Department of Dravyaguna

INTRODUCTION

The Department of Dravyaguna is actively engaged in teaching, training, and research for both undergraduate and postgraduate students. The department focuses on imparting a strong scientific and pharmacological understanding of drugs derived from natural sources, including plant, animal, mineral, and marine origins.

In today's evidence-based scientific era, where validation of traditional knowledge is essential, the department plays a leading role in exploring, identifying, and conserving rare and endangered medicinal plant species described in Ayurveda.

The department integrates classical Ayurvedic principles with modern scientific approaches such as phytochemical analysis, cell line studies, and animal studies to generate globally acceptable research data.

INFRASTRUCTURE

Dravyaguna Department is well-equipped with an advanced pharmacognosy and phytochemistry laboratory, featuring instruments such as binocular and trinocular microscopes, viscometer, and pycnometer, enabling detailed analytical studies of medicinal drugs.

A unique feature of the department is its medicinal plant garden, "Bhavaprakash Vanoushadhi Udyan," spread over approximately 6000 sq. ft., housing around 390 species and 2949 plants. As per NCISM norms, all plants are properly labeled with QR code-based nameplates for easy identification and learning.

The department also maintains a well-developed museum showcasing a wide range of dry and wet drug samples for academic and research purposes.

FACULTY DETAILS

The department is supported by a dedicated team consisting of 1 Professor, 1 Associate Professor, 2 Assistant Professors, along with technical and non-technical staff.

Sr.no.	Name	Designation	Qualification
1.	Dr.Sarika Kandharkar	Professor	BAMS MD Dravyaguna
2.	Dr.Rajiv Bhosekar	Associate Professor	BAMS MD Dravyaguna
3.	Dr.Vaishali Balwande	Assistant Professor	BAMS MD Dravyaguna
4.	Dr.Purva Kharosekar	Assistant Professor	BAMS MD Dravyaguna

LAB TECHNICIANS

Sr.no.	Name	Qualification
1.	Mr. Vivek Joshi	B.sc Chemistry

MULTIPURPOSE STAFF

Sr.no.	Name	Qualification
1.	Mr. Amar Kamble	HSC

DRAVYAGUNA DEPARTMENT

ACHIEVEMENTS

A) Undergraduate Level

The department provides comprehensive theoretical and practical teaching of Dravyaguna as per NCISM guidelines and the curriculum of Maharashtra University of Health Sciences (MUHS), Nashik. Teaching is made simple and effective by incorporating recent advancements in natural drug research.

Students are given live demonstrations in medicinal plant gardens both within the campus and at nearby locations in Dharashiv. Educational visits such as Vanaspati Darshan are organized to enhance field knowledge. Regular class tests are conducted to maintain academic engagement, and students are encouraged to develop E-herbariums of important medicinal plants.

The department is equipped with well-prepared educational charts, including microscopic structures of medicinal plants, as well as Mahakashaya charts to facilitate effective learning and recitation for students.

B) Postgraduate Level

The department provides advanced teaching, training, and practical guidance in Dravyaguna to postgraduate students. Greater emphasis is placed on the clinical application of fundamental Ayurvedic principles, along with research methodology and its practical utility.

The department also promotes natural drug research by adopting an integrated approach that combines classical Ayurvedic knowledge with modern scientific methods such as cell line studies and animal studies, thereby generating globally acceptable data.

Postgraduate students actively participate in departmental seminars and regularly present their research work. Eminent experts are invited to deliver keynote lectures, enriching the academic environment. Students are also encouraged to participate in various national and international seminars during the academic year.

Microscopic study at department

Phytochemical tests

Phytochemical and analytical tools, reagents and glassware

Departmental museum - Wet specimens

Departmental museum - Wet specimens

Departmental museum - Dry specimens

शासकीय आयुर्वेद महाविद्यालय व रुग्णालय, धाराशिव
द्रव्यगुणविभाग

चरकोक्त महाकषाय

❋ जीवनीय गण
जीवकर्षभकौ मेदा महामेदा काकोली क्षीर काकोलि मुद्गपर्णी माषपर्ण्यौ जीवन्ति मधुकमिती दशेमानी जीवनीयानि भवन्ति ॥ (च.सू.१/१)

❋ बृंहणीय गण
क्षीरिणी राजक्षवकाश्वगन्धाकाकोलीक्षीरकाकोली वाटयायानिभद्रोदनीभारद्वाजी पयस्या ऋषगन्धा इति दशेमानि बृंहणीयानि भवन्ति॥ (च.सू.१/२)

❋ लेखनीय गण
मुस्ता कुष्ठहरीद्रावचातिवषा कटूरोहिणी चित्रक चिरिबल्वहैमवत्त्य इति दशेमानी लेखनियानि भवन्ति ॥ (च.सू.१/३)

❋ भेदनीय गण
सुवहार्का रूवकाग्निमुखी चित्रचित्रक चिरबिल्व शङ्खिनी शकुलादिनिस्वर्णशिरीण्य इति दशेमानी भेदनियानी भवन्ति ॥ (च.सू.१/४)

