RAMAIAH UNIVERSITY OF APPLIED SCIENCES

DEPARTMENT OF PHARMACOGNOSY

SANJEEVANI

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IT'S PUZZLE TIME!
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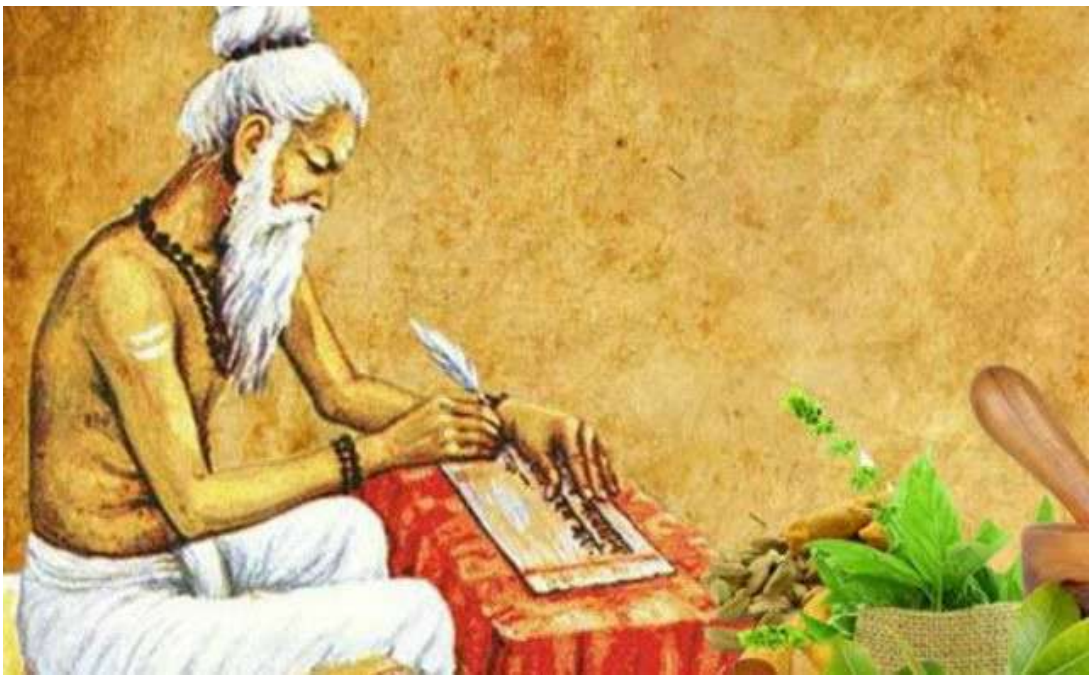
Charati-iti-Charakaha



~ A master physician who traversed distances offering medical service

Lot has been said, discussed, and deliberated about the traditional Indian system of Ayurveda. While we must appreciate the knowledge and vastness of Ayurvedic sciences, we must also acknowledge the fact that there are multiple sources from which this knowledge has been emancipated.

One such entity, and by all means, an authority on Ayurveda, is Maharishi Charaka. Charaka lived somewhere between the 7th – 2nd century BCE and has been credited for his path-breaking contribution to the field of Ayurveda. He is widely known for his greatest work, the Charaka Samhita, which is a simplified and compiled version of the Agnivesha Tantra written by another scholar, Agnivesha.

Originally written in Sanskrit, this magnum opus contains a vivid description of various aspects encompassing all the branches of Ayurveda with special emphasis on general medicine. The significance of the Charaka Samhita is so paramount that it has been accorded the Brihat Trayis status (one of the three greatest Samhitas).

Charaka's oath is still administered to healthcare professionals across India before they enter practice and is a constant reminder for everyone that life is all about making more lives better.

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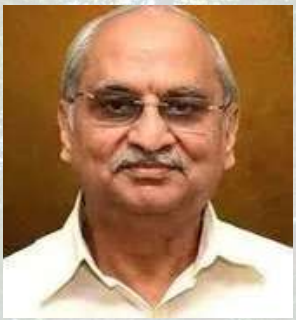

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Editor's Note

Hello Readers
It gives me immense pleasure in releasing the second issue of the quarterly E-Newsletter "Sanjeevani" from the Department of Pharmacognosy, Faculty of Pharmacy, Ramaiah University of Applied Sciences. I am really encouraged by the feedback received from the readers of inaugural issue.

This issue offers interesting articles on advanced agriculture techniques; few important medicinal herbs, a Kannada article on Sarphagandha, Vatika in vicinity, and various departmental activities. I would like to thank all the editorial board members and the student members for their effort and contribution in bringing out this issue. Any criticism, opinion and encouragement from the readers will be highly appreciated. For any queries, suggestions, feedback or submission of articles please do not hesitate to contact our team via fphsanjeevani@gmail.com

Dr. Ashoka Babu VL
Editor – Sanjeevani

HYDROPONICS - The future of farming!

Hydroponics is a strategy for thriving plants without the requirement of soil. Engrossing this methodology, balanced nutrients are absorbed by the roots which are further dissolved in water to fulfil the requirements of plants. A large number of media supports plant growth, which is also known as "the cultivation of plants without soil"

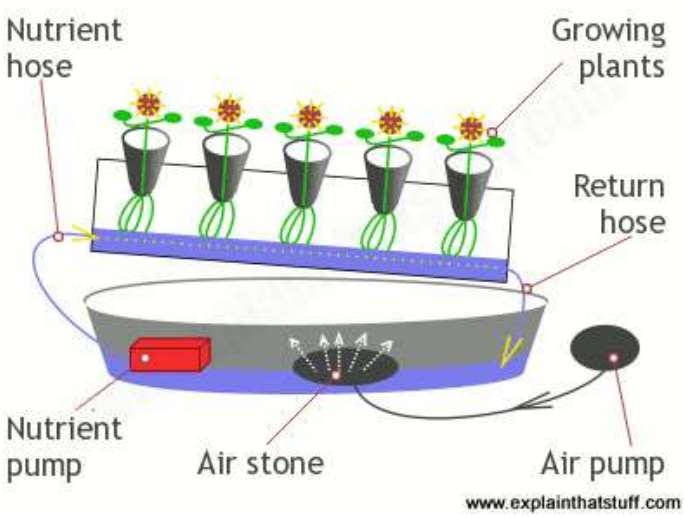
What is a hydroponic system?

The term was imitated from ancient Greek words, such as HYDRO which represents water and PONOS which represents labor, which basically means "WATER WORKING".

It works on the photosynthesic process like all plants do: $CO_2 + H_2O$ ----> Glucose + Oxygen

The term SOIL is not mentioned anywhere over here so we get the proof that plants grow in absence of soil. Water helps to provide hydration, nutrients and oxygen for plants without the need for soil. From watermelons to jalapeños to orchids, plants are enriched under the planned arrangements of hydroponics. Using the least space provided, it takes 90% less water compared to traditional agriculture, and with a tactful design, alluring flowers and fruits are grown in half time in these hydroponic gardens. This kind of gardening system benefits with stronger yields, superior quality, and rapid growth. As a plant is grown in soil, the roots tend to search for required nutrition perpetually searching for the necessary nutrition to support the plants.

