

## **Annual Report of PG Department of Biotechnology (2019-2020)**

### **Objectives of the Department**

- **To provide better opportunity to every one for performing their capacity in knowledge and innovative research to compete with the global**
- **To bring advanced knowledge among youth generations and skills of research oriented work based on theoretical knowledge**
- **To motivate students on handling basic research work along with academic curricula**

### **Memorandum of Understanding (MoU)**

- ✓ Department signed MoU with Centre for Bioscience and Nanoscience Research (CBNR), Coimbatore on 8<sup>th</sup> February 2013 for collaborative research and academic programs (Renewed till 2020).
- ✓ Signed MoU with Synkro Max Biotech, Chennai on 2<sup>nd</sup> November 2013 (Renewed till 2020).
- ✓ Signed MoU with CYTXON BIOSOLUTION Pvt. Ltd., Hubli, Karnataka on 26<sup>th</sup> Feb 2017.
- ✓ MoU with KVK, Regional Research Station (ICAR), Brahmavar, Udupi 2017 onwards
- ✓ MoU with PG Dept. of Chemistry (Organic Chemistry), Alva's College 2017 onwards
- ✓ CPCRI-ICAR, Kasaragod
- ✓ IISc- CES Bangalore
- ✓ MoU with Indian Institute of Horticulture Research, Bangalore

### **Staff members**

Number of Teaching Faculties - **04** (4 with Ph.D., 2 with M. Phil. and 2 with SLET)

Ph. D. Guides – 03, Ph.D. Scholars: 04 (under Mangalore University), Total- 8

Total number of M.Sc. Students - 07+ 21 =28

Results – During 2019 - 100% with 1<sup>st</sup> Rank in Mangalore University

**Achievement/Award:**

PG Biotechnology Dept. received *ACADEMICEXCELLENTAWARD* from IQAC for outstanding performance during 2019-2020.

**Research papers published**

Research articles published by P.G. Department of Biotechnology during June 2018- May 2019: (in International Reviewed Journals): **08**

**Research Centre**

Number of Research Scholars enrolled under Mangalore University: Nil

Number of Research Scholars working for Ph.D.: 03(Bharathiar University), **04**(Mangalore University)

Awarded: **01**

**Ongoing Collaborative research project**

Collaborative project with Nitte Dental College, Deralakatte on Nanotechnology

**Certificate Course –Nano Science and Nanotechnology**

**Students: 43**

**Extension activities**

- ❖ Drinking water quality test
- ❖ Biofertilizer production for Farmer
- ❖ Spawn production and sale

**Guest Lectures**

**Seminar/conference/workshops attended and paper presented by Faculties and Students**

## **National Conference– Paper and Poster presented**

### **Poster Presented - 02 (Students)**

Akshay Shetty, Lavanya B V and Rama Bhat, New Innovations in Biotechnology and Their Applications in *Alumni sponsored National Conference* organized in association with Karnataka State Pollution Control Board, Mangalore on “**Current Advances in Medical and Industrial Biotechnology**” held on 20/02/2020

Jincy P. Sreenivasan, Leela G.R., Role of Calcium Binding Protein and Calcium Signaling in Prokaryotes in *Alumni sponsored National Conference* organized in association with Karnataka State Pollution Control Board, Mangalore on “**Current Advances in Medical and Industrial Biotechnology**” held on 20/02/2020

Nikhila Mohan, M Mridhuna Manoharan, Plausible Models of Flowering Process in Plants – A Review in *Alumni sponsored National Conference* organized in association with Karnataka State Pollution Control Board, Mangalore on “**Current Advances in Medical and Industrial Biotechnology**” held on 20/02/2020

Prajna P.S., Rama Bhat P., Antioxidant Activity and Protective Role of *Loeseneriella arnottiana* against Testis Damage in Hyperglycemia in *Alumni sponsored National Conference* organized in association with Karnataka State Pollution Control Board, Mangalore on “**Current Advances in Medical and Industrial Biotechnology**” held on 20/02/2020

Ramya B.M and Snehal Shaha, DNA Methylation in *Alumni sponsored National Conference* organized in association with Karnataka State Pollution Control Board, Mangalore on “**Current Advances in Medical and Industrial Biotechnology**” held on 20/02/2020

Yashaswini L. and Keerthi B.K., Role of Silicon in Imparting Resistance against Biotic and Abiotic Stress in Plants in *Alumni sponsored National Conference* organized in association with Karnataka State Pollution Control Board, Mangalore on “**Current Advances in Medical and Industrial Biotechnology**” held on 20/02/2020

