

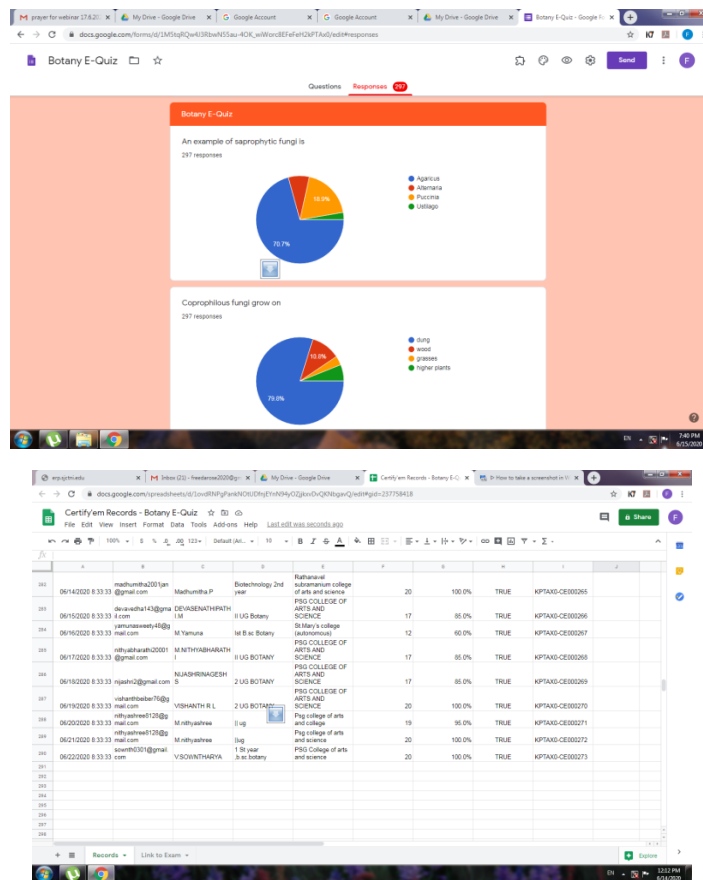
**Holy Cross College (Autonomous), Tiruchirappalli -2**

**PG and Research Department of Botany**

**Botany Club Activities 2020-2021**

**11.06.2020 to 13.06.2020 - Botany E-Quiz Report**

The PG and Research Department of Botany conducted “Botany E- Quiz” for all the botany students through online mode during 11.6.2020 to 13.6.2020. Dr. P. Shanthi, Organizing Secretary & Head, Department of Botany organized the quiz. Dr. A. Freeda Rose, Assistant Professor of Botany was the resource person for the quiz. She prepared questions in Google forms and shared the link to the participants. The quiz questions were prepared using google forms and certificate issued to the participants those who secured the passing score of 40%. 20 questions from basic traditional botany were asked. Very good response from participants and 297 responses received on the three days of the quiz. On a single day 100 students can participate. The certificates are issued immediately to the passed candidates through their registered email by certify'em. The participants were from UG, PG and Research Scholars of Botany and UG Zoology students of Holy Cross College, Tiruchirappalli and other students from various colleges of TamilNadu and other states of India.



## 16.06.2020 - Botany Club Inauguration

Botany Club of Holy Holy Cross College, Trichy was inaugurated for the academic year 2020 – 2021 on 16.06.2020 through Google Meet. The webinar was started at 11.00am with a prayer service. Dr. P. Shanthi, Assistant Professor and Head, PG and Research Department of Botany gave an introductory address. Dr. A. Auxilia and Dr. I. Helen Diana, Assistant Professors of PG and Research Department of Botany, Holy Cross College (Autonomous), Trichy organized the webinar. Dr.N. Komalavalli, Associate Professor and Head, Department of Botany, Alagappa Government Arts College, Karaikudi was the Resource Person. He gave a talk on *In vitro* “Production of Secondary Metabolites”.The Resource person outlined the conventional and non- conventional method of secondary production and clearly explained the various strategies involved for the production of secondary metabolites that includes callus culture, organogenesis, cell suspension culture, hairy root culture. She described the importance of elicitors,

endophytes and nanoparticles for the production of secondary metabolites in an effective way and also explained the various biosynthetic pathways responsible for the production of secondary metabolites. She explained the metabolic engineering, gene manipulation technique, genome engineering and synthetic sgRNA. The session came to an end at 12.45 pm with the vote of thanks.

About 100 participants from our college and from various institutions participated in the webinar. Most of the participants clarified their doubts at the end of the session and they actively posted their queries in the chat box. Most of the participants satisfied with the effectiveness of the presentations and appreciated the organizing team via chat box. Feedback from the participants clearly states, that the webinar was helpful for them to gain new knowledge and awareness on secondary metabolite production through *in vitro* techniques.

  
**PG and Research Department of Botany**  
**Holy Cross College (Autonomous)**  
 Affiliated to Bharathidasan University,  
 Nationally Accredited (4<sup>th</sup> Cycle) with 'A<sup>++</sup>' grade (CGPA 3.75/4) by NAAC,  
 College with Potential for Excellence  
 Tiruchirappalli-620 002, Tamil Nadu.

**Organizes a webinar on**  
**IN VITRO PRODUCTION OF**  
**SECONDARY METABOLITES**

**Resource Person**  
**Dr.N.Komalavalli**  
 Associate Professor and Head  
 Department of Botany,  
 Alagappa Government Arts College,  
 Karaikudi

