

The performance of a fish feed depends on:

1. Its ability to meet the nutritional needs of the growing fish.
2. Its water stability and impact on water quality.
3. On whether or not all fish in the pond are able to consume the required amount.

Ugachick's floating fish feeds meet all these requirements because the feeds are tailored to meet the specific nutritional requirements of the fish at the different stages of growth. Each pellet is complete in nutritional value and remains intact in water for the stipulated period of feeding. This, coupled with the fact that the pellets do not sink to the pond bottom, reduces potential negative effects on pond water quality resulting from excess feed decomposing in the pond.

Catfish are naturally omnivores. Adults tend to be more carnivorous, eating other fish or aquatic animals. Adults hunt in packs and feed about once a day. Hence, catfish have large stomachs that can hold large amounts of food. Unlike tilapia, catfish do not forage on plankton. Consequently, they are entirely dependent on the feed given for their nutritional requirements in ponds. Their grow-out feed should therefore have a protein level not less 30%. If the feed has less than 30% protein, they tend to eat each other so as to supplement their protein requirement. Growth rates are also poor when the protein levels are less than 30%. Because of their social characteristics and natural adaptation to waters of low quality, catfish can be farmed at higher densities than tilapia.

For best results, the following are the recommendations when rearing catfish in ponds using Ugachick floating fish feed. The following preconditions need to be met before and during the course of production.

## Preconditions

### 1. Pond Preparation

- Ensure the pond is not leaking.
- Screen the inlet to ensure no wild fish enter the pond

### 2. Filling the Pond with Water

- Only fill through a screened inlet
- Ensure the water depth is on average 1 m (about 80 cm towards inlet and not more than 1.2 towards outlet).

### 3. Stocking

- Stock within 10 days of filling the pond. *This limits chances of predators (e.g. frogs) dominating pond and competing with the fish for the feed.*

- Survival rates of fish stocked at less than 7g each is low. *Fish less than 7 g should be stocked in a nursery pond first till they get to 7 g or more .*
- Stock fish of the same size. If the fish are of different sizes, the larger fish will eat the smaller ones.
- **Number to Stock** : depends on the ponds carrying capacity and desired harvest size. The carrying capacity for catfish ponds is 2 kg per m<sup>2</sup>. *If too many fish are stocked in the pond, growth rates will be poor .* Below are stocking guidelines:

### 4. Pond Management

- Keep inlet and outlet screens on right through the cycle.

Targeted Average Marketable Size per Fish	Number of Fingerlings to Stock per m <sup>2</sup>
400 g	5
600 g	3
800 g	2.5
1,000 g	2

- Do not let water through the pond continuously. Only add water when topping water levels or when water quality becomes poor.
- Do not fertilise catfish ponds.
- Catfish tend to stir the pond bottom. The pond water will therefore look muddy with sometimes a green film on -top. This is normal.
- Maintain recommended average water depth of 1 meter.

### 5. Other Measures

- Do not feed wet or mouldy feed.
- Store feed in a cool dry place, away from direct sunlight and on pallets off the floor and off the walls.
- Harvest pond before it gets to carrying capacity.

## How to Feed with Floating Feeds

- Refer to the **feeding chart as a guide** .
- **Use the correct type and size of feed** for the size of fish being reared.
- **Feed the right amount** : The amount of feed the fish need each day is based on their body weight and affected by water quality and their health at the time.
- **Feed by Response** : Feed based on the fishes interest in coming to eat. Once the fish show no interest in feeding, do

not add any more.

- **Feed the Correct number of times a Day**: The feeding chart shows how many times a day, fish at different sizes should be fed. Catfish of about 400 g should be fed once a day, otherwise there will be size variations.
- Sample the pond at least every 30– to 45 days. Read-just the feeding based on the actual average weight obtained.
- Keep daily records of the amount fed to enable you monitor growth rates and feeding performance.
- If one follows the guidelines, by harvest time one should have used about 1.8 kg of feed to produce 1 kg of fish. The amount of feed used to produce a kilo of fish is called the **feed conversion ratio (FCR)**.

### How to Train Fish Feed by Response

To feed by response, fish need to be trained to come and eat from the same place at the same time at the water surface.

