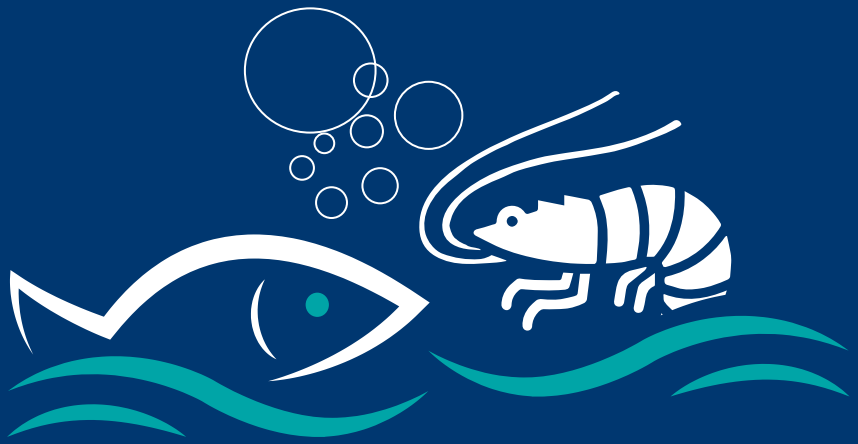
VALUEMAN®



Valueman Aqua Feed

Fish & Shrimp

Feed with Culture Guidelines

Besides using good quality hatchlings (seeds), it is an absolute urgency to use high quality nutritious fish feed to ensure a optimum fish production. Commercial aquaculture cannot be profitable entirely depending on naturally produced food plankton. This is why fish should be provided food externally in addition to natural food.

Conforming to nutritional qualities, fish feed is categorized into two

i) Protein rich fish feed
ii) Energy rich fish feed

These two types of factory- made feed are produced into two forms:

i) Mash feed and
ii) Pellet feed

Pellet feed is available in two varieties

1) Floating fish feed
2) Sinking fish feed

'Valueman Organic' has introduced a protein and energy rich mash, sinking and floating fish feed in the market for the aqua culture farmers. It has been proved that they are extremely effective for inland water fish or sweet water fish as well as catfish like Pangasius, etc. Besides, another high protein rich 'antibiotic free' product meant for the shrimp is also available in the market.

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Fish Farming

Instructions for fish feeding

50% of total feed should be applied in the morning and the rest 50% before sunset. It is advised not to apply feed into pond in cloudy days or in a state of stress. Besides, feed should not be applied to muddy water, or if water temperature declines below 11 degree or in the abundance of phytoplankton, feed is not required.

General guidelines of fish feed storage

Place the bags in a line while storing (12 bags will be set for maximum height); maintain gaps between lines. Bags should be kept on wooden plank rather than directly on earth. The storage room must be sufficiently high, moist-free, well ventilated and preventive of insects and rodents like rats etc. Storage date should be mentioned on each bag. Don't store feed for more than 1.5- 2 months. Otherwise its qualitative value may decline.

Floating & Sinking Feed

Evaluation of nutritional parameters of Valueman Aqua floating and sinking fish feed

Valueman Aqua Feed	Pellet size	Protein% minimum	Crude fat % minimum	Moisture % maximum
Floating Fish Feed	1.2 mm	34	6	11
Floating Fish Feed	2 mm	28	5	11
Floating Fish Feed	3 mm	24	5	11
Floating Fish Feed	3-4 mm	22	4	11
Sinking Fish Feed	2.5 mm	28	4	11
Sinking Fish Feed	2.5 mm	22	3	11

FEEDING CHART

Sl. No.	Body Weight (GM)	Feed (Approx %)	Pangasius Fish Pellet Size (MM)	Fish (IMC) Pellet Size (MM)
1	10-30	5	2	2
2	30-50	4	3	2
3	50-100	3.5	3	2
4	100-200	3	4	3
5	200-500	2	4	3
6	500-700	1.5	4.5	3-4
7	700-1000	1	4.5	3-4
8	above 1000	0.8	4.5	3-4