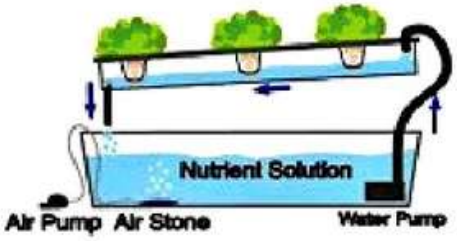
Mechanism behind hydroponics



Types of hydroponics

Nutrient Film Technique (NFT)

Water flows like a stream in a continuous loop past plant roots.

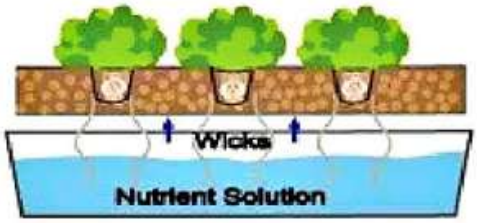


Deep Water Culture (DWC)

Plants float directly on top of the nutrient solution.
An air pump and air-stones provide oxygen for the roots.

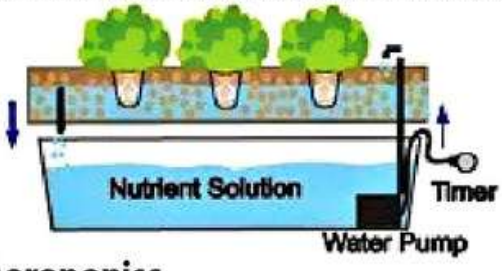
Wick System

Wicks are used to draw water up to the root zone from a reservoir of nutrient solution.



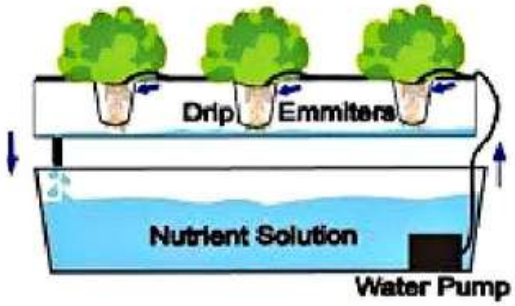
Ebb & Flow

Nutrient solution is pumped into a planting tray filled with gravel or clay pelets. The plant tray fills up with nutrient solution that is then flushed back into the reservoir on a timed cycle.



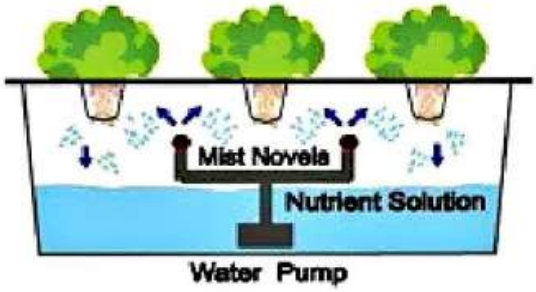
Drip Recovery System

An irrigation line and drip emitters are used to deliver the nutrient solution exactly where plants need it.



Aeroponics

Plant roots are misted with nutrient solution on a timed schedule.



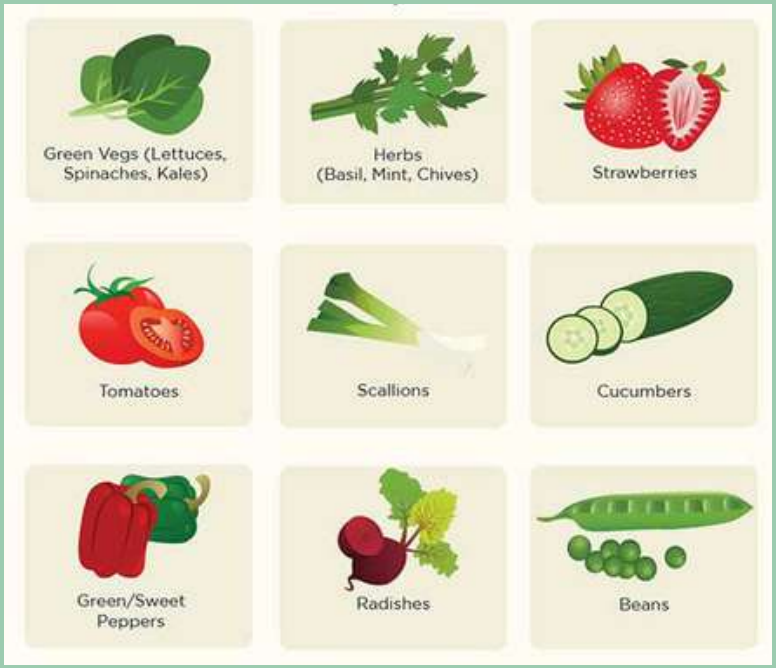
Materials required in hydroponics

1. Coco Coir - helps in enormous water retention and has an excellent water ratio.
2. Rockwool - A fibrous material which is dense and rigid made from melted rock which is not non-biodegradable or hazardous to health as its pH is balanced and it has great water retention.
3. Pellets - Extended clay is the most prominent medium for draining quickly, the pH is neutral which makes it reusable for water culture and water flow, and the 50-50 mixture of Coco and clay which creates a respiration medium.
4. Perlite (also known as potting soil) + Coco Coir + Vermiculite type of synthetic materials undergoes calefaction so that it produces light and porous material.
5. Nutrition Solutions - In Hydroponics, controlling nutrition is very easy, from these solutions nitrogen-rich, phosphorous and potassium-rich plants grow which results in large numbers of crops of delicious fruits and tasty vegetables.

Benefits of hydroponic systems

- The crops are 3 to 10 times more which is cultivated in the same amount of space.
- the crops can be produced twice if the hydroponic system is well managed.
- it reduces the time of harvest and increases the consumption and nutritional value of the end product
- Helps in Indoor farming as the climate is controlled which means environment farms can be existing in conditions where weather and soil are not suitable for traditional food production.
- no chemical fertilizers or pest control is needed in this system.

What can we grow using hydroponics?



- Simran Sahani
(III BPharm)

