

# JAI HIND AS AN INSTITUTE OF CHOICE

DEPARTMENT OF BOTANY

# BOTANY

- Botany is a fusion of the traditional components like agriculture, taxonomy, plant physiology and horticulture with the modern aspects of biochemistry, molecular biology and biotechnology.
- Enormous gain in information and applications owing to tremendous inputs from research in all fields
- Challenging areas of teaching and research have emerged in Botany .

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## *Keeping vision of our college in mind*

*Subject of botany provides students with a well rounded education of International Standards.*

- The syllabus was advanced to include topics as per the present day knowledge and skill requirements.
- Course was skillfully executed in 2019-2020 by all experienced and well qualified teachers of department of Botany.
- Presently 2 teachers also recognized as Ph.D guides. Guides.
- Students actively involved in research and win at Intercollegiate competitions

# Faculty Dept of Botany



• **Dr Sangeeta Godbole**



**Dr Devangi Chachad**



**Dr Payal Acharekar**



• **Dr Archana Ashtekar**



**Dr Bharati Bist**



**Ms. Manoshree Mondal**

Strength of the department ....

**ALL ROUND DEVELOPMENT.....**

**With focus on Employability and entrepreneurship**

➤ **The department is funded by Star DBT.**

➤ Students encouraged to work on Research projects

➤ Facilities provided to carry the research as per their choice both within and outside their academic framework.

➤ Students gain expertise on various instruments & equipments at Jai-Hind college across all science departments

➤ Students are thus aware of the latest developments in field of research in the subject studied

# Strength of the department and college

- ***ALL ROUND DEVELOPMENT***

*With focus on Employability and entrepreneurship  
We design.....*

- **Additional Academic courses** .... Students gain hands-on experience ...for all students (cross faculties and streams)
- **Field visits** .....To gain real field experience
- **Guest lectures** ..... Gain professional inputs from eminent faculty as well as our own successful alumni from research fields.....

*Activities for year 2019-20*

# GUEST LECTURES

## 2019-20

- **Dr. Rutwik Thengodkar** is an alumnus of Jai Hind and the co-founder of Cyanofarm Research Center, KeshavShrushti, Bhayandar gave a lecture on how to mitigate problems arising out of malnutrition.
- He emphasized on understanding the dietary intake of Indian population and how cyanobacteria can be used to improve nutritional value of food items under cultivation.
- He also inculcated research attitude in young minds.
- Students thoroughly enjoyed his lecture!





# GUEST LECTURE 2019-20

- **Mr. Mehershad Wadia**, a Jai Hind Alumnus and active researcher who did his M.Sc. In Molecular Biology from University of Queensland, Australia.
- His research is based on role of plant DICER like genes and RDR 6 in DS RNA induced protection against CMV.
- He not only spoke about research work but also guided students on prospects in Post graduate studies abroad.



# Workshop on vegetable carving by Dr Meenakshi Vaidya



➤ Students learnt the use of tools and basic skills and techniques of vegetable and fruit carving.



# FIELD VISITS

- Go Green Nursery Panvel
- Students of T.Y.B.Sc. Horticulture (Botany and Life sciences) visited Go Green Nursery near Panvel.
- various aspects of gardening, composting, handicrafts and nursery management.
- A total of 35 students accompanied by 5 staff members conducted this visit on 10<sup>th</sup> August 2019.
- Educative and informative visit.
- Students were asked to study each aspect in groups and make a presentation to us at College.



# Field visit Botanical excursion to Pachmarrhi



# FIELD VISITS

➤ Annual fruit, flower and vegetable show by Friends of Trees at Ruparel College on 08<sup>th</sup> February 2020

➤ Students of TYBSc Horticulture (Botany and Life sciences) with their teachers visited the exhibition and gained immense knowledge on present scope of horticulture industry.



