Department of Zoology - 2017-18 GUEST LECTURES

ANIMAL CELL CULTURE 17.08.17

Class: III B. Sc. BZC

Name and Designation of the Resource person:Mr. R. Praveen Dathu, Asst. Professor in Zoology, L H.R. Degree College, Mylavaram

Objectives: The objective of the Guest Lecture is to provide information to the students about **Animal Cell** Culture. It is the process by which humans, animal or insect cells are grown in a favorable artificial environment. The cells may be derived from multicellular eukaryotes, already established cell lines or established cell strains

Report on the guest lecture:

Mr. R. Praveen Dathu explained in detail about Cell culture media, types of cell cultures, Hybridoma technology and Stem cell technology etc. Students gained knowledge about Animal Cell culture and had practical experience.

Cell culture media is a growth medium or culture medium designed to support the growth of cells or microorganisms. Cell culture is classified into three: types i) Primary cell culture ii) Secondary cell culture and iii) Cell lines.

He also explained aboutHybridoma technology which is one of the most common methods used to produce monoclonal antibodies. In this process, antibody-producing B lymphocytes are isolated from mice. After immunizing the mice with specific antigen, they are fused with immortal myeloma cell lines to form hybrid cells, called hybridoma cell lines.

Outcome: The studentsunderstood about Animal cell culture that can be used to produce many important products like vaccines, antibodies and other protein products.



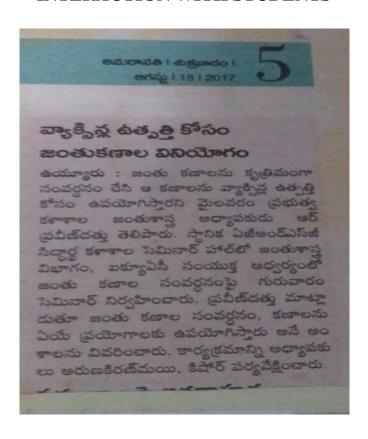
WELCOMING R. PRAVEEN DATTU



STUDENTS LISTENING TO GUEST LECTURE



INTERACTION WITH STUDENTS



PAPER CLIPPING

GUEST LECTURE 2017-18 Diversification of Aquaculture 07.02.18

Class: III B.Sc BZC

Name and Designation of the Resource person: Mr.B. Appala Naidu, Asst.

Project Manager RGCA, Manikonda

Objectives:

• To enhance the health and well-being of the people through the production of nutritious food and the development of productive and secure livelihoods;

• To stimulate more economic activities in rural communities, create more rural employment opportunities.

Report on the guest lecture:

Mr.B.Appala Naidu, Asst. Project Manager RGCA, Manikonda explained about different types of fish cultures, culture systems and design of pond constructions

He first explained about the types of fish cultureswhich is classified based on the number of fish species as monoculture and polyculture.1) **Monoculture:** This is the culture of single species of fish in a pond or tank. The culture of trout, tilapia, catfish, and carps are typical examples of monoculture. 2)**Polyculture:** Polyculture is the practice of culturing more than one species of aquatic organism in the same pond. Success of polyculture depends on **synergism** and available food.

He gave a brief report on Culture systems basing on their salinity (a) Freshwater farming is farming of aquatic animals and plants in zero saline water (b) Brackish water farming- a mixture of seawater and freshwater with a salinity < 30ppt. Estuaries, backwaters, creeks and mangrove waterways are brackish in nature (c) Marine water farming of aquatic animals and plants in sea water.

He also gave information abouta) Extensive fish farming system: Least managed form of farming system. Large ponds ranging 1 to 5 ha in area are used for this type of farming. b) Semi-intensive fish farming system that involves rather small ponds (0.5 to 1 hectare in area). The stocking density in these ponds is 10,000 to 15,000 fish/ha, c) Intensive fish farming system which is well-managed form of fish farming.

He discussed that the following sequences of operations to be carried out in the process of construction. • Survey of the site • Land clearing • Land making • Excavation • Construction of drainage system • Construction of dykes and sluices • Lining of the embankments/ dykes • Hatcheries and other units • Office lab,

3. Outcome: Students have gained knowledge on types of fish cultures, culture systems and systems based on intensity of stocking and its economic importance.

Students Interaction with Sri. B. Appala Naidu Asst. Project Manager RGCA, Manikonda







GUEST LECTURES 2018-2019

SUSTAINABLE AQUACULTURE

03.12.18

Class: III B.Sc BZC

Name and Designation of the Resource person: Mr.B.Appala Naidu, Asst. Project Manager RGCA, Manikonda

Objectives:

To maximize sustainable biomass yield and economic yield.

To secure and increase employment.

Report on the guest lecture

Mr.B. Appala Naidu, Asst. Project Manager RGA, Manikonda explained aboutSustainable aquaculture. It can be defined as the aquaculture practice which focuses on environmental, economic, and social sustainability to improve capacity building and utilize land effectively for the aquaculture sector.