### **Paper Presented (Staff/RS)**

Arpana, **Rama Bhat P**, Pharmacological Aspects of *Holigarnaspp.*- A Review in *Alumni sponsored National Conference* organized in association with Karnataka State Pollution Control Board, Mangalore on “**Current Advances in Medical and Industrial Biotechnology**” held on 20/02/2020

Bindu C, **Rama Bhat P**, Mahesh Kumar K S., Generation of Polyclonal Antibodies to *Costus speciosus* Phytoconstituents in *Alumni sponsored National Conference* organized in

association with Karnataka State Pollution Control Board, Mangalore on “**Current Advances in Medical and Industrial Biotechnology**” held on 20/02/2020

**Gagana B.** presented an oral paper and won **First prize** in Alumni sponsored one day National Conference in association with KSPCB, Mangalore on “Current Advances in Medical and Industrial Biotechnology” held at Alva’s College, Moodbidri on 20 Feb 2020.

### **Served as Resource person: Dr Rama Bhat P.**

**Invited Speaker and Chaired a Session** in World Congress on Biotechnology 2019”Current Research and innovations in Biotechnology” organized by Biogenesis Health Cluster held at JN Tata Auditorium Bangalore on 28-29 Aug 2019.

**Resource person** in National Symposium “Oushada Parampara” organized by Alva’s Traditional Medicine Archives & Research Centre Sponsored by NMPB, Ministry of Ayush at AAMC, Moodbidri held on 13-14 Sep 2019.

**Resource person** in one-day Farmers training program on Biofertilisers organized to Desi Diploma students of Udupi and Kundapur organized by PG Dept. of Biotechnology on 9<sup>th</sup> January 2020.

**Moderator** of one of the session and **Presented a paper** in Two day International Conference on “Media and climate change action” organized by UG & PG Dept of Journalism and Mass Communications, Alva’s College held at Alva’s College, Moodbidri on 28-29 Feb 2020.

### **Scientific way of Mushroom cultivation 30.06.2020**

One day workshop on Application of microbes in Agriculture on 9.01.2020

### **Seminar/Conferences Organized**

*Alumni sponsored National Conference* organized in association with Karnataka State Pollution Control Board, Mangalore on “**Current Advances in Medical and Industrial Biotechnology**” held on 20/02/2020 at Kuvempu Hall, Vidyagiri, Moodbidri

*Biotechnology Alumni-* Dr. Karthika K, Dr. Kowshik Kukkemane, Ms. Shruthi N. Dr. Sudharshan Prabhu

### **Workshop organized**

One day workshop on Application of microbes in Agriculture on 09.01.2020

### **Work shop / seminar attended**

**Attended** one day National Seminar on ‘Advances in Research & Development’ held at Alva’s Ayurveda Medical College, Moodbidri on 11<sup>th</sup> July 2019.

**Attended** one day Hands on Workshop on “Bee keeping and its management” organized by Dept of PG studies in Applied Zoology on 24<sup>th</sup> Sept 2019.

### **Institution/Industry visit:**

### **Publications**

Deepa PR, Rama Bhat P. and Ravi Rao S 2019. Evaluation of the wound healing properties of methanolic extract of bark of *Samadera indica* Gaertner *in vivo*. *Asian Journal of Pharmaceutical and Clinical Research* **12** (5): 355-358. IF 0.52

Rama Bhat P. and Savitri VH. 2019. Comparative antimicrobial activities of solvent extracts and silver nanoparticles synthesized from seeds of *Areca catechu* L. Chapter 2 In: *Recent Advances in Biological Research* Vol. 2. Pp. 11-22. Book Publisher International, UK. (Elsevier) Print ISBN: 978-93-89246-04-9, eBook ISBN: 978-93-89246-48-3. DOI:10.9734/bpi/rabr/v2

P. Rama Bhat, PG. Laxmi and BS Vernon D’ Silva. 2019. A study on the phytochemical screening, antibacterial activity and silver nanoparticle synthesis from *Ficus racemosa* L. *International Journal of Research in Pharmacy and Chemistry (IJRPC)* **9**(3): 131-141.