# INDO-JAPANESE EVENT

- The Indo-Japanese event was organized on 21<sup>st</sup> August 2019 (Japan Day) at Jai Hind College wherein Japanese Consul General Mr. M. Harada and other dignitaries graced the event.
- This event marked the first-tie-up of Indo-Japanese association with Jai Hind College wherein various courses such as Bonsai, Origami and Ikebana were demonstrated.
- Besides these, exhibits were made and displayed by Horticulture students which included Terrariums, Dish Gardens, Hanging baskets, Vegetable Carving, Bio-jewellery, Floral jewellery, Landscape, Bottle garden and Mandap decoration.



# INDO-JAPANESE EVENT exhibits by students



# INDO-JAPANESE EVENT exhibits by students





# INDO-JAPANESE EVENT exhibits by students...in the making....



# INDO-JAPANESE EVENT exhibits by students



# INDO-JAPANESE EVENT exhibits by students



# INDO-JAPANESE EVENT exhibits by students



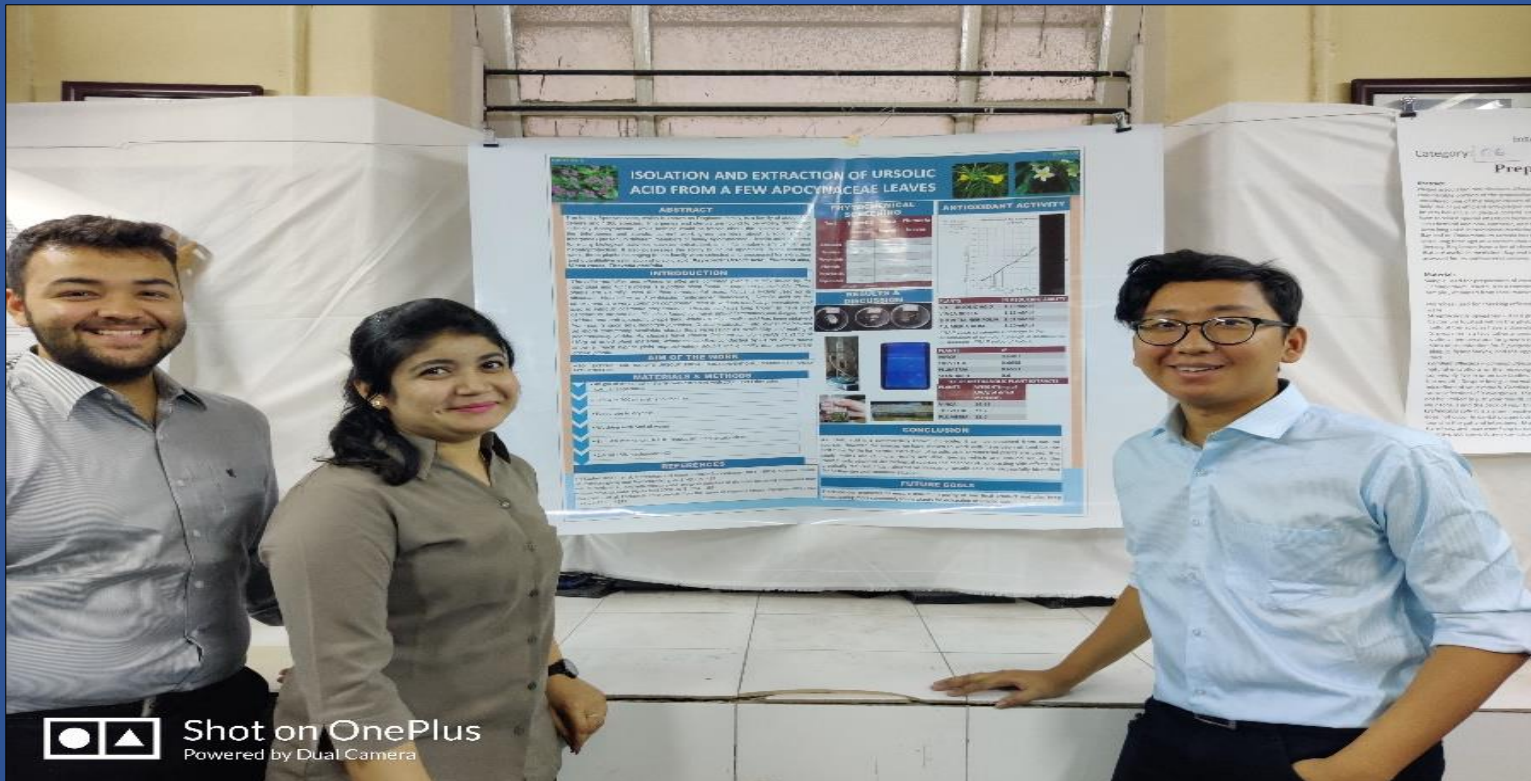
Research Projects undertaken and presented for intercollegiate competitions by TYBSc students