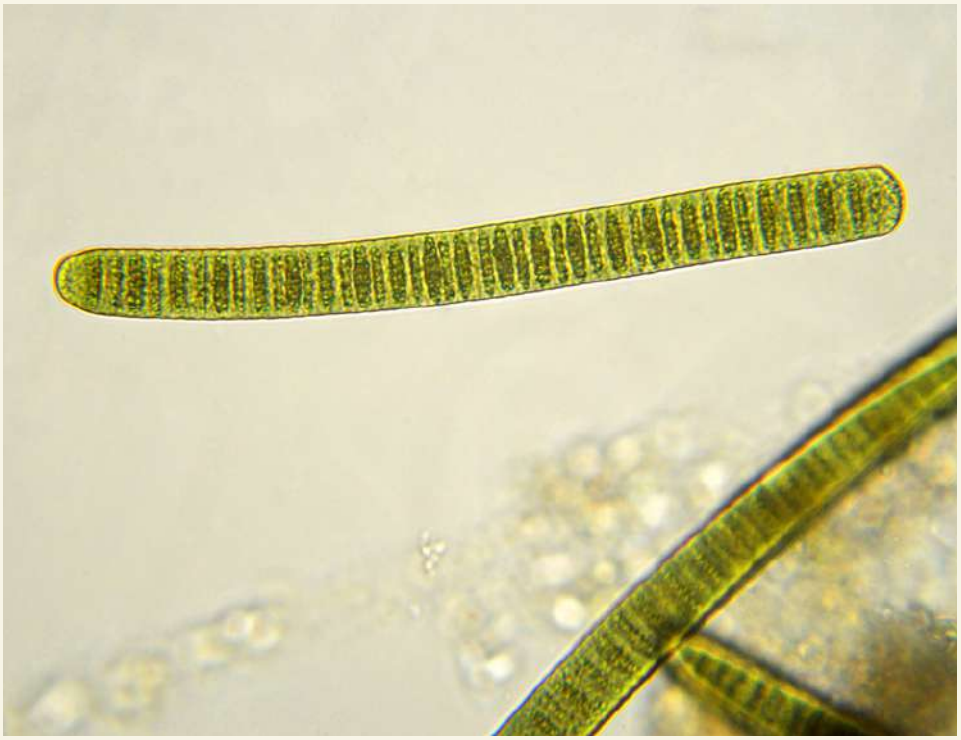
- The Gardening of Hydroponics is very clean and extremely easy, which only requires very little effort.
- As the roots get direct nutrients they tend to grow faster and through small roots, many new plants are grown.
- basically, the hydroponically grown garden requires only about one-fifth of the space compared to a soil garden.
- there is no wastage of water through evaporation as the nutrient solution is directly introduced to the plant roots.
- Up to 90% more efficient use of water.
- Hydroponic science allows everyone to enjoy locally grown products and to expand their own food production.
- It allows everyone to enjoy by just following simple procedures without the worries of weather or high expense or delay.
- The gardens of Hydroponics provide the healthiest crops with high yields which are consistently reliable.

Conclusion

Hydroponic farming is the next level of big development which is made in the world of agriculture. It utilizes revolutionary technology that offers tons of benefits to all sorts of commercial farmers. This technology is exciting because there is no need for soil, pesticides and a lot of water compared to traditional farming. The people living in small areas or on crowded streets can also grow vegetables and Barre which is cheap and beneficial through this efficient hydroponic system.

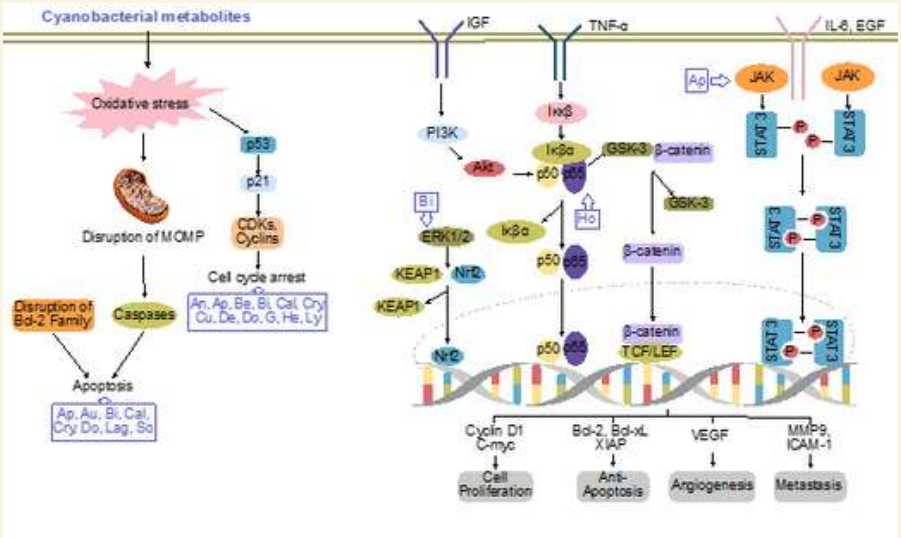
Cyanobacteria - A Treasure for Health Care!

Our environment is a house for a wide variety of living organisms, starting from single-celled organisms like *E. coli* to multi-celled organisms like animals. Investigation of primitive species like cyanobacteria is becoming a major area for newer drug discovery. In this article, I would like to elaborate on the recent drug discoveries from a species called cyanobacteria. Cyanobacteria are considered to have a long origin and development of life and are responsible for the origin of cellular respiration and photosynthesis of higher organisms.



Many scientists have started working on cyanobacteria and discovered about 38 secondary metabolites having different therapeutic activities. Among the 38 different metabolites, 8 have antiprotozoal activity, 7 have antibacterial activity, 2 have antiviral activity, 6 show cytotoxic activity, 7 have protease inhibiting activity, and one has calcium channel inhibiting activity.

Cancer is becoming a leading cause of death in developed and developing countries. As the progression of cancer increases and resistance develops against existing drugs, there is an urgent need for the development of newer anticancer drugs. Screening of cyanobacterial extract was initiated in the laboratory of Moore.



A few examples of secondary metabolites possessing anti-tumor or cytotoxic properties are listed below

1. Cryptophycin-1 and cryptophycin-52 are depsipeptides isolated from the cyanobacterium *Nostoc* species and found to be effective against lung, breast, nasopharyngeal and colorectal cancer. They act by depleting the microtubule through their interaction with tubulin proteins, thereby preventing cell division and inducing apoptosis.

2. Curacin A is considered to be a powerful cancer cell poison procured from the strains of the tropical marine cyanobacterium *Lyngbya maluscula* and found to be effective against breast, colon, and rectal cancer. They act by blocking cell cycle continuation by combining with the colchicine binding site on tubulin and prevent microtubule polymerization.

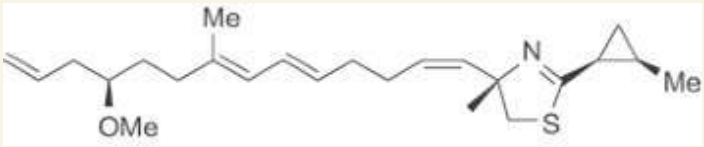


Fig: Curacin A

3. Apratoxin A is a cytotoxic substance obtained from marine cyanobacterium *Lyngbya majuscule*. They act by arresting the cell in the G-1 phase of the cell division and induce programmed cell death.

4. Somocystinamide A is a cytotoxic substance obtained from the marine cyanobacterium Lyngbya majuscule. They act as pluripotent inhibitors of angiogenesis and also inhibit tumor cell proliferation. They are found to be effective against neuroblastoma.