Some important and relevant information

1. Amount of lime used in the pond

Amount of lime should be determined observing the pH level of pond water and bottom soil. The more acidic the bottom soil and water of the pond are, the more will be the amount of lime required. Little lime is used when pH of the pond found at desired level. Application of lime on diverse types of soil is as follows

pH of water.	pH of soil.	Quantity of lime application (kg/hectare/year)
4.0 - 5.0	3 - 4	2000
5.0 - 6.5	4 - 5.5	1000
6.5 - 7.5	5.5 - 6.5	500
7.5 - 8.5	6.5 - 7.5	200
8.6 or more than that.	7.5 or more than that.	No need of lime application

2. Method of lime application

1. First step of aquaculture is the preparation of the pond. Lime is to be scattered on the soil of the dry pond and thoroughly mixed with the soil with the help of a plough before monsoon.

2. This method is different for a pond containing water. Lime should be mixed in a container for 3-4 hours before application. This mixture should be sprinkled in different parts of the pond with the help of a boat or a big container. Lime should be applied at dawn because of presence of low amount of pH in water at that time.

3. Use of fertilizer in the pond

The pond should contain sufficient quantity of fish food organism for growth of fish. All these fish food organisms like plant organisms and animal organisms require food for their survival. Different types of organic and inorganic fertilizers provide necessary nutrition for the fish food organism enabling them to increase in number. Therefore, we have to apply fixed quantity of fertilizer in the pond to ensure good production of fish, just like we add fertilizer in land to get a good crop. Usually, both inorganic/ chemical and organic fertilizers are applied into the pond.

4. Inorganic fertilizers

Fertilizer like Nitrogen dissolves easily in water but problem of some fertilizers like phosphates is their inability to dissolve easily in water. Urea and ammonium sulphate among fertilizers containing nitrogen and single super phosphate among fertilizers containing phosphate are much in use. Importance of fertilizers containing phosphate is the highest among all those used in the pond. Because they play a vital role in increasing the number of plant organisms. As soon as phosphate is applied in pond water plant organisms absorb it within a few minutes and increase their number. Much better result is achieved when nitrogen-rich fertilizer is combined with phosphate rich fertilizer.

5. Organic fertilizer

Organic fertilizer is made up of many nutrients. Organic fertilizer helps to increase zoo plankton or animal organisms. This fertilizer dissolves very slowly taking a long period of time and increases production of nutrients in water. Consequently, the pond remains fertile for many days and they help in working of inorganic fertilizer. Mustard oil cake is largely used for organic fertilizer and fish feed. If you wish to use Mustard oil cake as fertilizer, you should make it soft applying water and mix it well with cow-dung. Our product **Aqua Soil Vaue** need not require mixing with cow-dung, rather the pond is protected against harmful after effects cow-dung use. Not only that, if you use **Aqua Soil Value** regularly, pH balance and DO level in water is maintained. Plankton, the natural food of fish is regularly produced.

6. Feed Supplement

Aqua Grow Value should be regularly used to maintain quality standard of water. This product can be applied directly at the rate of 3-4 Ltr per acre every month. **Aqua Grow Value** neutralizes the toxic elements produced in water in a natural way. As

a result, right ambience of aquaculture is maintained in water. Not only that, use of **Aqua Grow Value** increases the longevity and sustainability of the plankton.

Aqua Shield increases the immunity of the fish. It is to be mixed with fish feed at the rate of 2-3 ml per KG. It not only helps the fish to grow but also increases its digestive capacity and builds internal immunity to fight against diseases. It should be kept in mind that **Aqua Grow Value** and **Aqua Shield** are equally important to raise fish and shrimp.

7. Artificial Oxygen

Quantity of dissolved oxygen (DO) may decrease due to several reasons. So, farmers must keep alternative measures to increase amount of oxygen in water instantly. **Insta-Ox** is such a product which can increase amount of dissolved oxygen in water instantly.