<p><b>Felicitation</b>  <b>Dr (Sr) Christina Bridget</b>          Principal          Holy Cross College (Autonomous)          Tiruchirappalli</p>	<p><b>Organizing Secretary and Head</b>  <b>Dr.P.Shanthi</b>          PG and Research Department of Botany          Holy Cross College (Autonomous)          Tiruchirappalli</p>
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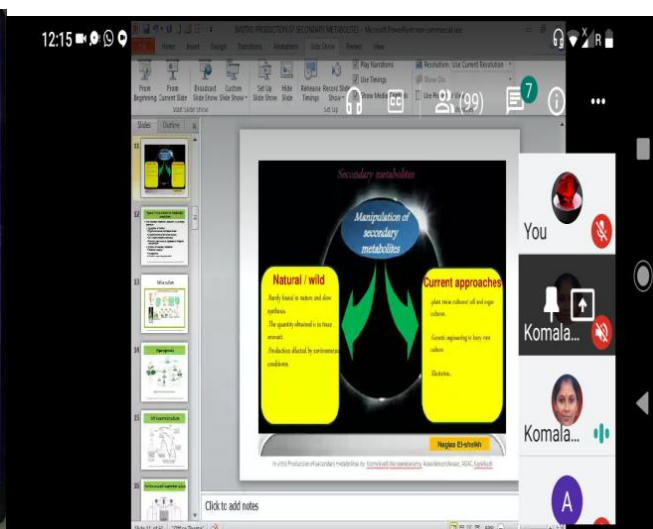
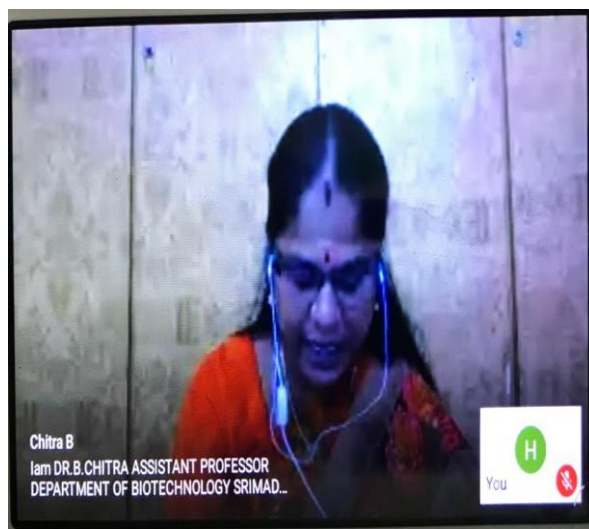
**Organizing Committee Members**  
**Dr.I.Helen Diana,**  
 Assistant Professor of Botany  
 99653 61487

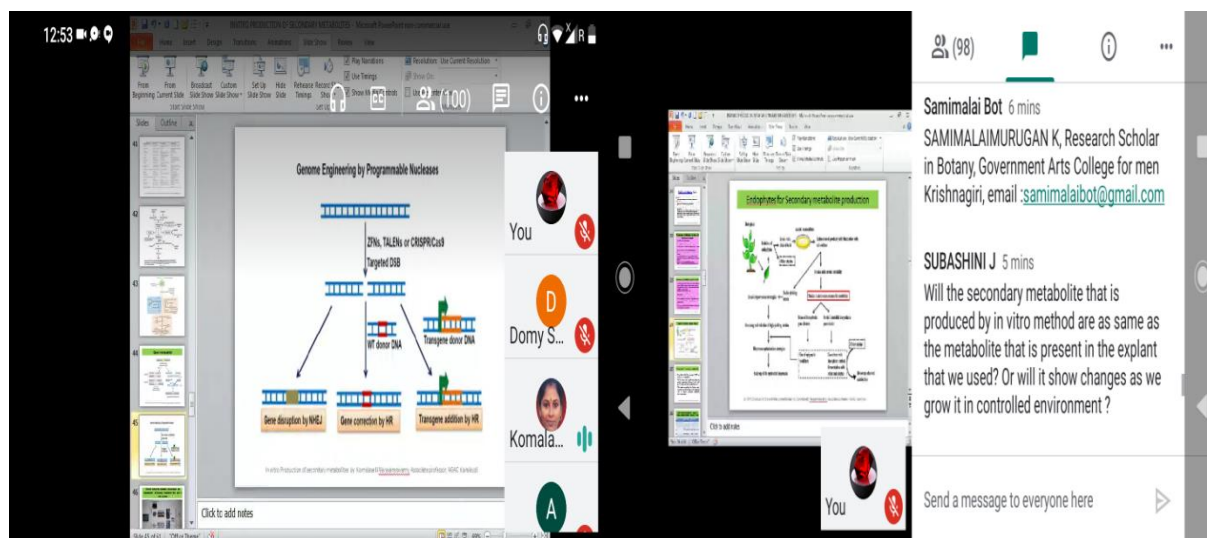
**Dr.A.Auxilia,**  
 Assistant Professor of Botany  
 80729 40906

**Date : 16<sup>th</sup> June 2020, Tuesday Time : 11.00 a.m to 12.00 p.m.**

Registration Link : <https://forms.gle/rXzroHpiczoYkm6TA>  
 Platform :  Google Meet

**No Registration fee; E-Certificates will be sent**





## 17.06.2020 - Webinar

A One-day Webinar on “Protecting Research Inventions through Intellectual Property Rights” was organized by the PG and Research Department of Botany, Holy Cross College, Trichy on 17<sup>th</sup> June 2020. The overall goal of the webinar is to inculcate and improve the knowledge on IPR among the staff, research scholars and students of Life sciences. The objectives of this Webinar are: To highlight the importance of IPR and to explore the role of different forms of IPR on protecting research inventions.

The webinar was started on 17<sup>th</sup> June 2020 at 11.00am with a prayer service. Dr. P. Shanthi, Assistant Professor and Head, PG and Research Department of Botany, Holy Cross College (Autonomous), Trichy gave an introductory address. Dr. M. Revathi and Dr. R. Kavitha, Assistant Professors of PG and Research Department of Botany, Holy Cross College (Autonomous), Trichy organized the webinar. Prof. T. Parimelazhagan, Department of Botany, Director, IPR Cell, Bharathiar University, Coimbatore was the Resource Person. He clarifies the differences between innovations and inventions. He shared the importance of IPR very noticeably. He clearly describe the different forms of IPR like-patent, copyright, trade mark and explain the various criteria for trademark registration. He explained the geographical indications, biopiracy, plant variety and farmers right with

recent inventions and innovations. He insisted the importance of patents and its exclusive rights to protect our inventions. The session came to an end at 12.15 pm with vote of thanks.

About 100 participants from our college and from various institutions participated in the webinar. Most of the participants clarified their doubts at the end of the session and they actively posted their queries in the chat box. Most of the participants satisfied with the effectiveness of the presentations and appreciated the organizing team via chat box. Based on the feedback from the participants, the webinar was informative to gain the knowledge and awareness on IPR and its role to protect our ideas and research findings.



**PG AND RESEARCH DEPARTMENT OF BOTANY  
HOLY CROSS COLLEGE (AUTONOMOUS)**  
AFFILIATED TO BHARATHIDASAR UNIVERSITY  
NATIONALLY ACCREDITED (5<sup>TH</sup> CYCLE) WITH A+ GRADE (CGPA 3.75/4) BY NAAC  
COLLEGE WITH POTENTIAL FOR EXCELLENCE  
TIRUCHIRAPPALLI-2, TAMIL NADU, INDIA

ORGANIZES A WEBINAR ON  
**PROTECTING RESEARCH INVENTIONS THROUGH  
INTELLECTUAL PROPERTY RIGHTS**



**RESOURCE PERSON**  
**Prof. T. Parimelazhagan**  
Department of Botany,  
Director, IPR Cell,  
Bharathiar University,  
Coimbatore.