Fig: *Nostoc* species

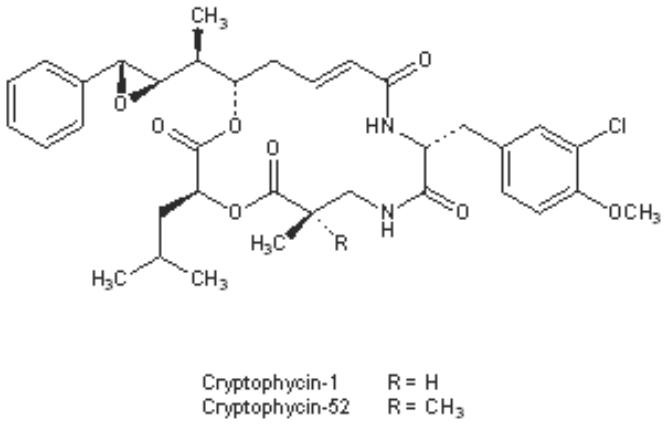


Fig: Cryptophycins - cytotoxic cyclic depsipeptides with potential for tumor targeting

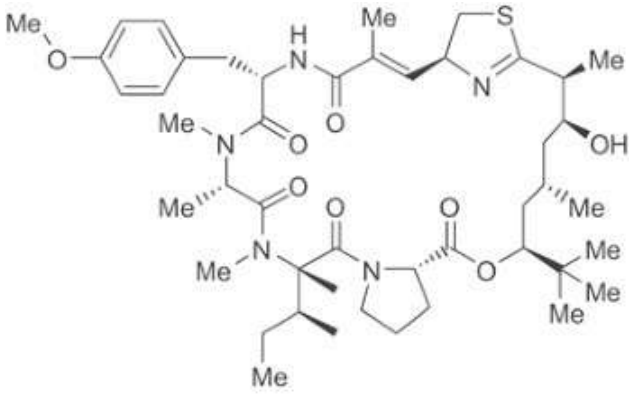


Fig: Apratoxin A

There are many other cytotoxic drugs obtained from different species of cyanobacteria but their actual mechanism of action is not known.

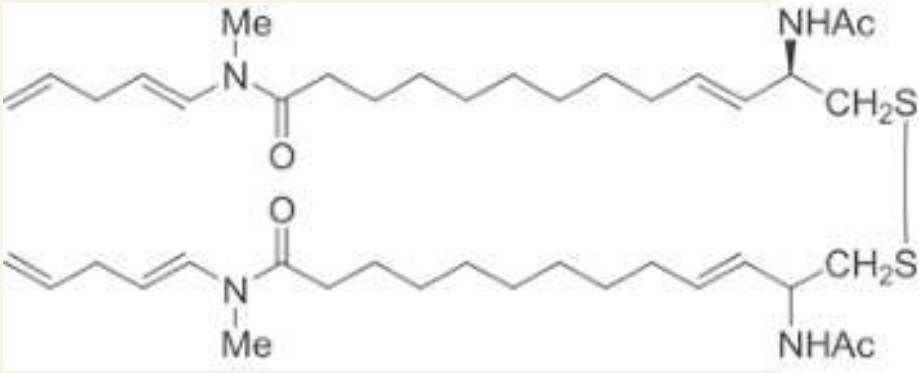


Fig: Somocystinamide A

Fig: *Lyngbya majuscula*

Conclusion

Cyanobacteria are considered to be a family of unique photosynthetic oxygenic bacteria which are found to have an essential role in the development of lead molecules with therapeutic effects over the past 2 decades. Several metabolites obtained from cyanobacteria are found to have broad-spectrum activities. Despite having many effective therapeutic drugs, very few cyanobacterial metabolites have entered clinical trials. Not only cyanobacteria, but there are also many other organisms like sponges, actinomycetes, algae, etc are found to produce a large number of secondary metabolites having a broad spectrum of therapeutic activity. In my opinion as a pharmacist, many organisms with a simple level of organization deserve more scientific attention and carry out many investigations.

References

1. Thajuddin, N. & Subramanian, G. Cyanobacterial biodiversity and potential application in biotechnology. Curr. Sci. 89, 47–57 (2005).
2. Gademann, K. & Portmann, C. Secondary metabolites from cyanobacteria: complex structures and powerful bioactivities. Curr. Org. Chem. 12, 326–341 (2008).
3. Jaspars, M. & Lawton, L. A. Cyanobacteria- a novel source for pharmaceuticals. Curr. Opin. Drug Dis. Dev., 1, 77–84 (1998)

- M. Rashikamani
(III BPharm)

Vāṭikā In Vicinity

Scientific Name: *Araucaria heterophylla*

Common name:
Norfolk Island Pine

Family: Araucariaceae

Geographical Location:
Norfolk Island (Australia), New Zealand, Oceanic countries in the Pacific Ocean region

Cultivation:
The Norfolk Island Pine can be grown in regions outside its native location quite easily. This is because it can adapt comfortably to various soils. With appropriate water and soil, it can become a tree scaling a height of up to 200 feet in the Pacific Ocean region and 60-100 feet in the sub-tropical region. It can also be grown as a houseplant with less amount of watering and minimal space.

Morphological characteristics:

Average height: 60-100 feet

Leaves

- Filiform, lanceolate or linear
- Entire leaf margin
- Dark green in color which are arranged in a dense, spiral and scale-like patter having sharp and pointed ends
- 1 inch length

Bark:

- Thick bark which is brown in color having a width of 12-20 feet

Chemical Constituents:

Foliage oil:

- 13-epi-dolabradiene (42.7%)
- Beyerene (22.2%), rimuene (13.7%)
- Dolabradiene (3.9%)

Resin Oil:

- α-copaene (29.9%)
- Germacrene D (21.4%)
- γ-gurjunene (9.7%)
- δ-cadinene (7.1%)
- Sandaracopimara-8(14),15-diene (6.5%)

Uses:
Uses are primarily indigenous and ethnobotanical. Tribes of various regions use seeds of this tree for various purposes and commercialisation of plant parts of Norfolk Island Pine is discouraged for better preservation.

ಸರ್ಪನೇತ್ರಿ ಸರ್ಪಗಂಧಿ

ಆಧುನಿಕ ಕಾಲದಲ್ಲಿ ಸಸ್ಯಗಳಿಗೆ ಇರುವ ಮಹತ್ವವನ್ನು ನಾವು ಅರಿಯದೆ ಅವುಗಳ ಅಳಿವಿಗೆ ಕಾರಣವಾಗುತ್ತಿದ್ದೇವೆ. ಇದಕ್ಕೆ ಮೂಲ ಕಾರಣ ಸಸ್ಯಗಳ ಬಗ್ಗೆ ಸಂಪೂರ್ಣ ಮಾಹಿತಿಯನ್ನು ದಾಖಲಿಸದೆ ಇರುವುದು. ಇದನ್ನೆಲ್ಲಾ ಅರಿತು ಎಚ್ಚೇತುಕೊಂಡು, ಮುಂದಿನ ಪೀಳಿಗೆಗೆ ನಾವು ದಾರಿ ಮಾಡಿಕೊಡಬೇಕು

ಅರ್ಥಾತ್: ನಕುಲಿಕ, ಸುರಸ, ನಾಗಸುಗಂಧ, ಗಂಧನಾಕುಳಿ, ನಕುಲೇಷ್ಟ, ಭುಜಂಗಾಕ್ಷಿ, ಸರ್ಪದ್ರಿ, ವಿಷ್ಣುಶನಿ. ಇವು ಸರ್ಪಗಂಧಿಗೆ ಇರುವ ಅನೇಕ ನಾಮಧೇಯಗಳು. ಇದು ಸಂಕೋಚಕ, ಕಹಿ ರುಚಿಯಲ್ಲಿ ಕಟು ಮತ್ತು ಸಾಮರ್ಥ್ಯದಲ್ಲಿ ಬಿಸಿಯಾಗಿರುತ್ತದೆ. ಸರ್ಪಗಂಧವು ಹಾವು, ಜೇಡ, ಚೇಳು, ಮತ್ತು ಇಲಿಗಳ ವಿಷವನ್ನ ನಿರ್ವಿಷಗೊಳಿಸುತ್ತದೆ. ಇದು ಜ್ವರ, ಗಾಯ ಮತ್ತು ಹುಳಗಳ ಭಾದೆಯನ್ನು ಸಹಾ ನಿವಾರಿಸುತ್ತದೆ.