Fouzana Nikhath and Rama Bhat P. 2019. Phytochemical studies and antimicrobial activity of *Cheilanthes bicolor* (Roxb.) Griff.ex Fraser Jenkins. *International Journal of Recent Scientific Research* **10**(06): 32366-32369. DOI: 10.24327/IJRSR

Nikita Ghorpade and Rama Bhat P. 2019. Studies on isolation and characterization of calcium carbonate bioprecipitating bacteria. *International Journal of Research in Engineering and Innovation (IJREI)* **3**(5): 110-120. IF 4.782

Sukanya BCV and Bhat PR. 2019. Phytochemical, antimicrobial, antioxidant and immunomodulatory studies of leaf extracts of *Cycleapeltata* (Lam.) Hook. f. & Thomson. *GSC Biological and Pharmaceutical Sciences* **09**(03): 052–063. DOI: <https://doi.org/10.30574/gscbps.2019.9.3.0228>

Bindu C, Rama Bhat P. and Mahesh KM. 2020. Generation of polyclonal antibodies against *Costusspeciosus* (Koen. ex. Retz.) Smith phytoconstituents using peptide conjugated immunogen. *International Journal of Emerging Technologies and Innovative Research (JETIR)* **7**(2): 1093-1096.

Bindu C, Rama Bhat P. and Mahesh KM. 2020. Assessment of cytochrome P- 450 enzyme activity in diabetic rat treated with *Costus speciosus* plant extract. *International Journal of Emerging Technologies and Innovative Research (JETIR)* **7**(2): 355-357.

**Patent:** One Patent Applied.

**Alva's College, Moodbidri**  
**Department of Biotechnology**  
**Report on National Conference 2019**

Department of Biotechnology of Alva's College, Moodbidri have conducted Alumni Sponsored One-day National Conference in association with Karnataka State Pollution Control Board, Mangalore on "Secondary Metabolites and Health Care" on 23rd February 2019 at Sundari Ananda Alva Campus Alva's College, Vidyagiri.

The inauguration programme started with a welcome note by Dr. Rama Bhat P., Convener and Head of the Department of Biotechnology, followed by an inaugural address by the Chief Guest Dr. C. K. K. Nair, Hon. Director of Research, St. Gregorios Dental College and Research Centre, Kothamangalam, Kerala where he mentioned about the importance of secondary metabolites and how important they are for mankind, then the Guest of Honour Mr. S. Jayaprakash Nayak, Senior Scientific Officer Karnataka State Pollution Control Board, Mangalore addressed the gathering. The Chairman of Alva's Education Foundation, Dr. M. Mohan Alva presided over the function. Principal Dr. Kurian spoke about the strength of secondary metabolites and asked us to take up some good projects on it. This is followed by the release of CD of souvenir. Dr. M. Mohan Alva honoured Chief guest and guest of honour as a token of respect and gratitude. The inaugural session was ended with the vote of thanks by Dr. Raghavendra Rao, Associate Professor, Dept. of Biotechnology. The program was compeered by Ms. Ananya S.

The technical sessions were started after the inauguration.

The first speaker Dr. C.K.K. Nair, Hon. Director of Research, St. Gregorios Dental College and Research Centre, Kothamangalam, Kerala, on his keynote address spoke about Bioactive botanicals and secondary metabolites, where he mentioned about various medicinal plants and endemic plants which are capable of producing important secondary metabolites which have high amounts of commercial and industrial importance.

The second speaker Dr. Raghavendra Pralhada Rao, Senior Research Scientist- Discovery Sciences/Cell biology The Himalaya drug company, Bengaluru spoke on Experimental Validation Strategies for evaluation of Biological activities of nutraceuticals and secondary metabolites where he stressed on various drugs manufactured in Himalaya drug company

using secondary metabolites and he also mentioned about the biochemistry and metabolism of secondary metabolites.

The third speaker of the day Mr. Chaitanya Karant from Dept. of Pharmacology, Karwar Institute of Medical Sciences, Karwar, Uttara Kannada spoke regarding Pharmaceutical approach to secondary metabolites where he stressed on pharmacological importance of secondary metabolites and their applications in the pharma industry,

The fourth speaker of the day Mr. Akshara Damle, Founder and Psychologist at Mano Samvaada, Snehashilaa, Gandhi Nagar, Sullia on Secondary metabolites for mental disorders like anxiety and depression where he stressed on mental stress and disabilities which can be controlled and overcome by using some secondary metabolites.

The fifth speaker Dr. Rama Bhat P. Convener and Head of the Department of Biotechnology spoke about enhancement and in vitro production of secondary metabolites and production of them from marine and aquatic organisms where he stressed about secondary metabolites that are produced from marine organisms and their bioactivity.

The event is then preceded with lunch where simultaneous poster presentations were carried out in which there was an active presentation of 20 UG, PG, Faculties from different colleges have participated.

The sixth speaker of the day Dr. Manjunath Joshi, Associate Professor Department of Biotechnology SOLS, Manipal Academy of Higher Education Manipal where he spoke about Metabolomics in health and disease where he mentioned about various omics and how metabolomics plays an important role in human health in which how secondary metabolites are used in improving human health.