**PRESIDED BY**  
**Dr. (Sr.) A. Chirstina Bridget**  
Principal,  
Holy Cross College (Autonomous),  
Tiruchirappalli -2.

**ORGANISING SECRETARY**  
**Dr. P. Shanathi**  
Assistant Professor & Head,  
PG & Research Department of Botany,  
Holy Cross College (Autonomous),  
Tiruchirappalli -2.

**ORGANIZING COMMITTEE**

**Dr. M. Revathi**  
Assistant Professor,  
PG & Research Department of Botany,  
Holy Cross College (Autonomous),  
Tiruchirappalli -2.

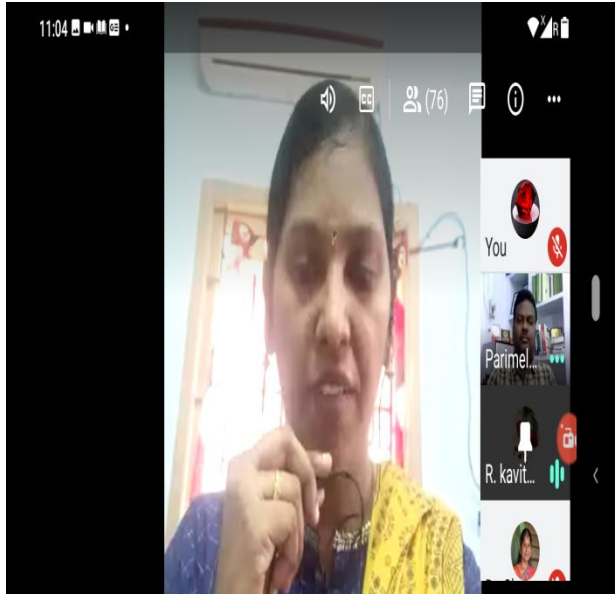
**Mrs. R. Kavitha**  
Assistant Professor,  
PG & Research Department of Botany,  
Holy Cross College (Autonomous),  
Tiruchirappalli -2.

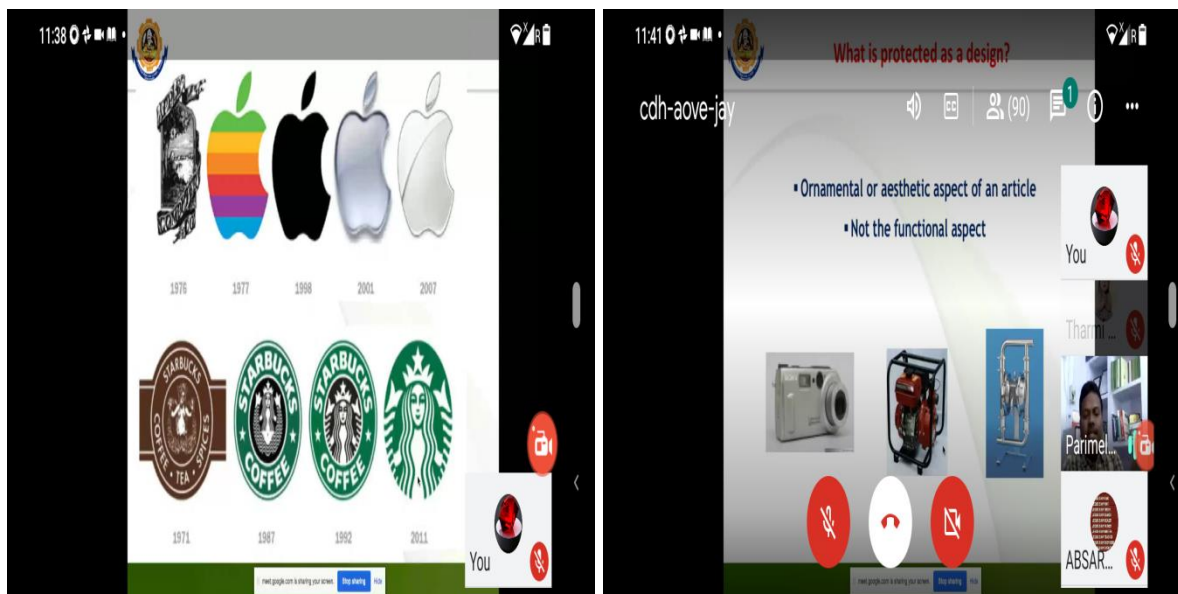
**Registration Link:**  
<https://forms.gle/J6V7HHS0EhNG5pkz9>

**Platform:** Google Meet

Date: 17.06.2020  
Time: 11 a.m. to 12 noon

❖ The webinar is open to all & Registration is free  
❖ E- Certificate will be provided for all the participants





## 16.07.2020 - International Webinar

The PG and Research department of Botany of Holy Cross College (Autonomous), Tiruchirappalli organized an International Webinar on 'Phytochemicals as an antioxidant alternate to combat MDR' through Google Meet on 16.07.2020. Dr. P. Shanthi, Assistant Professor and Head, department of Botany, Holy Cross College organized the webinar. Dr. R. Kavitha and Dr. A. Freeda Rose, Assistant Professor of Botany, Holy Cross College were the organizing committee members. There were 312 participants registered for the International webinar. The resource person of the day was Dr. Nagaraja Suryadevara, Lecturer, School of Biosciences, Faculty of Medicine, Bioscience and Nursing, MAHSA University, Bandar Saujana Putra, Selangor, Malaysia. He highlighted the nature of Multidrug resistant organisms and their role against several drugs and he elaborated on different types of phytochemicals present in medicinal plants which show antibacterial and antiviral activities. As this programme is open to all faculty and students, we have received a huge number of responses all over the world. A total of 210 participants have attended the programme. The participants were UG, PG students, Assistant and Associate Professors, Deans, research scholars, public from various regions of Tamil Nadu, other



states of India and outside India. Certificates were issued to all the participants those who attended the full session. The certificates were issued immediately to the candidates through their registered email by certify'em.

**PG AND RESEARCH DEPARTMENT OF BOTANY**  
**HOLY CROSS COLLEGE (AUTONOMOUS)**  
Affiliated to Bharathidasan University  
 Nationally Accredited (4th Cycle) With A++ Grade (CGPA 3.75/4) By NAAC  
 College with Potential of Excellence  
 Tiruchirappalli-620002

Dates: 16.07.2020  
 Time: 3.00pm to 5.00pm

ORGANISES AN INTERNATIONAL WEBINAR ON  
**'PHYTOCHEMICALS AS AN ANTIBIOTIC ALTERNATIVE TO COMBAT MDR'**



**RESOURCE PERSON**  
**Dr. Nagaraja Suryadevara**  
Lecturer, School of Biosciences, Faculty of Medicine,  
 Bioscience and Nursing, MAHSA University,  
 Bandar Saujana Putra, 42610, Jenjarom, Selangor, Malaysia.