ನಾಕುಲಿ ಸುರಸ ನಾಗಸುಗಂಧಾ ಗಂಧನಾಕುಲೀ |
ನಕುಲೇಷ್ಟಾ ಭುಜಂಗಾಕ್ಷಿ ಸರ್ಪಾಕೀ ವಿಷನಾಶಿನೀ ॥
ನಾಕುಲಿ ತುವರ ತಿಕ್ತಾ ಕಟುಕೋಷ್ಣಾ ವಿನಾಷಾಯೇತ್ |
ಭೋಗಿಲತಾವೃಶ್ಚಿಕಾಖು ವಿಷಜ್ವರಕ್ರಿಮಿವಣಾನ್॥

ಸರ್ಪಗಂಧಿ ಸಸ್ಯವು ಪೂರ್ಣಕಾಲಿಕ (ನಿತ್ಯಹರಿದ್ವರ್ಣ). ನೆಟ್ಟಗೆ , ರೋಮರಹಿತ ಧೀರ್ಘಕಾಲಿಕ ಪೊದೆಸಸಿಯಾಗಿದ್ದು.

ಸರಿಸುಮಾರು 60 ಸೆಂ.ಮೀಟರ್ ಎತ್ತರದವರೆಗೆ ಬೆಳೆಯುತ್ತಿದೆ.ವೈಜ್ಞಾನಿಕವಾಗಿ ಈ ಸಸ್ಯವನ್ನ ರೌವೊಲ್ಫಿಯಾ ಸರ್ಪೆಂಟಿನಾ ಎಂದು ಕರೆಯುತ್ತಾರೆ. ಈ ಗಿಡಮೂಲಿಕೆಯ ಬೇರುಗಳು ತೆಳು ಕಂದು ಬಣ್ಣದ ಕಾರ್ಕ್ನೊಂದಿಗೆ ಟ್ಯೂಬರಸ್ ಆಗಿರುತ್ತದೆ. ಈ ಸಸ್ಯದ ಪರ್ಣಗಳು ಸಾಮಾನ್ಯವಾಗಿ ಮೂರು ಸುರುಳಿಗಳಲ್ಲಿ ಕಾಣಲು ಸಿಗುತ್ತದೆ. ಹಾಗೆ ಅವುಗಳ ಮೇಲೆ ಪ್ರಜ್ವಲಿಸುವಂತಹ ಹಸಿರು ಮತ್ತು ಕೆಳಗೆ ತೆಳು ಹಸಿರು ಬಣ್ಣದಲ್ಲಿ ಇರುತ್ತದೆ. ಪರ್ಣಗಳ ಬುಡವು ತೆಳ್ಳಗಿರುತ್ತದೆ. ಮತ್ತು ಪ್ರಕೃತಿಯಲ್ಲಿ ಮೊನಚಾದಂತಿರುತ್ತದೆ. ಹಾಗೆ ಈ ಸಸ್ಯದ ತೊಟ್ಟುಗಳು ಉದ್ದವಾಗಿರುತ್ತದೆ. ಸರ್ಪಗಂಧಿಯ ಹೂಗಳು ಬಿಳಿ ಮತ್ತು ನೇರಳೆ ಬಣ್ಣದಲ್ಲಿ ಕಂಡುಬರುತ್ತದೆ. ಸರ್ಪಗಂಧಿಯ ಹೂಗಳು ಸರ್ಪದ ಕಣ್ಣಿಗೆ ಹೋಲುವಂತಿರುತ್ತದೆ. ಕೊರೊಲ್ಲಾ ಕೊಳವೆಗಳ ಆಳದಲ್ಲಿ ಮಕರಂದವು ಸಂಗ್ರಹಿಸಿರಲಾಗುತ್ತದೆ. ಪುಷ್ಪಮಂಜರಿಗಳು ಸಾಕಷ್ಟು ಉದ್ದವಾಗಿದ್ದು ಕಾಂಡಗಳು ಧೃಡವಾಗಿರುತ್ತದೆ. ಪುಷ್ಪಪಾತ್ರೆಯು ಪ್ರಕಾಶಮಾನವಾದ ಕೆಂಪು ಬಣ್ಣದಿಂದ ತುಂಬಿರತ್ತದೆ. ಕೊರೊಲ್ಲಾ ಸಾಮಾನ್ಯವಾಗಿ ಪುಷ್ಪಪಾತ್ರೆಗಿಂತ ಉದ್ದವಾಗಿರುತ್ತದೆ. ಈ ಸಸ್ಯದ ಡ್ರೂಪ್ ಗಳು ಸ್ವಲ್ಪ ಪರಸ್ಪರ ಅಂಡಾಕಾರ ರೂಪದಲ್ಲಿ ಮತ್ತು ನೇರಳೆ ಕಪ್ಪು ಬಣ್ಣದಲ್ಲಿ ಕಂಡು ಬರುತ್ತದೆ. ಈ ಸಸ್ಯದ ಹೂಗಳು ಮಾರ್ಚ್ ಇಂದ ಮೈವರೆಗೆ ಅರಳುತ್ತವೆ.

ರೌವೊಲ್ಫಿಯಾ ಸರ್ಪೆಂಟಿನಾ ಅದರ ಔಷಧಿಯ ಗುಣಗಳಿಗೆ ಪ್ರಖ್ಯಾತವಾಗಿದೆ. ಇದು ಹೆಚ್ಚಾಗಿ ಅಧಿಕ ರಕ್ತದೊತ್ತಡಕ್ಕೆ ವ್ಯಾಪಕವಾಗಿ ಬಳಸಲಾಗುವ ಅತ್ಯುತ್ತಮ ಪರಿಹಾರಗಳಲ್ಲಿ ಒಂದಾಗಿದೆ. ಹಾಗೂ ಇದು ನಿದ್ರಾಜನಕ ಮತ್ತು ಕೋಪವನ್ನು ಶಾಂತಗೊಳಿಸುಲ್ಲಿ ಎತ್ತಿದ ಕೈ. ರೌವೊಲ್ಫಿಯಾ ಸರ್ಪೆಂಟಿನಾವು 50 ಕ್ಕೂ ಹೆಚ್ಚಿನ ವಿಭಿನ್ನ ಆಲ್ಕಲಾಯ್ಡ್ ಗಳೊಂದಿಗೆ ಅನೇಕ ಜೈವಿಕ ಸಕ್ರಿಯ ರಾಸಾಯನಿಕಗಳನ್ನು ಒಳಗೊಂಡಿರುತ್ತದೆ. ಅವುಗಳಲ್ಲಿ ಮುಖ್ಯವಾಗಿ ಅಜ್ಮಲಿನ್, ಅಜ್ಮಾಲಿಸಿನ್, ಇಂಡೋಬಿನ್ , ಇಂಡೋಬಿನೈನ್ , ಅಜ್ಮಾಲಿಮೈನ್ , ಸರ್ಪೆಂಟೈನ್, ಸರ್ಪೆಂಟಿನೈನ್, ಡೆಸರ್ಪಿಡಿನ್ , ರೆಸರ್ಪಿನೈನ್, ರೆಸರ್ಪಿಲಿನ್, ರೆಸಿನ್ನಮೈನ್, ಯೋಹಿಂಬೈನ್ ಮತ್ತು ರೆಸರ್ಪೈನ್ ಈ ಸಸ್ಯದ ಶಾಂತ ಉಪಯುಕ್ತ ಆಲ್ಕಲಾಯ್ಡ್ ಆಗಿದೆ. ಈ ಸಸ್ಯದ ಸರಿಸುಮಾರು 90 ಪ್ರತಿಶತವು ಈ ಸಸ್ಯದ ಟ್ಯೂಬರಸ್ ಬೇರುಗಳಲ್ಲಿ ಕಂಡು ಬರುತ್ತದೆ.