Ideal Atmosphere of water and soil for aquaculture at a glance

No	Parameter	Favourable level	Remarks (Water)
1.	Temperature	25-32 degree centigrade	If temperature is below 25-degree centigrade growth of fish is not well. This is why, growth of fish in winter is not satisfactory.
2.	Density of water	Breeding pond (nursery) -0.9-1.5 m Rearing pond -1.2-2.0 m Stocking pond - 1.5-2.5 m	In stocking pond density of water should not be less than 1 meter
3.	Temperature	30-40 cm	If transparency level declines at 20cm or below, amount of oxygen declines sharply in the morning. In case transparency level is more than 60 cm, then growth scenario of plankton reduces in the pond.
4.	Dissolved oxygen	5 - 10 mg per liter of water	Less than 3mg per liter is not desirable.
5.	Dissolved carbon-di-oxide	5 -15 mg per liter of water	More than 15 mg per liter causes difficult breathing for fish.
6.	pH	7 - 8.5	Decrease of pH below 6.5 or increase in pH above 9.5 hampers growth of fish.
7.	Total alkalinity	80 - 250 mg per liter of water	If alkalinity is less than 20 milligram per liter of water or more than 300 milligram per liter of water aquaculture will be adversely affected.
No	Parameter	Favourable level	Remarks (Soil)
1.	Temperature	6.5 - 7.5	If pH of soil is less than 5.5 or greater than 8.5 fish production is disturbed. Highly acidic soil is to be treated properly with lime before fish production.
2.	Density of water	6 mg per 100 gram of soil.	100 grams of soil should not contain less than 3 mg of usable phosphorus
3.	Temperature	50-75 mg per 100 gram of soil	Presence of less than 25 mg of usable nitrogen per 100 grams of soil hampers growth of natural feed of plant organisms.

Density of Fish

Species	Size	In case of individual aquaculture, per bigha stocking density	In case of mixed aquaculture, per bigha stocking density
Species like Carp	4 - 5 inches	1750 - 2250	1250 - 1500
Tilapia	1.5 - 2 inches	6500 - 8500	1500 - 2000
Pangasius	4 - 5 inches	4000 - 6500	2000 - 2500

Shrimp Culture

Vannamei Shrimp culture techniques

In comparison to monodon and tiger shrimp, Vannamei has more power to cope with the adverse situation. Vannamei shrimps are one of the mostly used cultured species worldwide bringing success significantly. Not only in saline water area, Vannamei shrimp culture has started in sweet water area on an experimental basis.

Vannamei grows faster than lobster or tiger prawn. It almost doubles in size in a short period of time. Huge production is possible at short period of time. For all these reasons Vannamei shrimp culture has been acquiring more popularity than that of tiger prawn. Vannamei shrimp culture can be continued throughout the year except two months in winter.

Female Vannamei can have maximum 120 gm in size and male Vannamei 60-80 gm. Vannamei preferably is a columnar feeder.

Advantages of Vannamei shrimp culture

1. Grows faster than tiger shrimp.
2. Vannamei tolerates a wide range of salinities, from 0.5 - 45 ppt, which means from almost fresh water to absolutely saline water.
3. Very tolerant of low temperatures down to 15°C.
4. Less aggressive
5. Food intake is high in the evening & at night.
6. It may keep growing up to 20 gm within 100-200 days.

Some noteworthy features related to Vannamei shrimp culture

1. Vannamei is advised to culture in densities like 1.5 to 1.8 meter. So, more Vannamei shrimp can be stocked by increasing density of water.

2. Aerator is a must as number of stocks has been increased. 40-60 PL can be released per square meter.

3. Bank must be prevented from erosion.

4. Excess muck which is sedimented in the fish pond must be removed from the pond bottom after each harvest.

Vannamei shrimp culture farm management Techniques

A. Drying of the pond after the harvest and application of lime.

Deposits should be cleaned from the pond bottom and all parts of the pond should be thoroughly sun dried after the harvest. The dried pond should be left unused for at least 3 weeks. Different methods are used to measure the amount of lime required. Usually, 100-200 kg of lime is used per hectare.

B. Water management.

Direct use of creek water or sea water may cause risk of viral diseases.

The source water collected in the reservoir should be purified with calcium hypochlorite or chlorine. After a week, this water become usable. Vigorously aerate reservoir at least 48 hours for de-chlorination to remove residual chlorine.

C. Fertilization of the pond.

The aim of fertilization is to achieve a healthy bloom of plankton in ponds applying urea and super phosphate together. 40 to10 kg urea/ hectare and 10 to 4 kg triple super phosphate should be applied on a weekly basis. In case of organic farming use of chemical fertilizer should be minimum.