1. Call the fish to feed at the designated fixed time and place. E.g. by making a sound or stump the ground just before feeding.
2. Pour in a handful of feed first. If the fish come, add more. If they do not come do not add any feed.
3. The following day, do the same until the fish eventually learn that if they do not come to feed on time, there will be nothing left for them. This may take several days .
4. The first week, do not give more than half the estimated required ration (see feeding chart) to train the fish to feed very intensively and rapidly.
5. **Do not trickle food into the pond. Use containers to broadcast the feed rapidly.**
6. The fish should finish all the food given in 15 minutes. If not, reduce the ration. If they finish it all in less than 5 minutes, add more.
7. Record daily how much has been actually consumed.



Calling fish to feed



Fish Respond to the Call



Fish Feeding Rapidly



Fish Leaving After

## Catfish Feeding Chart

Weeks in production	Fish Size (g)	Growth (g/day)	Daily Feed (% BW)	Daily Feed/Fish (g)	FCR	Type of feed Protein % CP - size (mm)	Number of Feedings/Day
<b>*Recommended Size at Stocking</b>							
*1	10	0.5	5.0	0.5	1.0	35-3	4
2	14	0.6	4.7	0.7	1.1	35-3	4
3	23	1.2	4.6	1.0	0.9	35-3	4
4	33	1.4	4.0	1.3	0.9	35-3	4
5	45	1.7	3.8	1.7	1.0	35-3	3
6	59	2.0	3.6	2.1	1.0	35-3	3
7	77	2.6	3.4	2.6	1.0	35-3	2
8	97	2.8	3.0	2.9	1.0	30-3	2
9	122	3.7	3.0	3.7	1.0	30-3	2
10	150	4.0	2.7	4.1	1.0	30-3	2
11	182	4.6	2.5	4.6	1.0	30-5	2
12	217	4.9	2.4	5.2	1.1	30-5	2
13	252	5.0	2.4	6.0	1.2	30-5	2
14	288	5.1	2.0	5.8	1.1	30-5	2
15	323	5.1	1.8	5.8	1.1	30-5	2
16	359	5.1	1.8	6.5	1.3	30-5	2
17	395	5.1	1.8	7.1	1.4	30-5	1
18	430	5.1	1.5	6.5	1.3	30-5	1
19	466	5.1	1.5	7.0	1.4	30-5	1
20	502	5.1	1.5	7.5	1.5	30-5	1
21	537	5.1	1.4	7.5	1.5	30-5	1
22	573	5.1	1.4	8.0	1.6	30-5	1
23	609	5.1	1.3	7.9	1.6	30-5	1
24	645	5.1	1.3	8.4	1.6	30-5	1
25	680	5.1	1.2	8.2	1.6	30-5	1
26	716	5.1	1.2	8.6	1.7	30-5	1
27	752	5.1	1.2	9.0	1.8	30-5	1
28	787	5.1	1.1	8.7	1.7	30-5	1
29	823	5.1	1.1	9.1	1.8	30-5	1
30	859	5.1	1.1	9.4	1.9	30-5	1
31	894	5.1	1.1	9.8	1.9	30-5	1
32	930	5.1	1.0	9.3	1.8	30-5	1
33	966	5.1	1.0	9.7	1.9	30-5	1
34	1002	5.1	1.0	10.0	2.0	30-5	1
35	1037	5.1	1.0	10.4	2.0	30-5	1
36	1073	5.1	1.0	10.7	2.1	30-5	1

## Estimating Feed Requirement

### 1. The estimated total amount of feed the fish in a pond per day:

= Fish Size (g) x total amount per fish per day x the total number of fish in the pond

### 2. The amount of feed to give at each meal:

= total feed requirement for the day (calculated in 1 above) / Number of Feedings per Day

### Remember:

1. Feed by Response
2. If the fish do not finish the amount calculated, keep the balance in a closed container for the following meal as shown in the picture below.



**These are only guidelines. Results will vary based on local pond water temperatures, the farmers specific management practices and the pond's characteristics.**

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## Guidelines on the Use of Ugachick Floating feed to Rear the African Catfish in Earthen Ponds



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