ರೌವೊಲ್ಫಿಯಾ ಸರ್ಪೆಂಟಿನಾ ವರ್ಗೀಕರಣ: ಸಾಮ್ರಾಜ್ಯ : ಪ್ಲಾಂಟೇ ; ವಿಭಾಗ : ಮ್ಯಾಗ್ನೋಲಿಯೋಫೈಟಾ : ವರ್ಗ : ಮ್ಯಾಗ್ನೋಲಿಯೋಪ್ಸಿಡಾ : ಆದೇಶ : ಜೆಂಟಿಯಾನಲ್ಸ್ : ಕುಟುಂಬ : ಅಪೊಸಿನೆಸಿ ಕುಲ : ರೌವೊಲ್ಫಿಯಾ : ಜಾತಿ : ಸರ್ಪೆಂಟಿನಾ.

ಆವಾಸಸ್ಥಾನ: ಭಾರತ, ಶ್ರೀಲಂಕಾ, ಬರ್ಮಾ, ಥೈಲ್ಯಾಂಡ್ ದೇಶಗಳಲ್ಲಿ ಈ ಸಸ್ಯವು ಸಾಮಾನ್ಯವಾಗಿ ಕಾಣಲು ಸಿಗುತ್ತದೆ. ಭಾರತದಲ್ಲಿ ಪಂಜಾಬ್ ನಿಂದ ನೇಪಾಳ್, ಸಿಕ್ಕಿಂ, ಮತ್ತು ಭೂತಾನ್ ವರೆಗೂ ಉಪ ಹಿಮಾಲಯದ ಪ್ರದೇಶದಲ್ಲಿ ವಿತರಿಸಲ್ಪಡುತ್ತದೆ . ಈ ಸಸ್ಯವು ಗಂಗಾ ಬಯಲು, ಅಂಡಮಾನ್ , ಪೂರ್ವ ಮತ್ತು ಪಶ್ಚಿಮ ಘಟ್ಟಗಳ ಕೆಳಗಿನ ಬೆಟ್ಟಗಳಲ್ಲಿಯೂ ಕಂಡು ಬರುತ್ತದೆ. ಭಾರತದಲ್ಲಿ ಇದು ಸಮುದ್ರ ಮಟ್ಟದಿಂದ 4000 ಸಾವಿರ ಅಡಿ ಎತ್ತರದಲ್ಲಿ ತೇವಾಂಶವುಳ್ಳ ಪತನಶೀಲ ಅರಣ್ಯ ಮತ್ತು ನೆರಳಿನ ಪ್ರದೇಶದಲ್ಲಿ ಕಂಡು ಬರುತ್ತದೆ. ಸರ್ಪಗಂಧಿಯೂ ಒಂದೇ ಪ್ರದೇಶದಲ್ಲಿ ದೊಡ್ಡ ಪ್ರಮಾಣದಲ್ಲಿ ಬೆಳೆಯುವುದಿಲ್ಲ , ಸಂಕ್ಷಿಪ್ತವಾಗಿ ಭಾರತದಲ್ಲಿ ಅನೇಕ ಭಾಗಗಳಲ್ಲಿ ಬೆಳೆಸಲಾಗುತ್ತದೆ.

ದೋಷದ ಮೇಲೆ ಪರಿಣಾಮಗಳು: ಸರ್ಪಗಂಧಿಯೂ ವಾತ ಮತ್ತು ಕಫ ದೋಷವನ್ನು ಸಮತೋಲಗೊಳಿಸುತ್ತದೆ. ರೌವೊಲ್ಫಿಯಾ ಸರ್ಪೆಂಟಿನಾದ ಆರೋಗ್ಯ ಪ್ರಯೋಜನಗಳು: ಈ ಗಿಡಮೂಲಿಕೆಯೂ ಹೃದಯ ಬಡಿತವನ್ನು ಕಡಿಮೆ ಮಾಡುವ ಸಾಮರ್ಥ್ಯ ಹೊಂದಿದೆ. ಮತ್ತು ರಕ್ತದೊತ್ತಡವನ್ನು ಕಡಿಮೆ ಮಾಡುವ ಮೂಲಕ ರಕ್ತನಾಳಗಳನ್ನು ಹಿಗ್ಗಿಸುತ್ತದೆ. ಮಧುಮೇಹ ಚಿಕಿತ್ಸೆಗೆ ಬಹಳ ಉಪಯುಕ್ತ. ನಾಗರಹಾವು, ಚೇಳು, ಸರೀಸೃಪಗಳ ಕಡಿತ ಮತ್ತು ಯಾವುದೇ ವಿಷಕಾರಿ ಕೀಟಗಳ ಕುಟುಕು ಗಳ ಚಿಕಿತ್ಸೆಗಾಗಿ ಈ ಗಿಡಮೂಲಿಕೆಯನ್ನು ಪ್ರಪಂಚದ ಹಲವಾರು ಭಾಗಗಳಲ್ಲಿ ಉಪಯೋಗಿಸಲಾಗುತ್ತದೆ.

ಸರ್ಪಗಂಧಿಯ ಬೇರುಗಳು ಮತ್ತು ಎಲೆಗಳನ್ನು ವೈದ್ಯಕೀಯ ಚಿಕಿತ್ಸೆಗಳಲ್ಲಿ ಹೆಚ್ಚು ಬಳಸಲಾಗುತ್ತದೆ. ರೌವೊಲ್ಫಿಯಾ ಸರ್ಪೆಂಟಿನಾದ ಅಡ್ಡ ಪರಿಣಾಮಗಳು: ಪಾದಗಳು ಮತ್ತು ಕೆಳಗಿನ ಕಾಲುಗಳಲ್ಲಿ ಊತ ಸಂಭವಿಸಬಹುದು. ಅತಿಸಾರ, ವಾಕರಿಕೆ ಮತ್ತು ವಾಂತಿ ಮತ್ತು ತಲೆಸುತ್ತು .