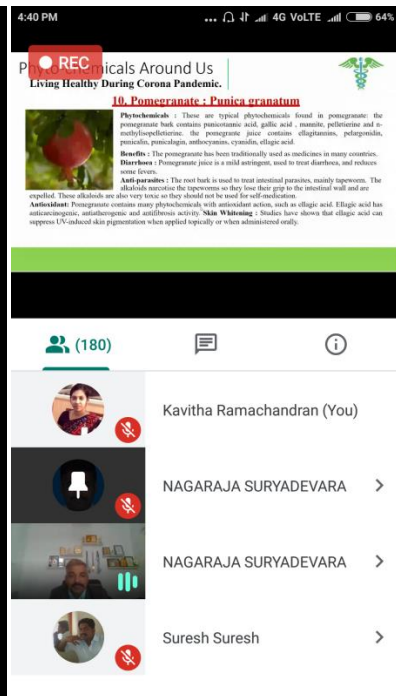
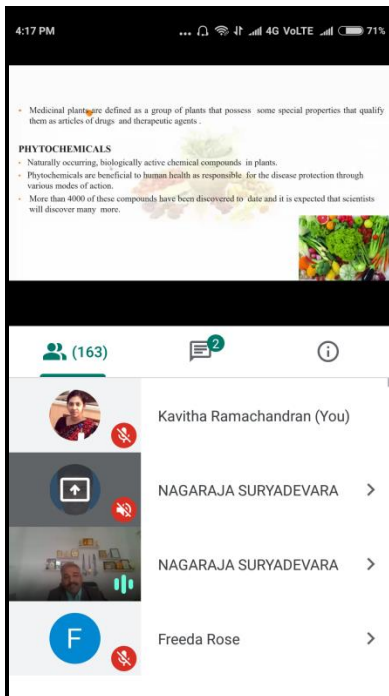
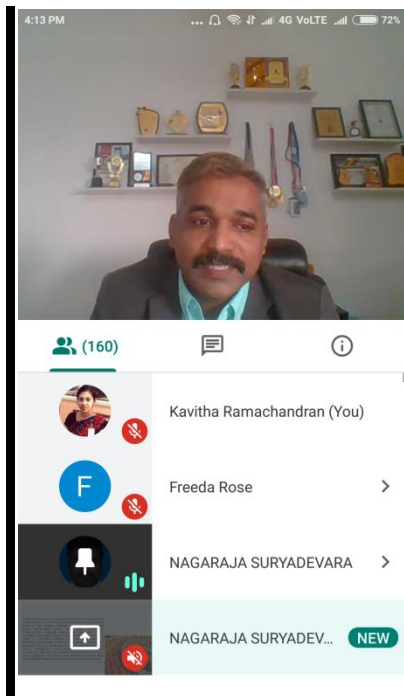
**PRESIDED BY**  
**Dr. (Sr.) A. Christina Bridget**  
Principal,  
 Holy Cross College (Autonomous),  
 Tiruchirappalli-620002

Registration Link:  
<https://forms.gle/GeNdStjN9ydmZxm7>

**ORGANISING SECRETARY**  
**Dr. P. Shanthi**  
Assistant Professor & Head,  
 PG and Research Department of Botany,  
 Holy Cross College (Autonomous),  
 Tiruchirappalli-620002

**ORGANISING COMMITTEE**  
**Dr. R. Kavitha**  
Assistant Professor,  
 PG and Research Department of Botany,  
 Holy Cross College (Autonomous),  
 Tiruchirappalli-620002

Platform: Google Meet:  
 \*The webinar is open to all & Registration is free.  
 \*Certificates will be provided for all the participants.





research scholars from various regions of Tamil Nadu, other states of India. Certificates were issued to all the participants those who attended the full session. The certificates were issued immediately to the candidates through their registered email by certify'em.

**PG AND RESEARCH DEPARTMENT OF BOTANY**  
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College with Potential of Excellence  
Truchirappalli-620002

**ORGANISES A NATIONAL WEBINAR ON**  
**'DIVERSITY AND DISTRIBUTION OF PTERIDOPHYTES IN INDIA'**

**RESOURCE PERSON**  
**DR. A. BENNIAMIN**  
Scientist 'E'  
Botanical Survey of India  
Western Regional Centre Pune  
Ministry of Environment & Forests  
Government of India

**PRESIDED BY**  
**Dr. (Sr.) A. Christina Bridget**  
Principal,  
Holy Cross College (Autonomous),  
Truchirappalli-620002