D. Stocking of shrimp fry.

Shrimp fry should not be released in the pond directly. Plastic bags containing the shrimp fry are allowed to float in the pond. Gradually container water should be mixed with water from the pond. This method is called acclimation. This is an important necessity. Shrimp fry at the rate of 40 to 60 number/per square meter should be released.

E. Feed management.

Main advantage of Vannamel shrimp culture is that they can be offered food containing less protein (35%). Protein acquired from marine source (for example dried sea fish or shrimp) will be more effective than protein got from plant source. Required lipid level is 6-8% which must contain unsaturated fatty acid of marine organisms 0.25 to 0.4% cholesterol. Initially Recommended Feeding Rate for Shrimp is 12.6% of Body Weight. Later, with increase in 15% body weight, feed rate should be decreased by 2%. If the shrimp weighs 20gm, only 2.5% of body weight feed rate is recommended. Rate of feeding should be increased in the evening and at night. Feed may be given on trays to reduce wastage. FCR should be between 1.2 and 1.4.

F. Water Quality Management.

Regular observation of water quality parameter is an extreme necessity. Water quality parameters like temperature, salinity, pH, alkalinity should be checked on a regular basis. Level of dissolved oxygen in water should be recorded at least two times daily. Other features like ammonia, nitrite, calcium, magnesium should be observed on a weekly basis. Level of oxygen should be kept above 4 PPM and system of aerators should be arranged.

Wate quality parameters	Mean (SE)	Range
Water temperature (°C)	30.42 (0.35)	27.0-32.5
pH	7.38 (0.07)	6.88-7.80
Dissolved oxygen (mg/l)	7.37 (0.13)	6.5-8.2
Salinity (%)	26.9 (0.5)	22.9-30.2
Total ammonia-N (mg/l)	0.694 (0.080)	0.283-1.714
Nitrite-N (mg/l)	0.006 (0.002)	0.001-0.0031
Nitrate-N (mg/l)	0.036 (0.021)	0.002-0.213
Phosphate-P (mg/l)	0.151 (0.050)	0.038-0.921
Silicate-Si (mg/l)	0.019 (0.009)	0.005-0.033

G. Self- management of shrimp.

Weekly observation of shrimp is a must for growth and well being of shrimp. After 30 days Vannamei shrimps generally grows 0.2 gm/day. Weekly growth rate lies between 1.5 gram to 2.0 gram based on stocking density. If Shrimps are released at the rate of 60 number per square meter, their weight becomes 20 gram within 100-120 days. Vannamei shrimp is a columnar feeder and so maximum stock can be fished with the help of nets. Rest of shrimps should be collected extracting water. Vannamei shrimps become colourless compared to monodon shrimp or tiger shrimp. Therefore, as soon as they have been caught, they should be stored in ice.

Method of using supplements and medicines of Valueman Organic® for preparation of ponds.

1. Preparation of the pond: Deposits should be cleaned from the pond bottom and 100-250kg lime should be applied after drying.

2. Water management: Day-1, at the first day of water release, **Cure Aquatic** should be added at the rate of 800- 1000ml per acre for water sanitization.

3. Application of fertilizer: Day-3, 10 kg **Aqua Soil Value** per acre should be applied. **Day-4,** Use 1 Ltr of **Aqua Grow Value**, which is next to be continued 3-4 litre per month. Day 4 also required to use 10 kg **Value Min** /Acre

4. Stocking of hatchlings: Day-7, Release shrimp hatchlings in water considering the factors like pH of water, alkalinity, temperature and growth of plankton.

5. Feed and environment management: Day-8, 1gm **Value G** should be added with 1 kg feed for a long period of 90 days. To add **Value G**, addition of a high- quality binder named, **Valuebind** is required to use with it. Simultaneously, to keep the aquatic environment favourable, **Aqua Shield Pro** is to be provided in water in the following manner.

0 - 50 days - 1.25kg/hectare at a regular interval of 10 days.

50 - 90 days - 1.25kg/hectare per week.

Besides, **Aqua Shield** is a shrimp growth booster and helps increasing its body weight fast.

