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Study the culture process of freshwater prawn

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Abstract
The freshwater prawn (*Macrobrachium rosenbergii*) is considered one of the vital aquaculture species in India. It's far suitable for cultivation in tropical and subtropical climates. It has numerous appealing features such as fast growth rate, suitabile for composite culture, and high market rate. It is a native species of India. *Macrobrachium rosenbergii* cultivation can be done in earthen ponds and cement tanks. The cultivation of *Macrobrachium rosenbergii* plays a crucial role in the Indian economy.

Keywords: *Macrobrachium rosenbergii*, cultivation, India

Introduction
Macrobrachium rosenbergii is the World's largest freshwater prawn, growing up to 31 cm in length. Due to its rapid growth, attractive size, and good meat quality, this species is very suitable for single farming or multiple farming with fish in freshwater pond systems. Large-scale cultivation of *Macrobrachium rosenbergii* is very popular in India. It is in high demand in domestic and foreign markets. It is mainly distributed in the Indo-West Pacific region including India, Vietnam, Philippines, New Guinea, and Northern Australia. Currently, the cultivation of *Macrobrachium rosenbergii* is well developed Worldwide and in some Asian countries including India. This species is widely accepted for both plant and animal diets, and its growth performance depends on water quality, stocking density, and feeding system. The viability of the culture system increases production in many ways. Like other animals, *Macrobrachium rosenbergii* also requires proteins, lipids, carbohydrates, vitamins, and minerals for its growth, so a suitable feed composition and optimal culture production can ensure sustainable growth and survival rates. The cultivation of *Macrobrachium rosenbergii* in paddy fields or lowlands is widespread throughout India.

Culture process
Site selection
Researching potential markets for a product and carefully choosing suitable sites for farming, whether in the larval or brood stage is essential for successful breeding. The main purpose of pond preparation is to provide a good rearing environment for prawns and optimal conditions for their growth and survival to ensure successful prawn farming. Improper pond preparation will not affect the soil during cultivation, creating nutrients and toxic compounds that can stress prawns and other environmental strategies. The pond water should be completely drained. This will help remove disease-carrying fish and crustaceans from previous harvests in the pond.

Remove bottom sludge
Entries from the previous group can overload the organic sediments and causes pond bottom degradation. Sludge releases toxic gases such as ammonia and hydrogen sulfide into ponds, causing stress and death to prawn. Large ponds accumulating at the bottom of the pond should be removed before the next harvest.

Plowing the bottom of the pond
Plowing the soil reveals black soil. Drying helps organic matter oxidize, reducing the risk of parasites and microbes from previous harvest.

Liming
Optimizes soil and water pH and cleanliness. The amount of lime applied during pond preparation depends on the pH of the soil.

Water intake and preparation
Water screening
Water screening is very important to prevent disease transmission. The pond should be filled with water using a double layer of 60 hides/square inch mesh at the water entry point.

Disinfection
Pesticides cannot be used to kill unwanted fish or disease carriers in ponds. 60 ppm (600 kg/ha) of bleaching powder should be used at 1.0 m water depth to kill unwanted fish and crayfish in ponds. 200 kg/ha of organic fertilizer such as dolomite after treatment with bleaching powder for 7 days. Plankton growth is essential for prawn farming, covering the bottom of ponds, preventing benthic algae growth, and creating a low-stress, dark environment for prawns.

Water quality management
Ponds must be properly maintained during the management period. Special attention should be paid to the prevention and treatment of cracks on the bank of the pond and the structure of the water inlet and outlet, especially the maintenance of the filter. Water must be properly treated for use. If the pH is above 8.5, fermentation broth should be used to lower the pH. Quicklime should be used after water changes and after rain. Lime should be mixed with water and the pH measured throughout the pond. Monitoring and control of salinity, pH, Dissolved Oxygen, and microbial load should be performed regularly.

Seed selection and stocking process
Selection and storage of good quality seeds in ponds are very important. Seeds always swim against the current for better seed quality control. Prawn seeds should be quality-checked before packing. They must pass the salt exposure test and officially exceed the quality of at least. The raw water and salinity of the pond where the seed is stored should be tested before seeding the pond. If the salinity of the raw water is different, the pond water should be added slowly to the seed pods to match the salinity of the pond water. After acclimatization, seeds should be sown in aerated ponds.

Feed management
There may understand actual general recommendations for everyday feeding charges because those rely on the length and numbers of the prawns and within the pond, the water first-rate, and the nature of the feed. Some farmers begin feeding rates very high in the beginning. If juveniles are stocked the fee might be 20- 10% of frame weight (relying on the juvenile size) and it could decline steadily to approximately 2% by way of harvest time.