ನಯನ್ ಕುಮಾರ್ ಎಂ
3ನೇಯ ಬಿ ಫಾರ್ಮ್

ಸರ್ಪಗಂಧಿಯ ಹಾಗೆ ಇನ್ನೂ ಅನೇಕ ಸಸ್ಯಗಳ ವೈಜ್ಞಾನಿಕ ಉಪಯೋಗಗಳು ನಮಗೆ ತಿಳಿದಿಲ್ಲ. ಅವುಗಳನ್ನು ಹುಡುಕಿ ಸಂರಕ್ಷಣೆ ಮಾಡಿ ಅವುಗಳನ್ನ ಸೂಕ್ತ ಸಮಯದಲ್ಲಿ ಬಳಸಬೇಕು. ಮುಂದಿನ ಪೀಳಿಗೆಗೆ ನಾವು ಅಣಿಮಾಡಿಕೊಡಬೇಕು ಹೊರೆತು ಎಲ್ಲದರ ಅಳಿವಿಗೆ ಕಾರಣವಾಗಬಾರದು.

"ಪರಿಸರ ಸಂರಕ್ಷಣೆ ನಮ್ಮೆಲ್ಲರ ಹೊಣೆ ".....

ಉಲ್ಲೇಖ: ಡಾ! ಮೀನಾಕ್ಷಿ ಚೌಹಾಣ್ ರವರ ಲೇಖನ : ಜಾಲತಾಣ: ಪ್ಲಾನೆಟ್ ಆರ್ಯುವೇದ

Shikakai - A traditional alternative to chemical shampoo

In recent times, there has been a shift towards a more conscious use of cosmetics as people are beginning to become aware of the harmful effects of various chemicals. People all over the globe have started to opt for herbal alternatives to conventional cosmetics in light of such effects.

Shampoos are the most commonly used hair cosmetics that are not only meant to cleanse the hair but also to provide other benefits like conditioning the hair, ensuring hair is free from dandruff or lice, and above all safe for use.

Conventional chemical-based shampoos are known to have a lot of harmful ingredients, the most common of which are sulphates like Sodium Lauryl Sulphate (SLS) and Sodium Laureth Sulphate (SLES) which are effective cleaning agents but are believed to carry harmful hormone-disrupting agents that can be cancerogenic. Further, ingredients like Polyethylene Glycols (used for their conditioning effect), artificial fragrances and silicon (used to give shine to hair) among others are also known to have different harmful effects.

Senegalia rugata also known as Shikakai has been used traditionally for hair care in the Indian Subcontinent since ancient times. The name shikakai comes from the Tamil word சிகைக்காய் cikaikkāy which literally translates to Hair Fruit (cikai 'hair'+kāy 'fruit'), and rightly so as it is known to promote hair growth, reduce hair fall, control dandruff among other benefits.

Traditionally used as a shampoo, it is an excellent alternative to conventional shampoo as it provides equivalent benefits with almost no side effects. It is used for cleansing the scalp, strengthening the hair from roots, providing relief from scaling and also removing itching, dryness, greasiness and scaling of the scalp.

It is prepared by grinding the fruit pods, leaves and bark of the plant into a powder, and then making it into a paste. While this traditional shampoo does not produce the normal amount of lather that a sulphate-containing shampoo would, it is considered a good cleanser. It is mild, has a naturally low pH, and does not strip hair of natural oils. An infusion of the leaves has been used in anti-dandruff preparations.

Shikakai is high in saponins based on acacic acid. These saponins have foaming properties and show an antibacterial effect, which ensures that your follicles stay clean and unclogged, and provides an optimal environment for the hair to grow in. The saponins in Shikakai cleanse the scalp and hair of impurities and prevent sebum production. They also slow or stop the production of 5-lipoxygenase (5-LOX), which is responsible for triggering inflammation and itching. Shikakai Extract is also rich in polyphenols, which are antioxidants that are involved in the protective response to different stresses, including ultraviolet radiation. Studies have shown that plant-based polyphenols have had a positive impact on hair growth, slowing hair loss and helping to regrow hair, supposedly due to the anti-redness benefits of polyphenols at the scalp level.

Traditional Benefits Of Shikakai For Hair include:

1. Shikakai can make your hair soft and shiny
2. Heals your scalp and prevents the agony of a dry scalp
3. Fight that stubborn dandruff with shikakai
4. Shikakai boosts hair growth
5. Is a gentle detangler
6. Shikakai prevents dreadful split ends
7. Delays greying of hair
8. Works on hair lice
9. Works as a natural hair cleanser
10. Soothes an itchy scalp

Shikakai is a great traditional remedy for most common hair issues making it an amazing yet safe alternative to chemical shampoo. t is an excellent natural hair cleanser whose benefits can be reaped by using I a commercially available shampoo that contains shikakai or by making a simple shikakai shampoo at home using a few shikakai pods, a few seedless reetha, some dried amla and fenugreek seeds that are soaked in a big bowl of water overnight and then boiled together till soft. This is then strained to give a simple shampoo that can then be directly used on hair.

- Shaleen Aditya Gupta
(III BPharm)

DEPARTMENTAL ACTIVITIES

Release of Inaugural Issue of Sanjeevani Newsletter

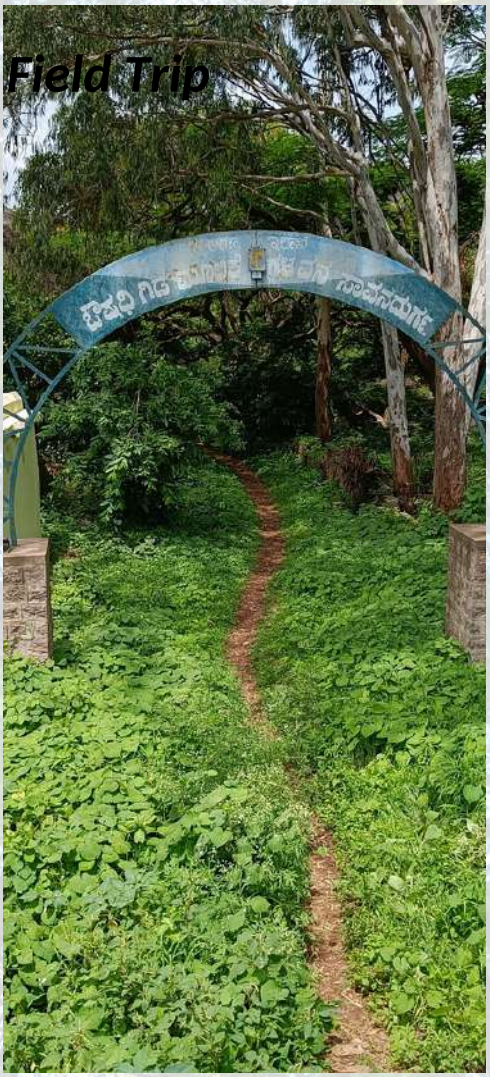
The first issue of "Sanjeevani "a quarterly E- news letter from the Department of Pharmacognosy was released by our Honorable Vice Chancellor Dr. Kuldeep K Raina., Dr. S Bharth, Dean, Faculty of Pharmacy and other faculty members of the department were also present during the event

National Level Webinar

A virtual national level webinar with live demo was organized in collaboration with Anchrom Enterprises Mumbai.