Environmental sustainability- Aquaculture practice should be eco-friendly. It should not impose any significant disruption to biodiversity.

Economic sustainability -The aquaculture practice should be profitable with good long-term prospects.

Social sustainability- Aquaculture practice must be socially responsible and contribute to the wellbeing of the local community.

Outcome: Students have gained knowledge in development of existing water bodies and creation of additional water area for large scale fish production





Welcoming the Resource person

Students Listening to Guest Lecture



Students Interacting with the Resource Person

GUEST LECTURE 2018-19

r-DNA Technology

05-12-2018

Class: III B. Sc. BZC

Name and Designation of the Resourceperson:Smt. Dr.L.Susheela, Professor in Biotechnology, Krishna University, Machilipatnam

Objectives: To understand aboutRecombinant DNA technology using enzymes and various laboratory techniques to manipulate and isolate DNA segments of interest.

Report on the guest lecture:

Smt.Dr.L.Susheela, Professor in Biotechnology, Krishna University, Machilipatnam explained the Scope of r- DNA Technology, Vectors and Restriction Endo nucleases etc.

Recombinant DNA technology comprises altering genetic material outside an organism to obtain enhanced and desired characteristics in living organisms or as their products. This Recombinant technology involves the insertion of DNA fragments from a variety of sources, having a desirable gene sequence via appropriate vector

She explained aboutvectors stating that it is an area of DNA that can join another DNA part without losing the limit for self-replication. She gave information on features of cloning vectors: such as small size, convenient for easy isolation, handling & transmembrane transport.

- Ability for autonomous replication
- Presence of replication
- Unique target size or restriction site
- Presence of cutting site & recognition site outside the replication for restriction. cleavage at the cutting site produces a gap, called cloning site, for the splicing of the donor DNA fragment.
- Presence of marker gene
- Absence of transfer genes and mobilizing genes

Restriction Endo nucleases:Restriction enzymes are also called "MS Secular Scissors" as they cleave DNA at or near specific recognition sequences known as restriction sites. These enzymes make one incision on each of the two strands of DNA and are also called restriction endonucleases.

3.Outcome: Students gained the knowledge about r-DNA Technology and had practical experience. Theyunderstood that this method can be used to combine (or splice) DNA from different species or to create genes with new functions



Dr.L.Susheela, Professor in Biotechnology interacting with students



Students Listening to Guest Lecture

GUEST LECTURE 2018-19 ORGANIC FARMING

06.12.18

Class: IIB.Sc BZC

Name and Designation of the Resource person: Sri. S.Krishna Suman Best organic farmer, Yakamuru.

Objectives: To learn on improved soil structure, a season-long supply of nutrients, and an increased water-holding capacity and some of the benefits of using organic fertilizers

Report on the guest lecture:

Sri. S.Krishna SumanYakamuru explained to the students about soil-building mechanisms to keep soil alive. Keeping soil alive is the primary concern of organic farming. Hence in Organic Farming, soil and not the crop are fed. It is conversion of soil from non-living to living.

He threw light that plants can absorb nutrients only in the form of minerals irrespective of the source of manure. Organic Farming seeks to avoid direct use of readily soluble chemicals like Muriate of potash. It is a natural rock and is not permitted because it is readily soluble.

Out come: The students understood about Organic farm produce is generally of healthier size, taste, and quality.





Sri. S.Krishna Suman being facilitated by the Zoology & Botany Faculty

GUEST LECTURE 2019-20 IMPORTANCEOF AQUACULTURE 09.08.19

Class: I B.Sc. CBZ

Name and Designation of the Resource person: Mr.B.Appala Naidu, Asst. Project Manager RGCA, Manikonda

Objectives:

- Production of low-cost protein rich, nutritive and easily digestible human food.
- Providing new species and strengthening stocks of existing fish in natural and man-made water-bodies through artificial recruitment

Report on the guest lecture: AMr.B.Appala Naidu, Asst. Project Manager RGA, Manikonda explained aboutImportance of Aquaculture. He defined it as the breeding, growing, and harvesting of fish and other aquatic plants, also known as farming in water. It is an environmental source of food and commercial product which help to improve healthier habitats and used to reconstruct population of endangered aquatic species. Aquaculture is also one of the world's most efficient and sustainable methods to produce high-quality protein.