❋ संधानीय गण
मधुकमधुपर्णी पृष्णपर्णीम्बष्ठकी समङ्ग मोचरस धातकी लोध्र प्रियगुडकट्फलानिति दशेमानी सन्धानीयांनि भवन्ति ॥ (च.सू.१/५)

❋ दीपनीय गण
पिप्पली पिप्पलीमूल चव्य चित्रक श्रृंगवेराम्लवेतस मरिच अजमोदाभल्लातकास्थि हिङ्गुनिर्यासा इति दशेमानि दीपनीयानि भवन्ति॥ (च.सू.१/६)

❋ बल्य गण
ऐन्द्री ऋषभ्यतिरसार्ष्यप्रोक्तापयस्याश्वगन्धास्थिराहोणि बलातिबला इतिदशेमानि बल्यानि भवन्ति ॥ (च.सू.१/७)

❋ वर्ण्य गण
चन्दनतुङ्पद्मकोशीरमधुक मंञ्जिष्ठासारिवापयस्यासिता लता इतिदशेमानि वर्ण्यानि भवन्ति ॥ (च.सू.१/८)

❋ कंठय गण
सारिवेक्षुमूलमधुकपिप्पिली द्राक्षा विदारी कैटर्यहंसपदी बृहती कण्टकारिका इति दशेमानि कंठ्यानि भवन्ति ॥ (च.सू.१/९)

❋ हृदय गण
आम्रातक लिकुच करमर्द वृक्षाम्लवेतस कुवल बदर दाडिम मातुलुङ्गनीतिदशेमानि हृदयानि भवन्ति ॥ (च.सू.१/१०)

Departmental chart - Charakokta mahakashaya

Government Ayurvedic college, Dharashiv
Dravyaguna Vidnyan Department.

Latin name: *Tinospora cordifolia* (Willd.) Hook.f. & Thoms.
family: Menispermaceae.
Part used: Dried/fresh piece of mature stem

A) Morphology-
Large climbers on trees,Shrubs and Hedges occuring mostly in tropical regions
Root : Green photosynthetic, growing in thickness, becoming several aerial roots
Stem : Glabraus twinner, Clockwise, Cylindrical stem, Striate Stem,
Lenticels Present, Creamy white grey with deep clefts.
Leaves: - Simple, Exstipulate,Heart shaped ; Divergent reticulate venation
Deep sinus at the base. Membranous
Large basal lobes, obtuse or more or less cuspidate, 7-9 nerved , Petiolated
Inflorescence : Racemes from older stem and roots/terminal, axillary to leaves
flowers: Male flowers:- Clustered, Yellow in colour
Female flowers:- Solitary, Raceme, Elongating and often longer than the leaves, Axillary,
fruit: Red on Ripening, Size of a large Pea
Seeds: Broadly Ellipsoid with a slender dorsal ridge and a ventral depression, Slightely muricate
Distribution : Throughout India.

B)Macroscopic examination-
Fresh samples
Colour: Greenish, bark is light grey or creamy-white
Odour: None Bitter, mucilleginous
Taste: 02-03 cm in diameter
Size: Cylindrical
Shape: Stems rather succulent, soft, long filiform
Extra features: Stems and branches specked with white glands and warty surface due to presence of circular lenticels The bark is thin, papery and easily separable. Wood soft and perforated

C) Microscopic examination -
Cork: 5 to 6 layers, thick walled brownish and compressed cells.
The cork tissue is broken at some places due to opening of lenticels.
Cork Cambium: Thin walled, colourless, tangentially arranged cells.
Cortex: Outer zone: it consists of 3 to 5 rows of irregularly arranged, tangentially elongated collenchymatous cells.
Inner zone: It consist 5 to 7 layers of cortical cells, polygonal in shape filled with abundant simple and compound starch grains with or without hilum and prismatic crystals of calcium oxalate.
Pericycle: 7-9 layers of lignified sclerenchymatous cells, forming a continuous circle of arch.
Vascular bundle: Open and collateral, consits of xylem, externally surrounded by semi circular strips of phoem alternating with wide medullary rays.
Phoem consists of sieve tube, companion cells and phoem parenchyma, contain prismatic crystals of calcium oxalates.
Cambium consists of 1-2 layers of tangentially elongated cells.
Xylem consists of vessel elements, tracheids, parenchyma and fibres.
Medullary rays: Thin walled, elongated multiseriate parenchymatous cells, appear like spokes on wheel, filled with abundant starch grains.
Pith: Large thin walled parenchymatous cells containing starch grains.

Tinospora crispa | Tinospora sinensis

Varieties
Padma Guduchi(Tinospora Malabarica)(BPN)
DN-Kanda/PindaGuduchi
Species: -Tinospora Crispa
Tinospora Sinensis
Tinospora Malabarica
Tinospora Tormentosa

Adulterants/Substitutes
Pieces of thick aerial roots of same plant T.malabarica
The extract of guduchi (Guduchi sattva is adulterated with powder/flour of potato/sweet potato/arrow root/banana.

Guided by: **Student name:**

Departmental chart - Microscopy of specimen

Field Visit

Field Visit

Herbal garden

PG students

Bhavprakash herbal garden information chart

E learning material - QR code scanning system

Bhavprakash garden - Herbs with identification tags

Activity session

Activity session