➤ **Chemical composition and anti-microbial activity of Essential oil from *Callistemon* sp.**



Research Projects undertaken and presented for intercollegiate competitions by TYBSc students

Extraction and isolation of Ursolic acid from few Apocynaceae leaves.



Shot on OnePlus  
Powered by Dual Camera

# Estimation of flavanoids from the plant samples in terms of Rutin. TvBSc project

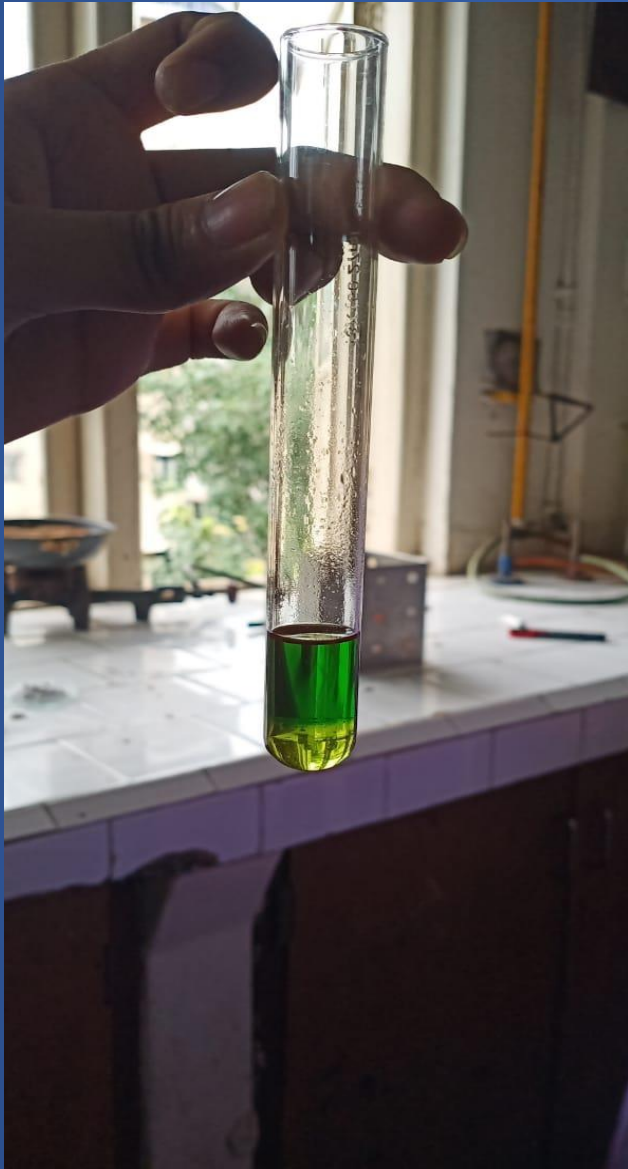


# Estimation and comparison of total phenols from the plant samples in terms of Gallic acid. TYBSc project ....

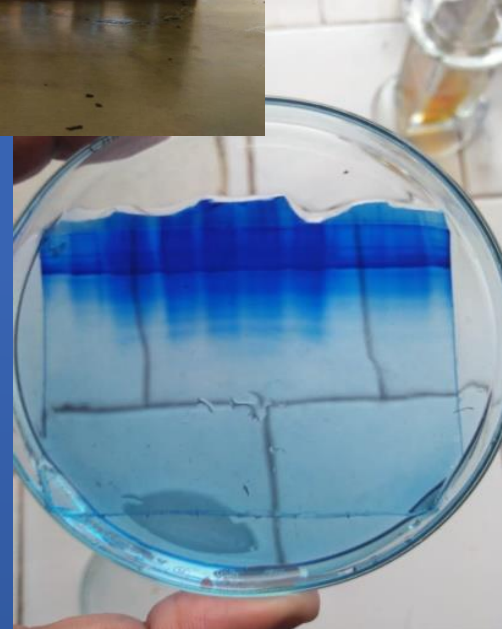
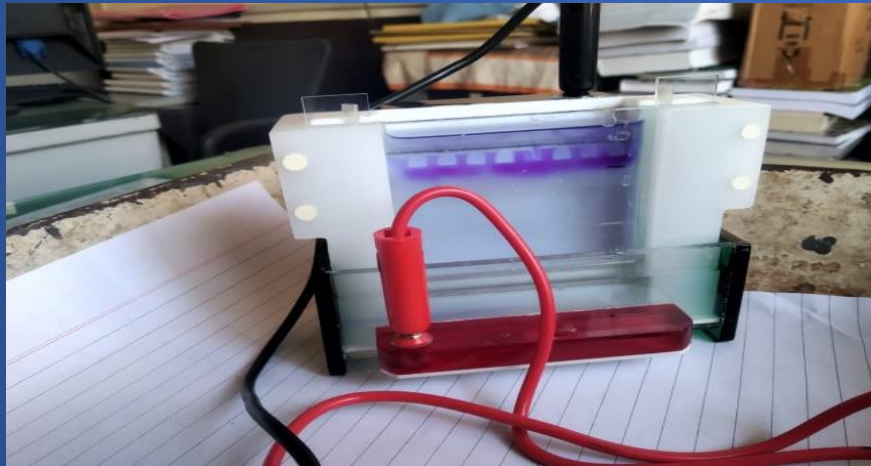
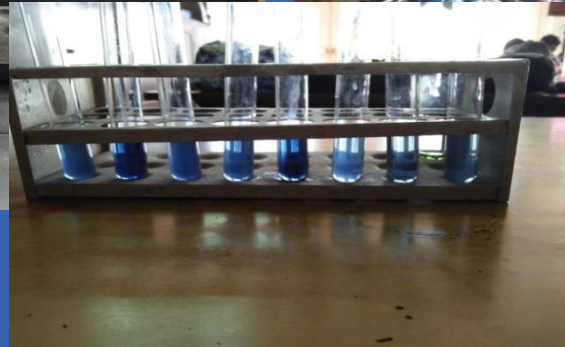
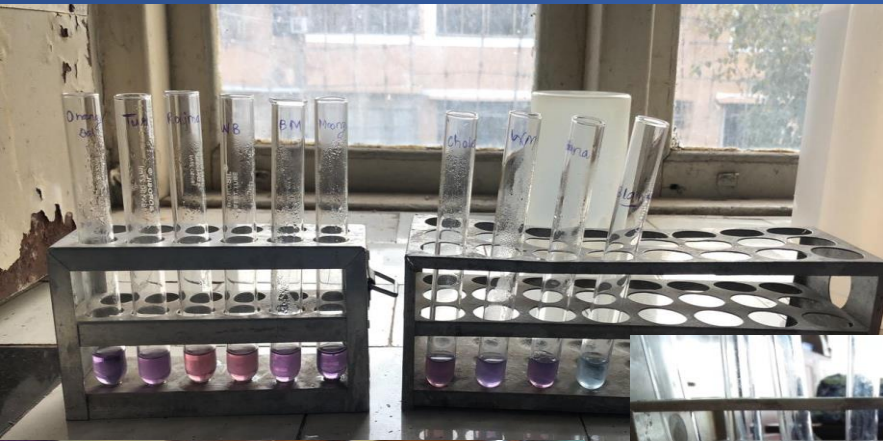