Outcome: Students have gained knowledge on the breeding, growing, and harvesting of fish and other aquatic plants,



Mr.B.Appala Naidu, Asst. Project Manager RGCA, Manikonda enlightening students on Importance of Aquaculture and being felicitated by Zoology staff



Dr. D. Balakrishna, Principal with the Resource Person



Mr.B.Appala Naidu furnishing information on aquaculture

GUEST LECTURE 2020 - 2021 DIVERSIFICATION OF MUD CRABS 09.03.21

Class: I B.Sc. CBZ& I ABC

Name and Designation of the Resource person: Mr.B.Appala Naidu, Asst. Project Manager RGCA, Manikonda

OBJECTIVES: - To develop technologies for large scale seed production of mangrove mud crab (Scylla serrata)

REPORT ON THE GUEST LECTURE: AMr.B. Appala Naidu, Asst. Project Manager RGA, Manikonda explained about Mud crab culture. He described the advantages of mud crab culture. He explained about rehabilitation of fisheries, use of abandoned shrimp ponds for crab culture and supply of prescribed product (e.g. size, sex, maturity stages soft shelled crabs) specifically catering to consumer demand. He also explained the biology of Scylla serrata.

OUTCOME: - Students have gained knowledge on the development of larval and nursery rearing technologies of mud crabs.



Interaction of Resource Person with students

Felicitation to Resource Person



Students listening to Guest Lecture



GUEST LECTURE 2021 - 2022 DIVERSIFICATION OF AQUACULTURE 12.02.22

- 1. Class: I B.Sc. CBZ& I ABC
- 2. Name and Designation of the Resource person: Mr.B.Appala NaiduPrinicipal Scientist RGCA, , RGCA, Manikonda

Objectives:

- To enhance the health and well-being of the people through the production of nutritious food and the development of productive and secure livelihoods.
- To stimulate more economic activities in rural communities, create more rural employment opportunities.

Report on the guest lecture:

Mr.B. Appala Naidu, Asst. Project Manager RGCA, Manikonda explained about different types of fish cultures, culture systems and design of pond constructions.

He first explained about the types of fish cultureswhich is classified based on the number of fish species as monoculture and polyculture.1) **Monoculture:** This is the culture of single species of fish in a pond or tank. The culture of trout, tilapia, catfish, and carps are typical examples of monoculture. 2)**Polyculture:** Polyculture is the practice of culturing more than one species of aquatic organism in the same pond. Success of polyculture depends on **synergism** and available food.

He gave a brief report on Culture systems basing on their salinity (a) Freshwater farming is of aquatic animals and plants in zero saline water (b) Brackish water farming-a mixture of seawater and freshwater with a salinity < 30ppt. Estuaries, backwaters, creeks and mangrove waterways are brackish in nature (c) Marine water farming of aquatic animals and plants in sea water.

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He discussed that the following sequences of operations to be carried out in the process of construction.

- Survey of the site
- Land clearing
- Land making
- Excavation
- Construction of drainage system

- Construction of dykes and sluices
- Lining of the embankments/ dykes
- Hatcheries and other units Office lab,
- **3. Outcome:** Students have gained knowledge on types of fish cultures, culture systems and systems based on intensity of stocking and its economic importance.



Resource person Interacting with students and being felicitated



Resource person Interacting with students



GUEST LECTURE 2021 – 2022 AQUATIC MICROBIOLOGY 22.02.22

Class:III B.Sc. ABC

Name and Designation of the Resourceperson:Sri Ch.Chiranjeevi, Microbiology Research scholar ANU,Guntur Alumni of AG & SG Siddhartha College Vuyyuru

1.Objectives: To know about the vital role of aquatic microorganisms in the cycling of nutrients within their environment,

To gain Knowledge on their crucial part of the food chain/web. Many microorganisms obtain their nutrition by breaking down organic matter in dead plants and animals

- 2. **Report on the guest lecture:** Sri. Ch.Chiranjeevi, Microbiology research scholar ANU, Guntur. explained to the students about Aquatic microbiology It is the study of microorganisms and their activities in fresh, estuarine, and marine waters, including springs, lakes, rivers, bays, and seas.
 - 3. He discussed that impact of Microbes on the shrimp industry.

Positive impact:

- 1. Microbial flocs probiotic influence shrimp microbiomes.
- 2. Alternative aquaculture feed
- 3. Production of beneficial micronutrients
- 4. Production of digestive enzymes
- 5. Sustaining ecological balance

Negative impact:

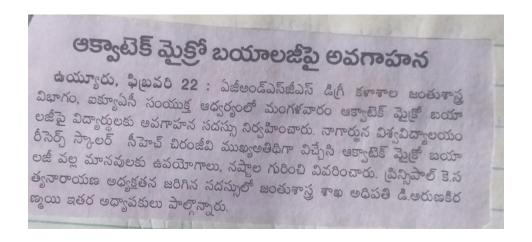
- Inhibition of pathogenic or spoilage micro-organisms by beneficial bacteria in the food chain.
- 2. Infectious disease that decrease aquaculture yield and reduce product quality.
- 3. Decrease in the water quality in the ponds
- **3.Outcome:**Students gained knowledge about the Microbial flocs, probiotic influence on shrimp microbiomes and Sustaining ecological balance



Sri Ch. Chiranjeevi, Microbiology Research scholar ANU interacting with students



Zoology staff felicitating Ch. Chiranjeevi



GUEST LECTURE 2022- 2023 Culture of Leto Penaeusvannamie 06.12.22

Class:III B.Sc ABC

Name and Designation of the Resource person: Sri.G.Sunil Kumar, Growel Feed Pvt. Ltd.Gudivada

Objectives: Toknowthe life cycle of Letopenaeusvannamie and identification of Post larval stages.

