



TITLE OF EVENT/ PROGRAMME: **Induced Breeding of *Anabas testudineus***

THEME OF THE EVENT/ PROGRAMME: **Obtaining knowledge on Induced Breeding of *Anabas testudineus***

DATE: **15-06-2024 to 18-06-2024**

VENUE: **Asutosh College, 2nd Campus**

OBJECTIVE/ PURPOSE: The objective of the experimental learning on the induced breeding of *Anabas testudineus* (commonly known as the climbing perch) is to understand and apply techniques to stimulate and manage the reproductive processes of this species under controlled conditions.

SPEAKER/S / RESOURCE PERSON/S: **Under Guidance of Dr. Mukti Chanda Paul**

TARGET AUDIENCE/ PARTICIPANTS: **4th and 6th Semester Students of Industrial Aquaculture and Fisheries (B.Voc.)**

BRIEF REPORT ABOUT THE EVENT/ PROGRAMME:

Introduction

Induced breeding is a crucial technique in aquaculture, enabling the controlled reproduction of fish species under artificial conditions. The climbing perch, *Anabas testudineus*, is a species with significant aquaculture potential due to its hardiness and adaptability. This report summarizes the experimental learning activities conducted to impart practical knowledge and skills in the induced breeding of *Anabas testudineus* to students.

Objectives

1. To understand the biological and environmental requirements for the breeding of *Anabas testudineus*.
2. To learn and apply hormonal induction techniques for stimulating reproduction.
3. To develop skills in handling broodstock, collecting eggs, and managing larvae.
4. To analyse and interpret data on breeding success and larval development.

Methodology

The experimental learning sessions were conducted in several phases, involving both theoretical instruction and hands-on practice:

1. Pre-breeding Preparation:

- **Selection of Broodstock:** Healthy, mature *Anabas testudineus* were selected based on size, age, and condition.
- **Conditioning:** Broodstock were conditioned in tanks with optimal water quality parameters (temperature, pH, and aeration).

2. Hormonal Induction:

- **Hormone Preparation:** Hormones (pituitary gland extract and synthetic hormones) were prepared and dosed according to standard protocols.

- **Injection:** Students practiced administering intramuscular injections to induce ovulation and spermiation.
3. **Breeding Observation:**
 - **Monitoring:** Post-injection, broodstock behavior was monitored to identify spawning activity.
 - **Egg Collection:** Eggs were collected from spawning substrates or directly from the water column.
 4. **Egg Incubation and Larval Rearing:**
 - **Incubation:** Eggs were incubated in controlled conditions, with regular monitoring for hatching success.
 - **Larval Care:** Newly hatched larvae were transferred to rearing tanks and provided with appropriate feed and environmental conditions.
 5. **Data Collection and Analysis:**
 - **Data Recording:** Students recorded data on hormone doses, spawning time, egg count, hatching rates, and larval survival.
 - **Analysis:** The data were analyzed to assess the effectiveness of different induction methods and identify factors influencing breeding success.

Results

The experimental learning sessions yielded the following results:

1. Successful induction of spawning in *Anabas testudineus* using both natural and synthetic hormones.
2. Identification of optimal environmental conditions (e.g., water temperature at 26-28°C) for breeding.
3. High hatching rates (up to 85%) and significant larval survival with proper care and feeding.
4. Enhanced student understanding of induced breeding techniques and practical skills in fish husbandry.

Conclusion

The hands-on experience provided students with a comprehensive understanding of induced breeding techniques for *Anabas testudineus*. The practical skills acquired during the sessions are essential for their future careers in aquaculture and fisheries management. Continuous practice and refinement of these techniques will contribute to the development of efficient and sustainable aquaculture practices.

Recommendations

1. **Further Research:** Encourage students to conduct further research on optimizing breeding protocols and larval rearing techniques.
2. **Field Application:** Promote the application of learned techniques in local aquaculture operations to improve fish production.
3. **Continual Learning:** Provide opportunities for advanced training and workshops to keep students updated with the latest advancements in aquaculture technologies.