Ms Sneha Singh, Application specialist delivered a lecture on techniques and applications of HPTLC followed by live demo. Around 250 members were participated and actively interacted with the speaker

DEPARTMENTAL ACTIVITIES



A field visit was organized by the Department on 1-June-2021 to the “Medicinal Plant Conservation Area” (MPCA), Savanadurga. As an initiative measure, B Pharm VII Semester students and postgraduate students of the Department of Pharmacognosy were involved in this field visit. The visit was planned with an intention to expose the students’ community to understand the natural habitat of various wild plant species and also to impart the significance of the conservation of medicinal plants. Plant specimen for herbarium preparation was also collected for future reference.

After his formal address, he took into the MPCA which is spread across 250 Hectares. The journey started with the identification of the two worldwide personalities, Charaka, the physician, and Sushruta, the Surgeon. This was followed by locating the wild species and a discussion on the same. Mr Muthaiah discussed the available species correlating to its history, properties, etc.,

DEPARTMENTAL ACTIVITIES

Field Trip

The person in charge of MPCA addressed the participants regarding MPCA, its total area coverage, number of species available, etc.,

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STOMACH SPECIFIC LOW DENSITY FLOATING MICROBALLOONS FOR EXTENDED DELIVERY OF RHYNCHOSIA DENSIFLORA EXTRACT IN THE TREATMENT OF PEPTIC ULCER

Document Type : Original Article

Authors

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COMPARATIVE ANTI - INFLAMMATORY POTENTIAL OF BETALAINS OF HAIRY ROOT CULTURE OF *BETA VULGARIS* AND *BETA VULGARIS*

Ashoka Babu VL[1]*, Shanaz Banu[2] and Mohammad Azamthulla[3]

Zeichen Journal ISSN No: 0932-4747

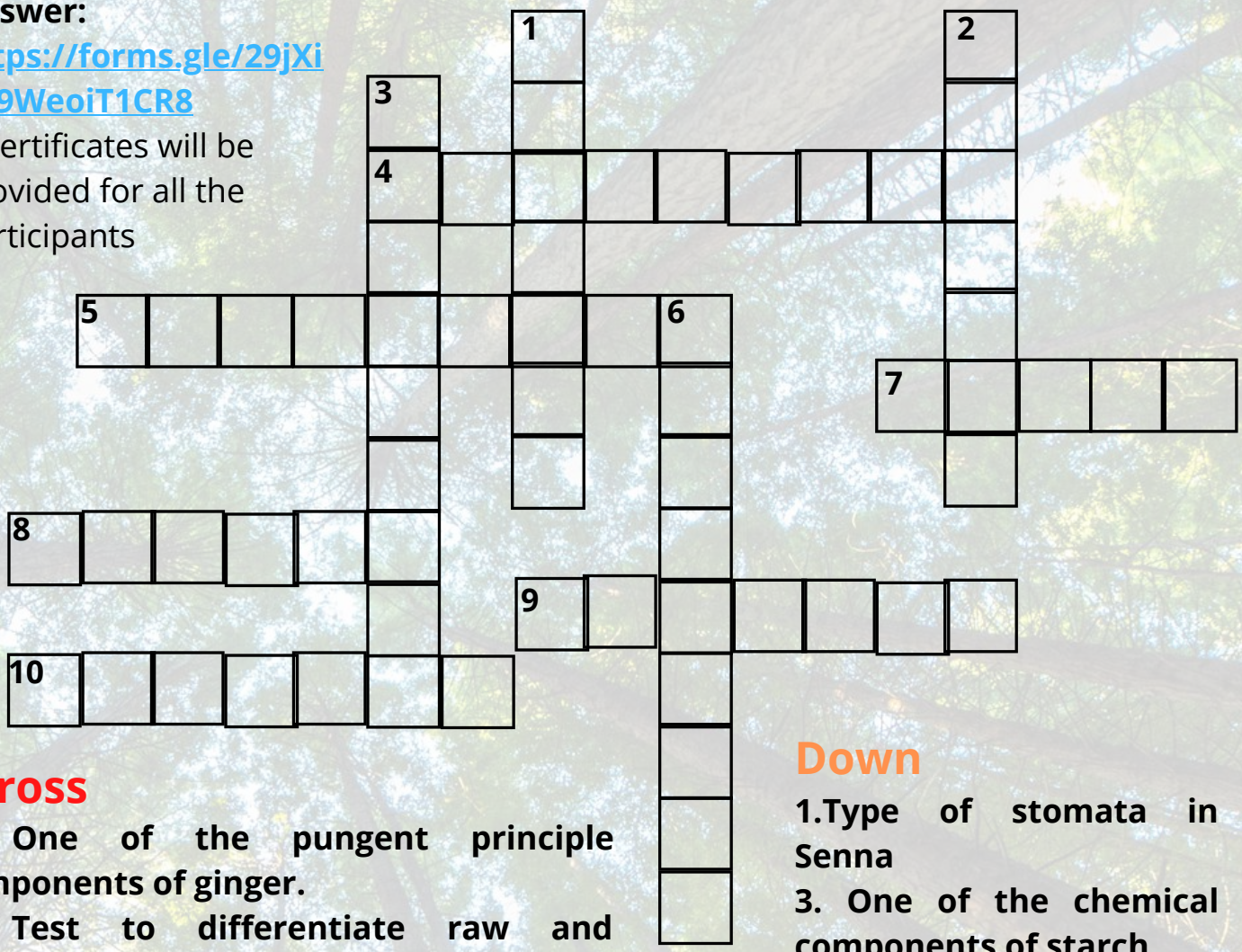
Herbal Remedies Used for the Treatment of Peptic Ulcer

Anjani Singh[1], Ashoka Babu VL[2], Mohammad Azamthulla[3]*

- Dr R Gowri had attended and presented an oral presentation in a two-day international conference on Materials and Researches (ICMBR) held on 27th and 28th April 2022 at Dr. RKS College of Arts and Science, Kallakuruchi, Tamil Nadu, India.
- Dr R Gowri had attended a 5-day CPE programme on "Effective presentation" skills from 20/6/2022 to 24/06/2022 held at the PSG College of Pharmacy, Coimbatore, Tamil Nadu, India.

IT'S PUZZLE TIME!

*** Link for Submitting Answer:**
https://forms.gle/29jXi1K9WeoiT1CR8
E-certificates will be provided for all the participants



Across

2. One of the pungent principle components of ginger.
4. Test to differentiate raw and absorbent cotton.
7. Drug containing indole alkaloids.
8. Chemical test for furfural derivatives (adulterant) in honey
9. Type of fruit in umbelliferae
10. Drug used in treatment of pediculosis

Down

1.Type of stomata in Senna
3. One of the chemical components of starch
5. Calcium oxalate crystal in Senna leaf
6. Fine outgrowth on plant epidermis

Winners of "It's Puzzle Time" for the January - April Issue:

1. Swati Prabhulinga Jirankali, 3rd year B. Pharm, Faculty of Pharmacy, M S Ramaiah University of Applied Sciences

2. Anukiruthika.K
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