# Pigment extraction from leaves using column chromatography... TYBSc ....

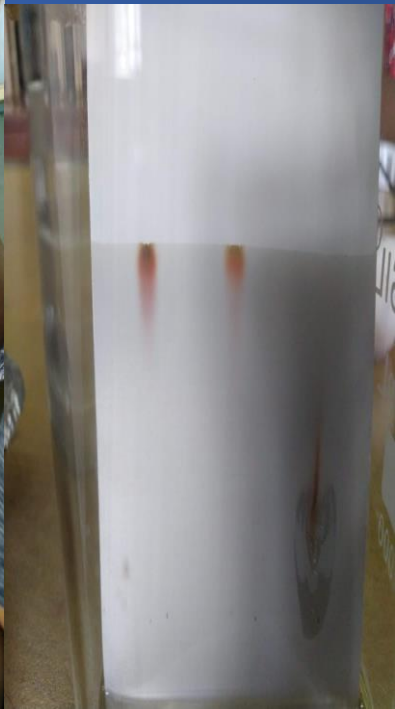


# Extraction, Estimation and comparison of total proteins from legumes on Native PAGE gels. TYBSc project ....



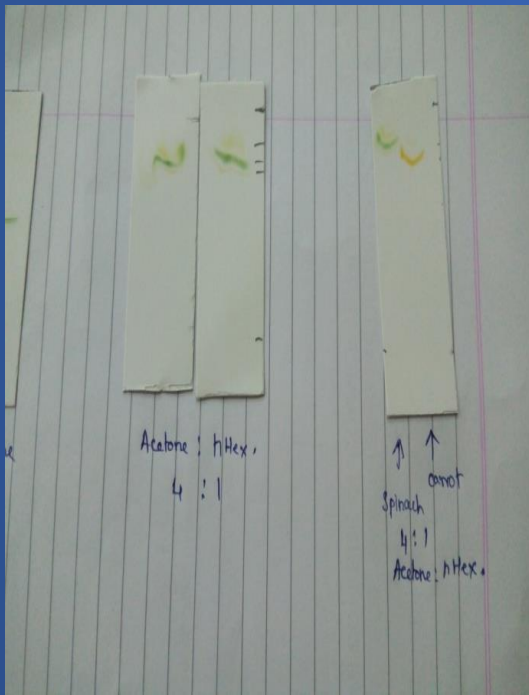
# Research Projects undertaken and presented for intercollegiate competitions by TYBSc students

- Amalgamation of crude leaf extract with essential oil to make aromatic/ organic soap.
- Activity: TLC analysis was performed to know different components present. The extract was subjected to Qualitative phytochemical screening. Antimicrobial analysis was performed to see the antibacterial and antifungal properties of the extract. Soap was made from essential oils and pigments.



Research Projects undertaken and presented for intercollegiate competitions by TYBSc students

- **Standardization of protocol for solvent extraction and separation of carotenoids using TLC from various plant sources and comparison of the same.**



# Projects by SYBSc students

## Essential oil extraction

- Activity: Essential oil extraction and quantification was carried out from 4 different leaf samples of *Murraya paniculata* (kamini), *Citrus limon* (lemon), *Murraya koenigii* (curry leaves), *Aegle marmelos* (bel Patti).

## Pigment extraction from flowers.

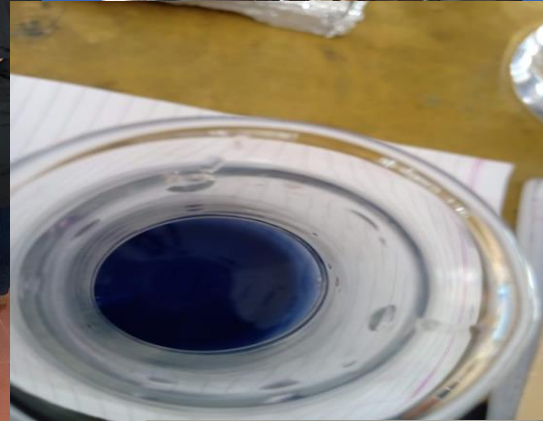
Activity: Pigment extraction was carried out from 3 different flowers and later on Anthocyanin were separated. The extracted pigments will be used to check pH of unknown solutions.