Aeration
Aeration is the most important part of prawn culture. By aeration, the Dissolved Oxygen is increased in water. Prawns require Dissolved Oxygen for growth and metabolism.

Pond bottom management
The deteriorated condition of the pond bottom without delay affects the prawns. Removal of black and toxic bottom sediments is crucial to preserve a healthy environment. Check the feeding area on a weekly basis, mainly for black soil, benthic algae, and foul odor. Care should always be taken not to allow residual food to settle at the bottom of the pond as this will degrade the soil in no time.

Routine health monitoring
Daily visual inspection of prawns should be done once a week by sampling through casting nets and checking for known health conditions such as external appearance. Be aware of visual inspection of animals such as gill fouling and discoloration, the abnormal coloration of appendages and chromatophores, soft shell prawns, and more. Take notes on pond conditions such as prawn swimming on the pond floor, birds circling overhead, and phytoplankton crashes. If unexpected heavy die-off or small die-off is observed throughout the lime inside the pond, the objective should be looked at carefully. Prawns covered with algae or signs of not currently molting both indicate that culture conditions are negative or that the animals are not healthy.

Harvesting
Prawns can be harvested by draining the water into a saucer in the pond at the end of the drain and collecting the prawn. After that, the prawns are removed with small calves. The catchment area should be about 10 to 15 feet wide and about two-thirds the width of the pond in length. Pond harvest should be completed before morning water temperature reaches 15°C.

Conclusion
Presently the cultivation of *Macrobrachium rosenbergii* is very profitable. Because its meat is very tasty, it is in high demand in domestic and foreign markets. However, some farmers do not want to cultivate prawns due to the prevalence of viral diseases.

References
1. Ahmed N, Demaine H, Muir JF. Freshwater prawn farming in Bangladesh:history, present status and future prospects, Aquacult. Res.,2008:39:806-819.

2. Ahmed N, Garnett ST. Sustainability of freshwater prawn farming in rice fields in southwest Bangladesh, J. Sustain. Agric,2010:34:659-679.
3. D'Abramo LR, Heinen JM, Robinett HR, Collins JS. Production of the freshwater prawn *Macrobrachium rosenbergii* stocked as juveniles at different densities in temperate zone ponds, J. World Aquac. Soc.,1989:20:80-89.
4. D'Abramo LR, Sheen SS. Nutritional requirements, feed formulation and feeding practices for intensive culture of the freshwater prawn, *Macrobrachium rosenbergii*, Rev. Fish. Sci.,1991:2:1-21.
5. Devi P, Sirisha D, Gandhi N. Characterization of prawn ponds in around Bhimabharam, West Godavari district, A. P India, Int. J. Res. Chem. Environ.,2012:2:251-254.
6. Ghosh R, Banerjee K, Homechaudhuri S, Mitra A. Effect of formulated feeds on the growth and water quality of freshwater prawn (*Macrobrachium rosenbergii*) farming: a case study from Gangetic Delta, Livest. Res. Rural Dev.,2010:22(12):1-11.
7. Hasanuzzaman AFM, Rahman MA, Islam SS. Practice and economics of freshwater prawn farming in seasonally saline rice field in Bangladesh, Mesopotamian J. Mar. Sci.,2011:26(1):69-78.
8. Hossain MA, Paul L. Low-cost diet for monoculture of freshwater (*Macrobrachium rosenbergii*) in Bangladesh, Aquacult. Res.,2007:38:232-238.
9. Indulkar ST, Belsare SS, Ranade AM, Raje PC. Culture of giant freshwater prawn *Macrobrachium rosenbergii* with low inputs in Ratnagiri district of Maharashtra, Proc. Zool. Soc. India,2007:6(1):1-s5.
10. Nguyen TH, Yang L, Liu Q, Zhao L, Liu J, Zhang H. Assessment of water quality of giant freshwater prawn (*Macrobrachium rosenbergii*) in culture ponds in Zhejiang of China, Int. J. Fish Aquat. Stud.,2014:2(3):45-55.
11. Paul P, Rahman Md. A. Growth performance of freshwater prawn *Macrobrachium rosenbergii* under different supplemental feeding options, Int. J. Fish Aquat. Stud.,2016:4(2):203-207.
12. Shang YC, Fujimura T. The production economics of the freshwater prawn (*Macrobrachium rosenbergii*) farming in Hawaii, Aquacult.,1977:11: 99-110.
13. Wahab MA, Nahid SAA, Ahmed N, Haque MM, Karim M. Current status and prospects of farming the giant river prawn *Macrobrachium rosenbergii* in Bangladesh, Aquacult. Res.,2012:43:970-983.