Date: 6.08.2020  
Time: 3.00pm to 4.00pm

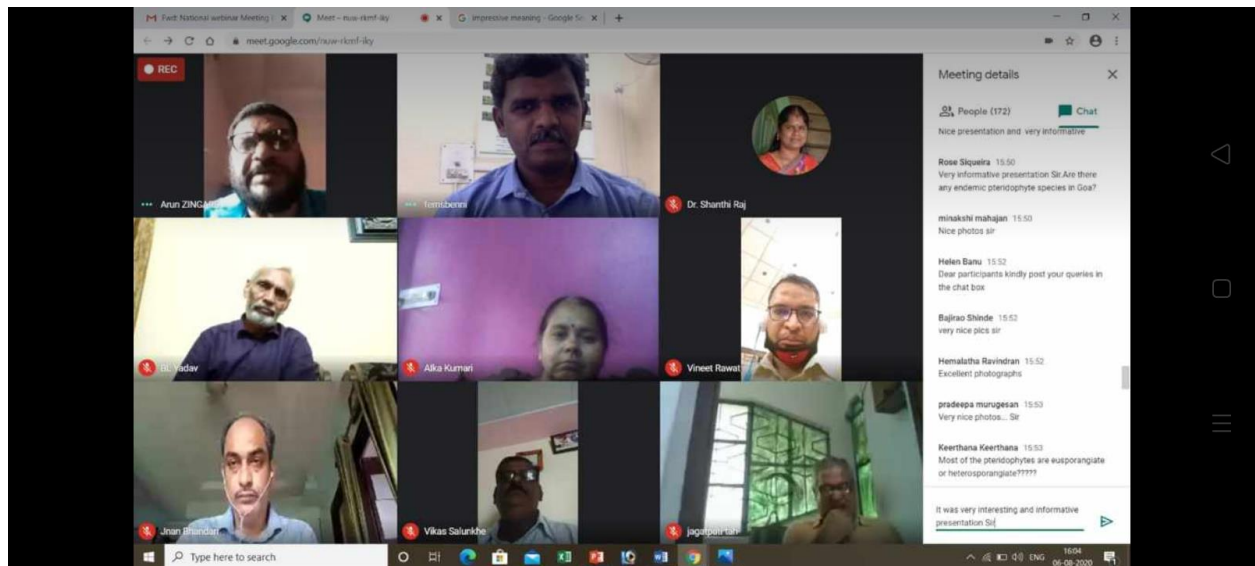
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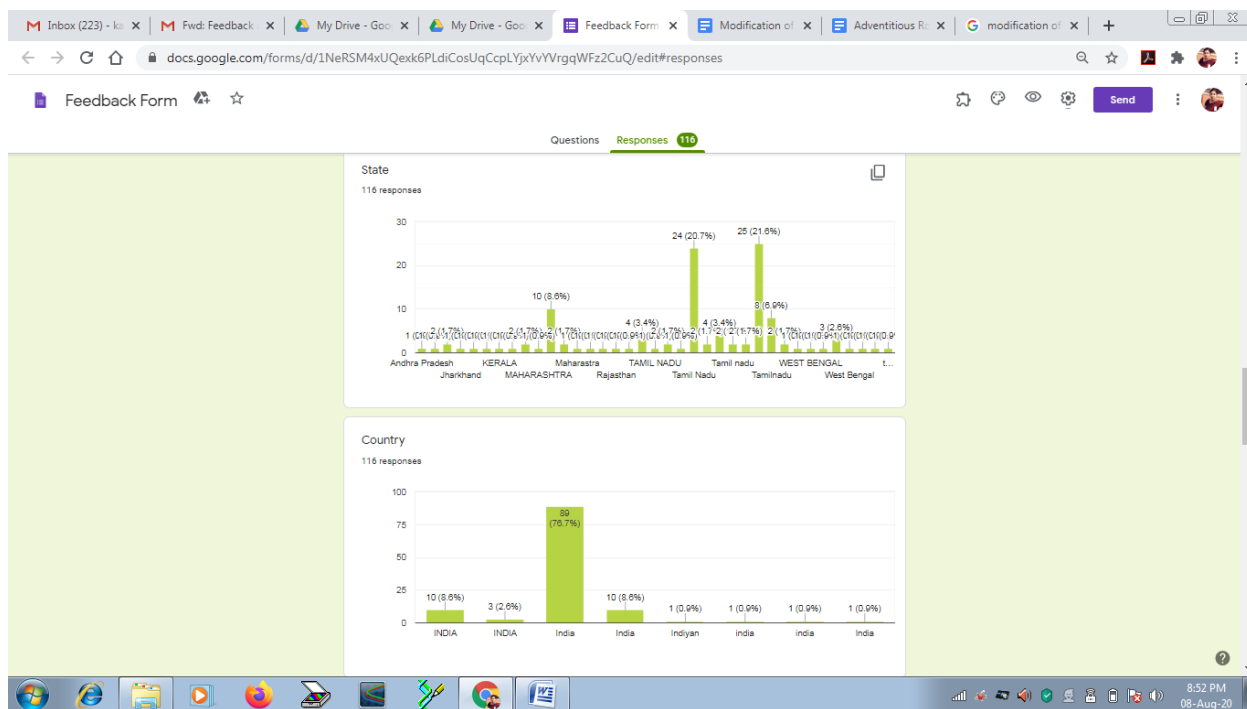
**CONVENOR**  
**Dr. P. Shanthy**  
Assistant Professor & Head,  
PG and Research Department of Botany,  
Holy Cross College (Autonomous),  
Truchirappalli-620002

**ORGANISING SECRETARIES**  
**Dr. R. Kavitha**  
Assistant Professor,  
PG and Research Department of Botany,  
Holy Cross College (Autonomous),  
Truchirappalli-620002

**Dr. B. Helen Mary Piramila**  
Assistant Professor,  
PG and Research Department of Botany,  
Holy Cross College (Autonomous),  
Truchirappalli-620002

Platform: Google Meet:  
-The webinar is open to all & registration is free.  
-Certificate will be provided for all the participants





## 06.10.2020 - National Webinar

The PG and Research department of Botany of Holy Cross College (Autonomous), Tiruchirappalli organized a National Webinar on 'Marine Bio-Prospecting' through Google Meet on 06.10.2020. Dr. R. Kavitha, Assistant Professor of Botany, Holy Cross College was the organizing secretary. She introduced the resource person. There were 393 participants registered for the National webinar. The resource person of the day was Dr. T. Citarasu, Associate Professor, Centre for Marine Science and Technology, Manonmaniam Sundaranar University, Rajakkamangalam, Kanniyakumari. He highlighted how marine ecosystems are improving the quality of human life. He emphasized the significance of marine organisms, microbial sources and also he highlighted how to screen bioactive compounds such as antibacterial compounds, antifungal, antiviral compounds from marine derivatives. A total of 180 participants have attended the programme. The participants were UG, PG students, Assistant and Associate Professors, Deans and research scholars from various regions of Tamil Nadu, other states of India. Certificates were issued to all the

participants those who attended the full session. The certificates were issued immediately to the candidates through their registered email by certify'em.



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Holy Cross College (Autonomous)  
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Nationally accredited (4th cycle) with A++ grade (CGPA 3.75/4) by NAAC  
College with potential of excellence  
Tiruchirappalli-620002

**ORGANISES A NATIONAL WEBINAR ON**  
**“ MARINE BIO-PROSPECTING ”**

**RESOURCE PERSON**  
Dr. P. Citarasu  
Associate Professor,  
Centre for Marine Science and Technology,  
Manonmaniam Sundaranar University,  
Rajakkamangalam, Kanniyakumari,  
India-629502

**PRESIDED BY**  
Dr. (Sr). A. Christina Bridget  
Principal,  
Holy Cross College  
(Autonomous),  
Tiruchirappalli-620002

