

# Adaptive Farming Guideline for SAFETI Shrimp Farmers in COVID-19 Situation

## 1. Good production may be achieved even by delayed stocking:

- Currently critical inputs for shrimp farming are not easily available in the local market and some cases farmers are buying high price because of lockdown for CORONA crisis. The necessary inputs availability and price situation will improve over the time and government will interfere to ease agricultural inputs supply system.
- It is evident that Shrimps often suffer due to high temperature during April-May, rather end of May or June will be suitable for PL stocking to safe the stock from high temperature and reduce the chance of disease infestation.
- Current COVID situation, Shrimp price is low in the international market, and the market is unstable too. The international market will be stable with improving CORANA situation and come to normal. So, there have chance to get good price of shrimp by delayed stocking.

## 2. Reduce stocking density: stocking density of PL reduce to 80 -100 per decimal and harvest large size (50-60 g) of shrimp, it can be helpful to reduce the risk, negotiate cost of production with tendency of high inputs price and improve farmers ability to coup with uncertain probably little less market price compare to previous year.

## 3. High-Health SPF PL need to be stocked.

## 4. 'Synbiotic' will apply to improve natural feed availability in low density shrimp farming along with application of good quality feed. 'Synbiotic' dose per 100 decimals or 1 acre pond will be: 10 kg Rice polish, 2 kg sodium bicarbonate and 20-30 g probiotics; these all together put into a container with 50-liter water and leave it for 48 hours for fermentation; after that the extracted juice by screening fine mesh net will be ready to use throughout the gher/pond. The following 2<sup>nd</sup> and 3<sup>rd</sup> dose will be half of the initial dose. 'Synbiotic' can be used at least one and even two times per week as regular basis throughout the culture period. Please keep in mind, home-made feed or low-quality feed should not be used in shrimp culture gher/pond.

## 5. Pre-stocking Management:

- Pond bottom dry well so that there is no wet soil or mud up to 3-4 inchs down side of the bottom. Water depth will remain 3-5 ft even in the dry season.

- Bio-security protocol must be strict. Setup 4 ft width blue net fence surrounding the gher and then water filling with use of 500 micron filter net by 2-3 steps, which will reduce bleaching powder dose.
- Disinfection the gher/pond water by using 25-30 ppm bleaching powder after 2-3 days of sedimentation.
- If water filling completed but bleaching powder not available in the market, in that cases, ensure chain dragging daily 2-3 times to prevent the aquatic weed growing on the bottom of the gher. Disinfection the water by using 25-30 ppm bleaching powder when available, and wait at least 15 days. When transparency obtain 40-45 cm then SPF PL will have to stock in gher.
- Continuing chain dragging from the day after bleach to the day before PL stocking, this way, chance of growing the aquatic weed will reduce on the bottom of the gher.

**Steps taken to reduce cost of production and adjust profit margin under the uncertain export and domestic market for the pandemic COVID-19 throughout the world.**

1. Reduce bleaching application by using 2-3 step 500 micron filter net.
2. Reduce stocking density from 3-4/m<sup>2</sup> to 2-3/m<sup>2</sup> (14,000 to 10,000/acre)
3. Expected average harvesting size increase from 40 gm to 50 gm
4. Produce enough natural feed (Zoo plankton) to improve FCR from 1:1.1 to 1:0.9
5. Sales price will be same as shrimp size will be bigger from 40 gm to 50 gm.

## Comparative Cost Benefit Analysis Under COVID-19 Situation

Water area: 1.0 acre (100 decimal); Total Land area: 1.30 acre

Description	As of Previous year, Expenses (2019) (Tk.)	As of Present year, Expenses (2020) (Tk.)
1. Surrounding blue net fencing including bamboo & rope.	8,000/-	8,000/-
2. Cat walk, rope line, feed checking tray etc.	6,000/-	6,000/-
3. 500 micron filter net.	1,000/-	1,000/-
4. Bleaching powder (reduced from 240kg @Tk. 60 /kg to 120 kg @ Tk. 70/kg); (price increase by >15%)	14,400/-	8,400/-
5. Lime (burnt lime, agricultural lime and dolomite)	7,000/-	7,000/-
6. Seed SPF (reduced from 3-4/m <sup>2</sup> @ tk. 1.00 to 2-3/m <sup>2</sup> @ tk. 0.75); 10,000 pcs/acre (SPF PL price reduce by ~20-25%)	14,000/-	7,500/-
7. Shrimp feed Expected FCR (reduce from 1:1 to 1:0.9); Required feed 337 kg @ tk. 135 (~15% cost increase)	48,000/-	45,500/-
8. Synbiotic (Rice polish, sodium bicarbonate, probiotic)	2,500/-	5,000/-
9. Good quality Probiotic	10,000/-	10,000/-
10. Fertilizer and minerals	10,000/-	10,000/-
11. Harvesting expenses	4,000/-	4,000/-
12. Worker expenditure	30,000/-	30,000/-
13. Miscellaneous exp.	11,000/-	11,000/-
Total	165,900/-	153,400/-
Land rent	32,750/-	32,750/-

### Comparative Income Analysis

Description	As of Previous (2019) (Tk.)	As of Present (2020) (Tk.)
1. Survival rate	75%	75%
2. Targeted Average weight per animal	40 gm	50 gm
3. Expected production	400 kg/acre	375 kg/acre
4. Expected sales price (assume sale price will reduce by 20% for same grade)	Tk. 900/kg	Tk. 880/kg
5. Total sales value	360,000/-	330,000/-
6. Gross profit/acre one Crop in 2020 (330,000-153,400= Tk. 176,600)	194,100/-	176,600/-
7. Net profit/acre (Less land rent, before interest and depreciation)	161,350/-	143,850/-
8. Per hectare	398,535/-	355,309/-
9. Cost of production per kg shrimp	Tk. 497 (40g animal)	Tk. 496 (50g animal)

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