The seventh speaker the day Dr. Ravi Mundugaru Lecturer- Pharmacology, Kodagu Institute of Medical Sciences, Madikeri, Karnataka who spoke about plant-based secondary metabolites and its role in human brain functions- where he mentioned about recent trends in pharmacological research.

The eight-speaker of the day Dr. Kiran Shetty Manager- R & D, Cardiovascular Division, Meril Life Sciences, Vapi, Gujarat where he stressed on Role of secondary metabolites in Cardiovascular diseases where he stressed about various reasons for cardiovascular diseases and its preventive measures by using secondary metabolite.

There were 11 oral presentations presented by various faculties, students and research scholars from different colleges which were judged by Dr. Raghavendra Pralhada Rao from Himalaya Drugs and Dr. Shama Rao from KSHEMA, Nitte.

For valedictory the Chief guest was Dr. Raghavendra Pralhada Rao who addressed the gathering and feedback was given by the students who said that conference was highly informative and they could actually absorb the gist of the conference and were ready to take up several projects regarding secondary metabolites followed by speech by Principal Dr. Kurian, who congratulated the department of biotechnology for a successful conference, followed by presentation of memento to Dr. Raghavendra Pralhada Rao as a token of respect and gratitude and conference ended with a vote of thanks and the national anthem.



**ALVA'S COLLEGE, MOOBBIDRI**  
**Department of Biotechnology**  
**In association with Karnataka State Pollution Control Board, Mangalore**  
**Alumni Sponsored National Conference on**  
**“ Secondary Metabolites and Health Care**



**Welcome address by Dr. Rama Bhat P. convener of conference and Coordinator of PG Biotechnology, Alva's College, Moodbidri**



**Inaugural Address by Dr. C. K. K. Nair Hon. Director of Research, St.Gregorios Dental College and Research Centre, Kothamangalam**



**Presidential address by Dr. Kurian, Principal of Alva's College, Moodbidre**



**Facilitation to Dr. C. K. K. Nair by Dr. M. Mohan Alva, Chairman, Alva's Education Foundation.**



**Facilitation to Mr. Rajshekhar B. Puranik by Dr. M. Mohan Alva, Chairman, Alva's Education Foundation.**



**Vote of thanks by Dr. Raghavenra Rao B. Associate Prof. PG Biotechnology, Alva's College, Moodbidri**

Invited speakers delivering the lectures  
**Alumni Sponsored National Conference on “Secondary Metabolites and Health Care”**



**Dr. C. K. K. Nair, Hon. Director of Research, St.Gregorios Dental College and Research Centre, Kothamangalam Kerala**



**Dr. Raghavendra Pralhada Rao, Senior Research Scientist, The Himalaya Drug Company, Bengaluru**



**Mr. Chaithanya Karant, Dept of Pharmacology, Karwar Institute of Medical Sciences, Karwar**



**Ravi Mundugaru M.Sc., PhD, Lecturer, Pharmacology, Kodagu Institute of Medical Sciences, Madikeri**



**Dr. Kiran Shetty, Manager- R&D, Cardiovascular Division, Meril Life Sciences, Vapi, Gujarat**



**Dr. Manjunath Joshi, Associate Prof., Dept of Biotechnology, SOLS, Manipal Academy of Higher Education, Manipal**



**Mr. Akshara Damle, Founder and Psychologist at Mano Samvaada, Snehashilaa, Gandhi Nagar, P O**



**Dr. Rama Bhat P. Coordinator of PG Biotechnology, Alva's College, Moodbidri**

## Glimpses of Valedictory ceremony

### Alumni Sponsored National Conference on “ Secondary Metabolites and Health Care”



Dr. Raghavendra Pralhada Rao, Senior Research Scientist, The Himalaya Drug Company, Ben



K. R. Harshitha, Mangalore University receiving First place in oral presentation presentation



Mrs Usha B, Dept. of Biochemistry of Alva's College receiving second place in oral presenta-



Mrs. S. Shruthi PG, Dept. A, Zoology of Alva's College receiving best poster presentation award



Faylyn .P. Fernandes Khrievono Prajwal Rao, Dept. of Microbiology St.Agnes College receiving best poster presentation award



S.Ananya Sirisha, Lavanya B.V, PG. Dept. Biotechnology of Alva's College receiving best poster presentation award



Rachana, UG Biotechnology, Alva's College, receiving consolation prize in poster presentation



Vote of thanks by Nalina Y of I M.Sc. PG. Biotechnology