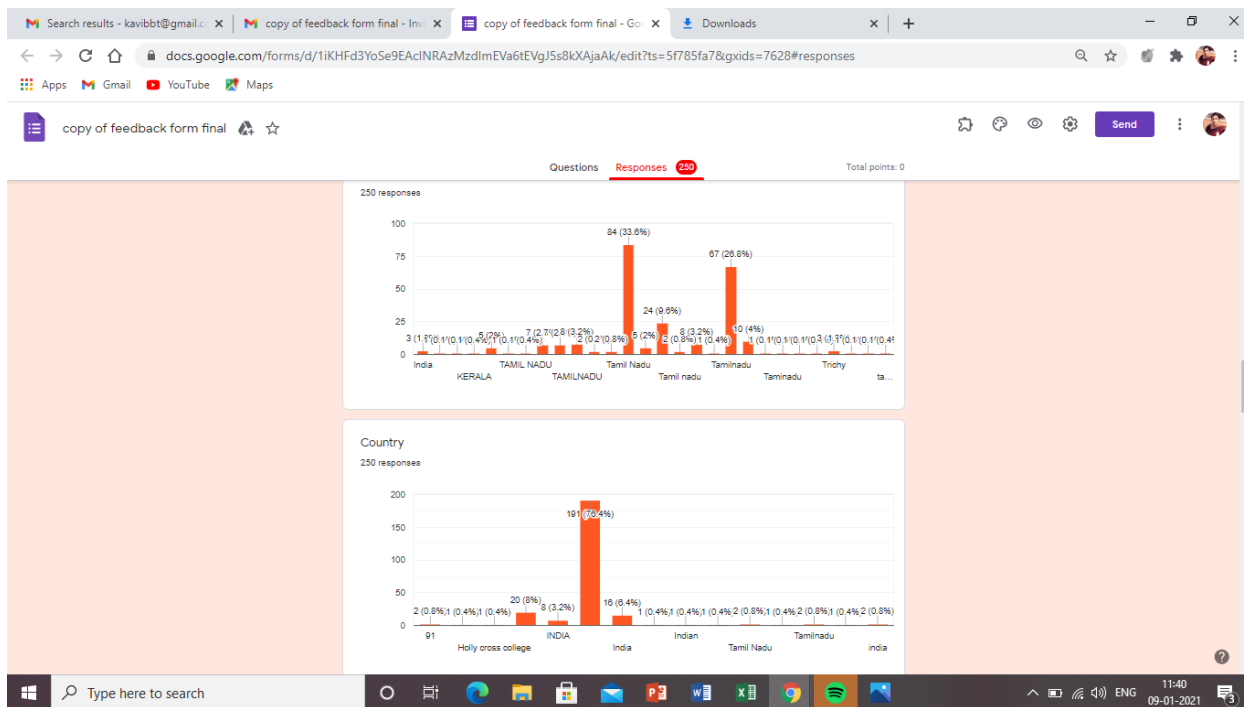
**DATE : 06.10.2020**  
**TIME : 03:00 - 04:00 PM**

**REGISTRATION LINK**  
<https://forms.gle/LtAKjH5KZpSEWeCD8>

**CONVENOR**  
Dr. P. Shanthi  
Assistant Professor and Head,  
PG and Research Department of Botany,  
Holy Cross College (Autonomous),  
Tiruchirappalli- 620002

**ORGANISING SECRETARY**  
Dr. R. Kavitha  
Assistant Professor,  
PG and Research Department of Botany,  
Holy Cross College (Autonomous),  
Tiruchirappalli-620002

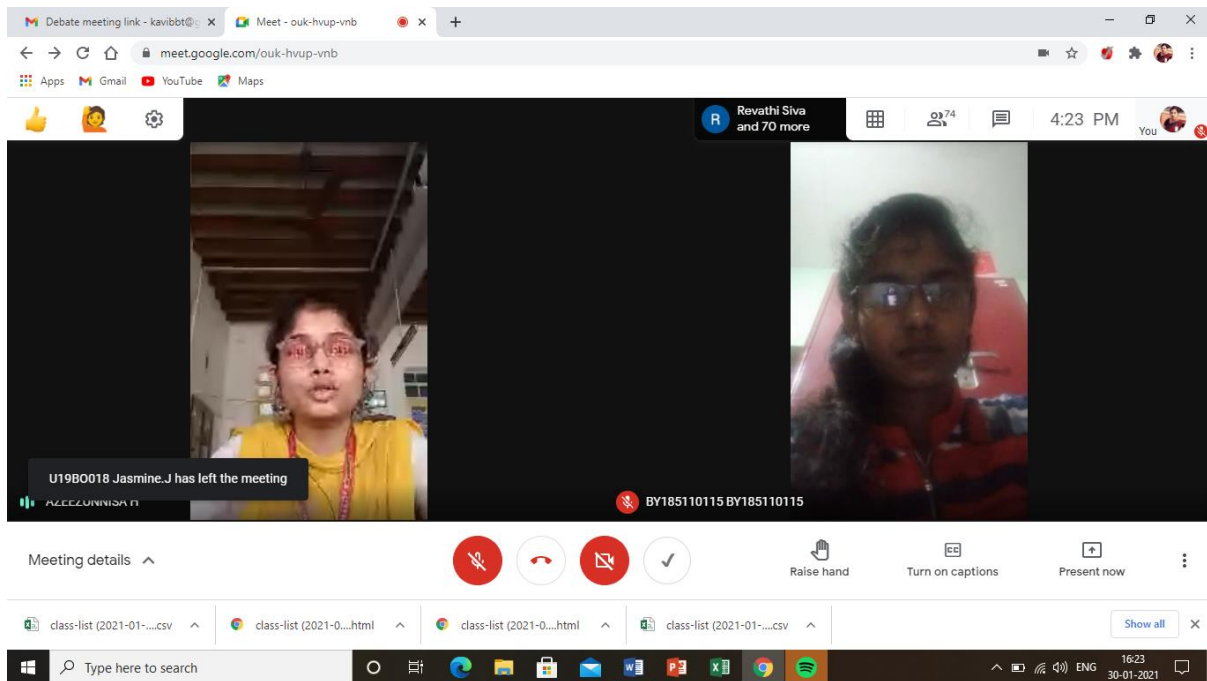
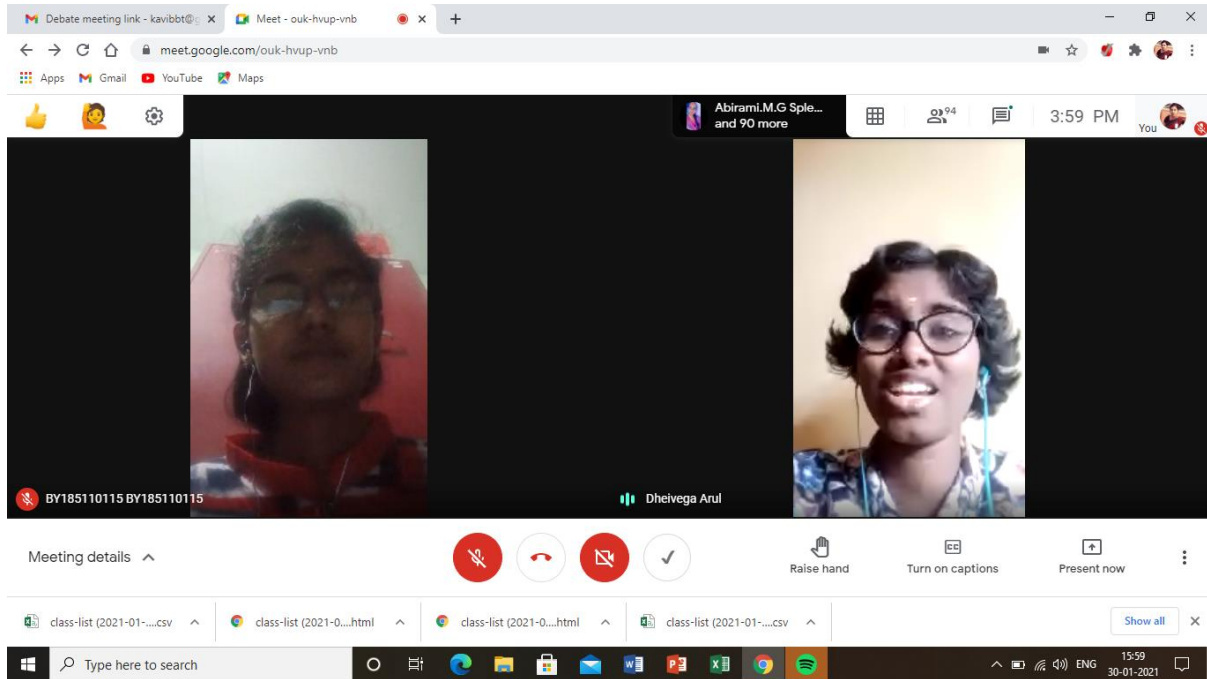