6. Health Management of Shrimp: Valuemass is to be used with per day feed at the rate of 2-3gm/kg from the first day of using pellet feed up to harvest.

7. Dissolved Oxygen Management in Aquaculture: Proper amount of dissolved oxygen should be maintained in shrimp culture. To compensate deficit of dissolved oxygen, **Insta -Ox** should be applied at the rate of 1kg/acre.

SHRIMP FEEDING CHART

Parameter	Feed Code 0 Dust	Feed Code 1 Crumble	Feed Code 2 Crumble	Feed Code 3 Pellet	Fee Code 3P Pellet	Feed Code 3S Pellet	Feed Code 3L Pellet
C. Protein (Max)	36%	36%	36%	36%	36%	36%	36%
Dai Size Diameter	0 mm	0.5 mm	0.7 mm	1 mm	1.5 mm	2 mm	2.2 mm
Feeding Days	0→10	10→20	20→40	40→65	60→85	80→105	100→
Shrimp Size(g)	.02→0.2	0.2→1.0	1.0→3.0	3.0→8.0	8.0→15	15→20	20→
Feeding Ratio(%)	Full Feed	Full Feed	15→7	7→4	4→3	3→2.5	2.5→2.0
Feeding Frequency	3 to 4 times/day	3 to 4 times/day	3 to 4 times/day	4 to 5 times/day	4 to 5 times/day	4 to 5 times/day	4 to 5 times/day

Analysis of Valueman Aqua Shrimp Feed nutrition

Product name	Size	Protein % minimum	Crude fat % minimum	Moisture % maximum
Aqua Shrimp Feed	0.5 mm	36	5	11
Aqua Shrimp Feed	0.7 mm	36	5	11
Aqua Shrimp Feed	1.5 mm	36	5	11
Aqua Shrimp Feed	2 mm	36	5	11
Aqua Shrimp Feed	2.2 mm	36	5	11

Diverse diseases and therapeutic treatment of Vannamei Shrimp

Seven diseases found among them are White Spot Syndrome Disease (WSSD), Black-gill disease (BGD), Running Mortality Syndrome (RMS), Loose Shell Syndrome (LSS), White faecal Syndrome (WFS), White Muscle Disease (WMD), Infectious Hypo-dermal and Hematopoietic Necrosis (IHHN). Farms with proper health management and sufficient amount of dissolved oxygen are usually free from diseases. WSSD disease is spread by the crabs. Problem of crabs can be solved fencing the pond by nets. Specific pathogen-free larvae or larvae produced from S.P.F stock do not spread diseases caused by IHHN virus. Black-gill disease BGD is caused by poor quality of pond water. RMS was a new syndrome which was found at Nellore District in South India and later on hepatopancreas makes the shrimps red-yellow. LSS infection is caused by mineral deficiency and degradation of water quality. WFS infection is caused by groups of protozoa and innumerable bacteria. Vannamei shrimps should be collected from the registered hatcheries by the farmers. Canal water should be purified before draining into shrimp culture pond. Diseases reduce to a considerable amount when shrimp farmers keep a continuous check on their pond water quality.

USE OF SUPPLEMENTARY PRODUCTS IN VANNAMEI CULTURE

Sl No.	Product	Usefulness
1.	Aqua Shield Pro	Soil + Ammonia Removal + Water Probiotic
2.	Value Min	Mineral Mixture for Plankton Growth
3.	Value G	Gut Probiotic
4.	Valuebind	Binder with added natural attractant
5.	Valuemass	Growth Promoter & Immune Modulator (Disease Healer)
6.	Aqua Shield	Immunity Developer and Stress Reliever
7.	Cure Aquatic	Broad Spectrum Sanitizer
8.	Aqua Grow Value	Improvement of Aquatic condition - pH, DO, Plankton
9.	Aqua Soil Value	Aquatic Soil enricher
10.	Insta-OX	Instant solution for Dissolved Oxygen

VALUEMAN®

Valueman Organic Agritech (P) Ltd.

59C Tiljala Road Kolkata 700046 Bamunari Delhi Road Dankuni Hoogly 712250

+91 93306 16123 +91 80176 16123 support@valueman.in valuemanorganic.com

R & D Partner : Dept. of Fishery Sciences