Table 6: Sorting details

	Tank 60 G	Tank 61 G	Tank 63 G
Initial Count	2500	2500	2500
Female	1350	1440	1122
Male	850	1050	1378
Discard	150	10	0
Under Sized	150	0	0
Total Remaining	2500	2500	2500

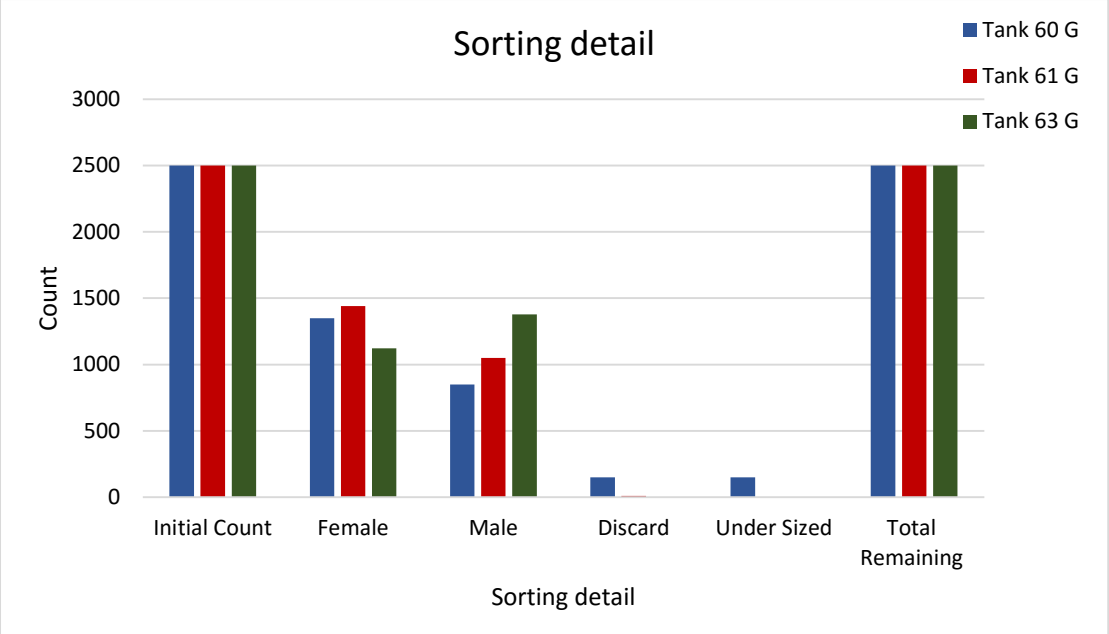

Figure 13: Sorting detail

6 Discussion

Feeding rates and frequencies are in part a function of fish size. Small larval fish and fry need to be fed a high protein diet frequently and usually in excess. Feeding small fish in excess is not as much of a problem as overfeeding larger fish because small fish require only a small amount of feed relative to the volume of water in the culture system.

The growth of fry fed with 999 feed is higher than the fry fed with normal feed. Because, 999 feed is richer in protein amount than the prima note. 999 feed is consisted with 72% of protein while prima note is consisted with 42% of proteins.

Fry should be familiar with the feed from their first day. After that they tend to eat well. It is better for their immune system.

It is better to familiar the fish with feed balls (solid form) from their nursery phase. In normal practice, they are fed with solid form feed after sorting and introducing them into the intensive system. On that time they became stress more and solid feed form also not familiar one. Because of that, better to feed with solid form from their fifth day.

7 Conclusion

During guppy nursery phase, it can be gained both higher growth rate within short time duration and healthy fish by providing both prima note and triple nine feed 1:2 ratio instead of providing prima note. Providing feed amounts according to the Table 3, mentioned under 63 G tank, it can be harvested more male guppy.

8 References

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