## ➤ Comparative study of Fe in common green leafy vegetables.

Activity: Common green leafy vegetable were ashed and treated to isolate Fe. The content of different vegetables was compared.



# Projects by SYBSc students



# Projects by SYBSc students

- Estimation of protein from lentils by different methods and a comparative study performed.
- Determination and comparison of chloride uptake from different underground plant samples.



# Projects undertaken by SYBSc & FYBSc students

- Density gradient centrifugation for isolation of chloroplast using leaf samples.
- Estimation of vitamin C content from indigenous and exotic fruits using DCPIP titration method. and a comparative account studied.
- Spectral analysis of plant pigments from fruits and vegetables





# ***ADDITIONAL ACADEMIC ACTIVITIES 2019-2020***

ALSO UNDERTAKEN BY STUDENTS BELONGING TO CROSS FACULTIES  
.....MATHS, COMPUTER SCIENCES, IT, CHEMISTRY, PHYSICS, ETC

**1) Dish Garden and Miniature landscape making course.**

**2) Short term skill development course in Perfumery**

**3) Hands on training for permanent slide preparation using Microtomy**

# Dish Garden and Miniature landscape making

## Learning Objectives & Skills to be developed:

Students will be trained to

- Make the base of the landscape in attractive shapes and designs using marble and granite or tiles
- Make use of ceramic pots for making smaller Dish garden landscapes.
- Construct various artifacts used in landscapes
- Understand soil structure, types and its use
- Judge the placement of plants with aesthetic sense.
- Beautify landscape with stones, clay models and other paraphernalia.
- Maintain the beauty of Landscape with proper after care

Number of Participants/ Beneficiaries: 20

## Duration of course/ program:

8 days duration (3 hours per day)

## Brief profile of Resource persons:

- 1) Dr Sangeeta Godbole, Head and Associate Professor
- 2) Mr. Rajiv Kori , Field collector for Biology.



# Dish Garden and Miniature landscape making



# Dish Garden and Miniature landscape making



Shot on OnePlus  
By Archana's One+

# Dish Garden and Miniature landscape making



Shot on OnePlus  
By Archana's One+

# Short term skill development course in perfumery

- **Learning Objectives & Skills to be developed**: Students will be trained to extract essential oils and use them in making products that are used on a day to day to basis and spark an entrepreneurial streak in the students.
- **Number of Participants/Beneficiaries**: 25
- **Duration of course/ program**: 5 weeks duration (once a week for 3 hours per day)
- **Brief profile of Resource person**: Mr Nishit Doshi , Perfumer, S.H Kelkar Company, Mumbai



# Short term skill development course in perfumery



# Hands on training for permanent slide preparation

## Learning Objectives & Skills to be developed

Students are being trained to prepare the permanent slides by processing the plant material with a few chemicals, block making and ribbon cutting along with staining.

Duration of course/ program: 5 weeks duration  
(Thrice a week for 1 hour per day)

Brief profile of Resource person: Dr. Devangi  
Chachad, Assistant Professor, Jai Hind College,  
Mumbai



## Future prospects.....

- M.sc by research and papers in disciplines like plant physiology, taxonomy, cytogenetics, ecology, environmental botany palynology, etc.....followed by teaching and research activity
- Ph. D.....Followed by teaching or research as scientific officers in important agricultural and forest research institutes all over the country
- Forest officers through IFS entrance exam
- Forensics sciences
- Herbal and natural products R & D and industry
- Perfumeries and cosmetics
- Entrepreneurs in various Horticulture activities of indoor and outdoor gardening , floriculture ,Landscape designing in urban areas and Gardens all over the country.

*THANK YOU*