EXPECTED OUTCOME:

1. **Comprehensive Understanding of Breeding Biology:**

- Students will gain a thorough understanding of the biological and environmental factors influencing the reproductive cycle of *Anabas testudineus*.
- They will learn how to identify and select suitable broodstock based on physiological indicators.

2. Proficiency in Hormonal Induction Techniques:

- Students will acquire hands-on experience in preparing and administering hormonal treatments (both natural and synthetic) to induce breeding.
- They will become proficient in the techniques of injecting hormones and managing the broodstock post-injection.

3. Enhanced Practical Skills in Fish Husbandry:

- Students will develop practical skills in handling, monitoring, and caring for broodstock, ensuring optimal conditions for breeding.
- They will practice the techniques of egg collection, incubation, and management of larvae, which are critical for successful aquaculture operations.

4. Ability to Monitor and Analyse Breeding Success:

- Students will learn how to systematically record data on breeding activities, including hormone doses, spawning times, egg counts, hatching rates, and larval survival rates.
- They will be able to analyse the data to assess the effectiveness of different induction methods and identify areas for improvement.

5. Knowledge of Optimal Environmental Conditions:

- Students will understand the importance of maintaining optimal water quality parameters (e.g., temperature, pH, aeration) for successful breeding and larval development.
- They will learn to adjust and control these parameters to enhance breeding outcomes.

6. Development of Problem-Solving Skills:

- Students will be equipped to identify and troubleshoot common issues encountered during the induced breeding process, such as low spawning rates or poor egg quality.
- They will develop strategies to overcome these challenges through practical problem-solving and critical thinking.

7. Application of Knowledge in Real-World Scenarios:

- Students will be prepared to apply their knowledge and skills in real-world aquaculture settings, contributing to the development of sustainable breeding programs for *Anabas testudineus*.
- They will be capable of designing and implementing breeding protocols in commercial aquaculture operations.

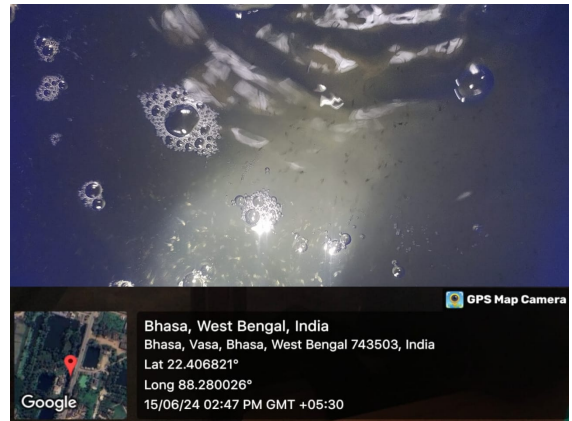
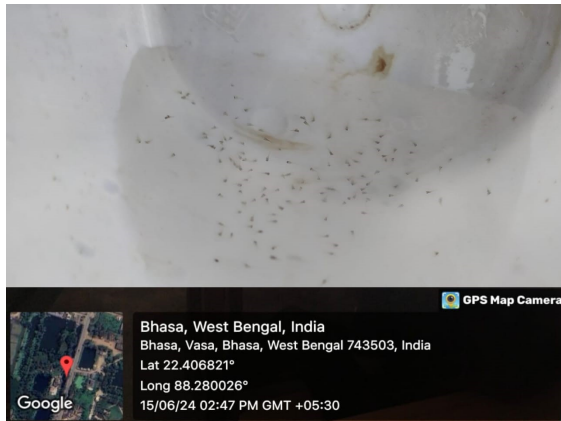
8. Preparation for Advanced Studies and Careers:

- The experimental learning experience will prepare students for advanced studies in aquaculture and related fields.
- They will gain a competitive edge for careers in aquaculture, fisheries management, and fish breeding research.

ATTENDANCE SHEET: Yes

NAME	SIGNATURE
Purnima Ghosh	Purnima Ghosh
Payel Hazra	Payel Hazra
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Misra Asif Iqbal	Misra Asif Iqbal
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