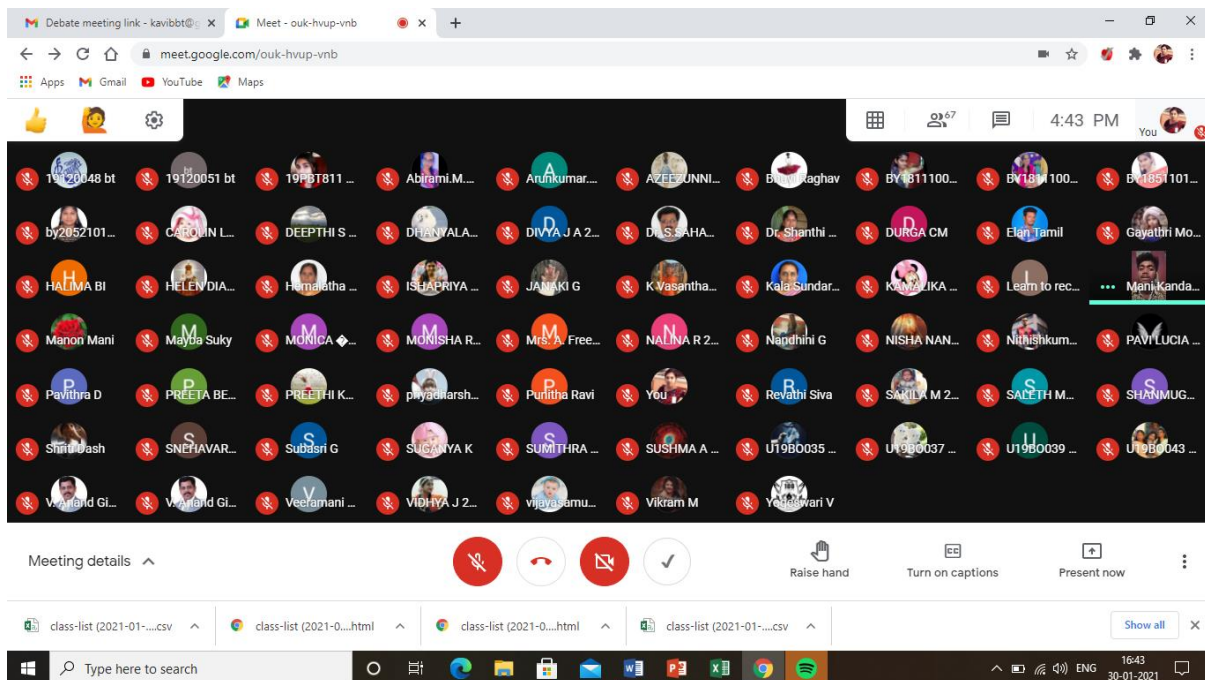


### **30.01.2021 – Prof. (Miss.) Jeya Marie memorial Intercollegiate debate Competition**

Prof. (Miss.) Jeya Marie Memorial Intercollegiate debate was conducted on 30.01.2021 through online platform (Google Meet) from 3.30 pm to 5.30 pm by PG & Research department of Botany, Holy Cross College (Autonomous), Trichy -2. The topic given was ‘Scientific invention is a boon or bane’. The judges for the debate were Dr. S. Sahaya Sathish, Dean, School of Biological Sciences, St. Joseph’s College (Autonomous), Trichy and Dr. V. Anand Gideon, Associate Professor and Head, Department of Botany, Bishop Heber College, Trichy. The programme began with the prayer service offered by Ms. A.Sushma, II M.Sc Botany. Dr. R. Kavitha, Assistant Professor and President of Botany Club welcomed the gathering. This is followed by reading of Minutes by Ms. H.Azeezunnisa, Botany Club secretary. There were 8 team from various colleges participated in debate competition. One from each team spoke for the topic and another spoke against the topic. Ms. S. Nisha Nandhini, II B.Sc Botany of Bishop Heber College won the 1<sup>st</sup> prize and the second prize is given to D. Reiya Bosco, II M.Sc Biotechnology of St. Joseph’s College (Autonomous) and Ms. C. M. Durga, III B.Sc Botany of

Seethalakshmi Ramaswamy College, Trichy. The team prize was bagged by Ms. J. Getsial Sabatini Wallace of I M.Sc Botany, Bishop Heber College and Ms. Mercy Margret of III B.Sc Botany, Bishop Heber College. The programme came to an end with vote of thanks proposed by Ms. Pavithra, I M.Sc Botany, Holy Cross College (Autonomous), Trichy.