Report on the guest lecture: Sri.G. Sunil Kumar, Growel Feed Pvt. Ltd. Gudivad explained to the students about Culture of L. Venbamei-production system: Seed supply, Brood stock maturation ,spawning and hatchery ,Hatchery production , Nursery ,Outgrowing techniques , Feed supply ,Harvesting techniques ,Handling & processing ,production cost and Diseases and control measures.

He explained clearly about the entire life cycle of L. Vannamei

He brought different post larval stages of L.Vennamie and demonstrated how the identify the 11 stages of Post larvae. This is done by counting the number of spines on the rostrum of L Vennamei. He also brought different types of feed provided to the larval stages of L.vennameia and gave a detailed description to the students about their composition and utilization. He ended the guest lecture that culturing of L.vennamei at present and in future is economically beneficial to all the aqua farmers.

Outcome: Students gained practical experience in identifying the post larval stages as it is very crucial in the life cycle of L.Vennamei.

Theygainedknowledgeonthefeedrequirements of different stages of Post larvae of L. Vennamei.



Ayesha, Student of IIIABC, welcoming Sri. G. Sunil Kumar



Students listening to Guest Lecture



Zoology & Botany Faculty with Resource Person

GUEST LECTURE 2022– 2023 Career Guidance in Aqua Field13.12.22

Class: I B.Sc. ABC II ABC& II BZC

Name and Designation of the Resource person:Sri Dr. T.Chandra Shekar Yogi VemanaUniversity, Kadapa

Report on the guest lecture:

Objectives:

- To know about the career opportunities in the Aqua field
- To improve their knowledge practically in aqua field

Report on lecture:

Dr T.Chandra Sekhar, Asst.Professor in Yogi Yemana University enlighten the students on the career opportunities for B.Sc.BZC And Aqua students.He started with the various books that has to referred to gain knowledge in the field of Zoology and aquaculture.He advised the students to go through the online tests conducted by different companies. He inspired them by giving the different areas of job opportunities to both BZC and Aquaculture students.He gave suggestions on the preparation for exams conducted by Government and non - Government agencies.

Outcome: Students interacted with Dr.Chandra Sekhar and found solutions to their querries about placements and higher education in the fields of Biology and Aquaculture.



Dr. V. Subhashini welcoming the resource person and D.A KiranmayeeintroducingDr.T.Chandra Shekar Yogi Vemana University ,



Students interacting with resourcePerson

Zoology staff with Resource Person

GUEST LECTURE 2022-2023

Career Guidance inBiotechnology 30.1.23

Class: I B.Sc. ABC, II ABC, III BZC

Name and Designation of the Resource person: Sri Dr.P. Veer Bramhachari Senior faculty & Head Department of Biotechnology Krishna University Machilipatnam.

Objectives:

To gain knowledge on the future placementchances in Bio-Technology by studying PG and doing Research

Report on lecture:

Dr. P. Veera BramhaChari of Krishna University first enlighten the students on the basics of Bio- Technology, how it is raising in the present situation and placements in that field.He explained that according to the Biotechnology Industry Organization, there are more than 250 biotechnology products available; including medicines, vaccines, fertilizers, pest-resistant crops, bio-fuels and bio-defense products. Some specific bio-tech products include an anthrax detection device, non-browning apples, snake venom antitoxin, insulin, ethanol and Treethanol, which is a fuel made from tree cellulose.

Biotechnology is being used to develop new products and technology to fight diseases, reduce pollution, improve agriculture and manufacture products while creating less pollution and waste.

In the medical field, companies are using biotechnology to develop new drugs more rapidly and efficiently. Biotechnology identifies genes and proteins that are associated with diseases. The companies use the genes as drug targets and diagnostic markers. They screen thousands of compounds to identify effective drugs. They refine the chemicals, check for toxicity, and then move into clinical trials.

He suggested that careers in technology fields are on the rise. Most students who enter technology-related fields have greater chances of job placement upon graduation, and most employers prefer to opt to thesejobs which are of future significance

Outcome:Students learned about the basics of Bio- Technology and the placements in this field.



Students interacting with Dr. P. Veer Bramhachari, Head Department of Biotechnology, Krishna University



Students interacting with Dr. P. Veer Bramhachari