### **13.03.2021 – Dr. R. M. Meenakshi Endowment Lecture**

Dr. R. M. Meenakshi Endowment lecture was conducted for Botany students on 13.03.2021 through Google Meet from 3.00 pm to 4.00 pm. Dr. R. Sathishkumar, Professor and Head, Department of Biotechnology, Bharathiar University, Coimbatore was the resource person. The programme began with prayer service by Ms. A. Sushma, II M.Sc Botany. Dr. R. Kavitha, President of Botany Club delivered welcome address and introduced the chief guest. This is followed by reading of minutes by Ms. H. Azeezunnisa, II M.Sc Botany. The chief guest gave a special lecture on ‘DNA Barcoding for Plant and Herbal Product Authentication’. He highlighted the applications of Bar coding and explained how to authenticate herbal products by DNA barcoding. He gave a very clear picture about producing barcode data from hundreds of samples per hour. He has shown a device which was made by him for DNA Barcoding. He elaborated the importance of rbcL, matK and 16S rDNA in the identification of different plant species. There are about 100 participants have been benefitted. The chief guest have cleared all the queries raised by the participants. The programme came to an end with vote of thanks proposed by Ms. J. Vidhya, III B.Sc Botany.



meet.google.com/xsz-zzaq-zot?pli=1&authuser=5

REC Sathish Kumar R is presenting HELEN DIANA and 75 more

3:18 PM

**DNA BARCODING**  
for plant and herbal product authentication

DR. SATHISHKUMAR RAMALINGAM  
Professor and Head  
Plant Genetic Engineering Laboratory  
Department of Biotechnology  
BHARATHIAR UNIVERSITY  
Coimbatore - 641046, Tamil Nadu  
rsathish@bvc.edu.in

Meeting details

class-list (2021-0...html)

Type here to search

15:18 13-03-2021

meet.google.com/xsz-zzaq-zot

Sathish Kumar R is presenting PRIYADHARSHINI C 2K2... and 76 more

3:33 PM

**An Internal ID System for All Animals**

**The Mitochondrial Genome**

DNA  
Typical Animal Cell  
Mitochondrion  
mtDNA

D-Loop  
Small ribosomal RNA  
Cytochrome b  
ND6  
ND1  
ND2  
ND3  
ND4  
ND5  
ND4L  
COIII  
ATPase subunit 8  
ATPase subunit 6  
COII  
COI

Meeting details

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Type here to search

15:33 13-03-2021

meet.google.com/xsz-zzaq-zot?pli=1&authuser=5

Sathish Kumar R is presenting

### DNA Barcode Candidates for Plant Kingdom

**Chloroplast:** *psbA-trnH* (Low variation and low identification ability), *rbcL* (High variation and identification ability), *trnT-trnL* (Low variation and low identification ability), *atpD* (Low variation and low identification ability), *trnK* (High variation and identification ability).

**Mitochondrion:** *COI* (Low variation and rapidly changing structure of the genome), *matK* (Other mitochondrial genes).

**Nucleus:** *ITS1* (High identification ability but poor PCR amplification), *ITS* (High identification ability but poor PCR amplification), *ITS2* (Low divergence), *5.8S* (Low divergence), *Single copy genes of their nucleus* (Poor PCR amplification), *ITD2* (Pending to be investigated).

Chen et al., 2010

Meeting details

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13:37 13-03-2021

meet.google.com/xsz-zzaq-zot?pli=1&authuser=5

Sathish Kumar R is presenting

### Ideal Universal Primers DNA Barcode should be

**Fail: Sequence is completely conserved, good for PCR, but uninformative as barcode**

Species	1	2	3	4	5	6
Species 1	ATG	ATG	ATG	ATG	ATG	ATG
Species 2	ATG	ATG	ATG	ATG	ATG	ATG
Species 3	ATG	ATG	ATG	ATG	ATG	ATG
Species 4	ATG	ATG	ATG	ATG	ATG	ATG
Species 5	ATG	ATG	ATG	ATG	ATG	ATG
Species 6	ATG	ATG	ATG	ATG	ATG	ATG

**Fail: Sequence shows no conservation, impossible for PCR, but good as barcode**

Species	1	2	3	4	5	6
Species 1	ATG	ATG	ATG	ATG	ATG	ATG
Species 2	ATG	ATG	ATG	ATG	ATG	ATG
Species 3	ATG	ATG	ATG	ATG	ATG	ATG
Species 4	ATG	ATG	ATG	ATG	ATG	ATG
Species 5	ATG	ATG	ATG	ATG	ATG	ATG
Species 6	ATG	ATG	ATG	ATG	ATG	ATG

**Win: Sequence shows some (ideally ~70%) conservation, good for PCR, good as barcode**

Species	1	2	3	4	5	6
Species 1	ATG	ATG	ATG	ATG	ATG	ATG
Species 2	ATG	ATG	ATG	ATG	ATG	ATG
Species 3	ATG	ATG	ATG	ATG	ATG	ATG
Species 4	ATG	ATG	ATG	ATG	ATG	ATG
Species 5	ATG	ATG	ATG	ATG	ATG	ATG
Species 6	ATG	ATG	ATG	ATG	ATG	ATG

Meeting details

class-list (2021-03-...csv) class-list (2021-0-...html) class-list (2021-0-...html)

13:39 13-03-2021

(no subject) - kavibbt@gmail.com Meet - xsz-zzaq-zot

meet.google.com/xsz-zzaq-zot?pli=1&authuser=5

Sathish Kumar R is presenting Sushma Amalraj and 80 more

### Authentic/Adulterated

**Authentic:** If DNA barcode for a species is the main ingredient on the label of a tested herbal product.

**Contamination:** If a DNA barcode is found for a species other than what is labelled on the tested product.

**Substitution:** If a DNA barcode is found for a species other than what is labelled on the tested product, AND there is NOT a barcode recovered for the main ingredient listed.

**Filler:** If a DNA barcode is found for known herbal product filler species AND may be found in place of (substitution) or in addition to the main product ingredient (contamination).

Distribution of 28 Plant taxa on 166 Query Sequences

Meeting details

Meeting controls: Mute, Video, Screen share, End call

Participants: You, Sathish Kumar R, ESWARI D 2K18291, Ananth Prabu, ISHAPRIYA R 2K18293, VIJAYA SAMUNDESW..., Bhuvi Raghav, SRIMATHI S 2K20774, VINOLIYA V 2K18330

Meeting details: Sathish Kumar R is presenting, Turn on captions, Activate Windows

Taskbar: class-list (2021-03-...), class-list (2021-0-...), class-list (2021-0-...), Windows search, 15:48 13-03-2021