



**DEPARTMENT
OF
PHARMACOGNOSY**

SANJEEVANI

SUSHRUTA

A MASTER WIELDER OF
THE BLADE

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**VOLUME 1 • ISSUE V
PHARMACOGNOSY
NEWSLETTER**

Sushruta - A master wielder of the blade



One of the earliest doctors to write down and document numerous medical operations was Acharya Sushruta, who is regarded as the Father of Plastic Surgery and was a physician, philosopher, and teacher in ancient India. He lived around 600 BC.

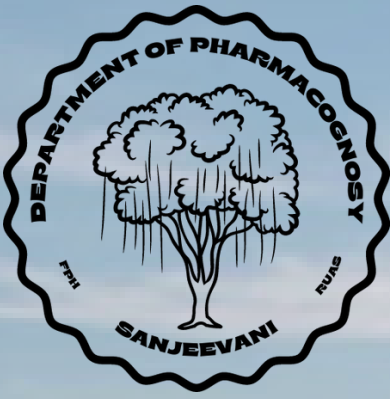
He created and perfected several surgical techniques, including the foundation for contemporary rhinoplasty. One of the first books on surgical methods and related medical specialties like midwifery and many others is his writing, the Sushruta Samhita.

Although plastic surgery is sometimes wrongly thought of as a recent specialization, the Sushruta Samhita is among the earliest literature on surgery, and Sushruta was perhaps the first surgeon to undertake plastic surgery. The operation that gave Sushruta the reputation as the father of plastic surgery is rhinoplasty, the most well-known surgical technique described in the Sushruta Samhita that is still relevant today.

The work, which is broken up into six sections, goes into great length on the many areas of surgery, including military medicine, medical ethics, teaching techniques, human body dissection, dissection exercises, and operative surgical drills on vegetables and other models like cloth. It is recognised as one of the three books that make up the Ayurvedic Medicine Trilogy, the other two being the Charaka Samhita and the Astanga Hridaya.

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EDITOR'S NOTE

Dr. Ashoka Babu VL



Hello Readers,

It gives me immense pleasure to release the Fifth issue of the quarterly E-Newsletter "Sanjeevani" from the Department of Pharmacognosy, Faculty of Pharmacy, M. S. Ramaiah University of Applied Sciences.

This issue offers interesting future agriculture techniques; Saptacharakas of human life, Zero waste cooking and various departmental activities. I would like to thank all the editorial board members, student members for their twitchy 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

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ZERO WASTE COOKING

One-third of the food that is produced on earth is wasted. Although it may be difficult to comprehend, we must address this fact and look for conceptual answers. For a lot of us, the kitchen will be the ideal place to begin. Cooking can easily result in a surplus of waste and trash, including misshaped vegetables, stems, leaves, and skins. It can be challenging to put up a more eco-friendly diet and kitchen, particularly if getting started. When it comes to cooking on your own, amazing zero-waste recipes might be a wonderful place to begin.

What makes a recipe zero waste?

Although it is a major benefit, eating properly isn't the only focus of zero-waste meals. While avoiding unnecessary packaging and plastic, good zero-waste recipes inspire finding new applications for waste and leftovers. It's challenging to produce zero waste in the kitchen, and it's unrealistic to try to change your eating and cooking habits overnight. But there are several crucial areas to pay attention to that can be helpful.

Zero waste potato - potato skin chips

Ingredients:

Peeled Potato skin
Condiments like salt, pepper

Method:

- Wash the potato's skin, add the condiments, and mix well.
- Bake at 375 to 450 degrees Fahrenheit.



Garlic and onion skin: as a condiment

Ingredients:

Onion skin, Garlic skin, Carrot scraped skin, Ginger-scraped skin, Salt, Paprika

Method:

- Wash all the onion, garlic, ginger, and carrot skin, and dap to remove the moisture
- Bake for 2 mins under 375 F heat, into the mixer add the baked ingredients along with salt and paprika(optional) grind to the fine powder
- The condiment is ready to serve on hot chips



Zero waste coconut - 1) Coconut Milk

Ingredients:

Freshly grated coconut

Method:

- Take a fresh mature coconut and break it open
- Collect the water in a glass and grate the white flesh with a hand grater
- In a high-speed blender jar, add the grated coconut. Blend for a few minutes, or until the coconut is thoroughly ground, with 1 cup of water added.
- Strain the coconut milk using a cheesecloth



2) Coconut Ladoo

Ingredients:

Left out coconut shred, Jaggery, Ghee, Roasted Almonds, Cardamom powder

Method:

- To the left-out coconut shred, roasted almonds, and ghee, add jaggery powder of the required quantity, and heat well until the jaggery melts.
- Add a pinch of cardamom powder and mix well
- Make small balls while it is cooled down



Zero waste beetroot - 1) Beetroot leaves smoothie

Ingredients:

Beetroot leaves, Banana, Honey, Pepper

Method:

- Add the freshly washed leaves with banana in the blender, add a pinch of pepper powder and a tablespoon of honey
- Blend into a smooth paste, Serve it cool



Benefits

Vit A - strengthening eyesight
 Vit C - boosts the immune system
 Banana - improve the digestion

2) Beetroot juice

Ingredients:

Peeled beetroot, Water, Amla, Ginger



Method:

- Chop the beetroot, add amla and peeled ginger, and grind well into a smooth paste using a cup of water
- Squeeze the juice using a cheesecloth



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3) Beetroot- Mango Smoothie

Ingredients:

Leftover squeezed beetroot paste, Coconut milk, Pumpkin seeds, Chia seeds, Mango

Method:

- Leftover squeezed Beetroot paste mixed with coconut milk
- Serve using toppings like chia seeds, mango, and pumpkin seeds

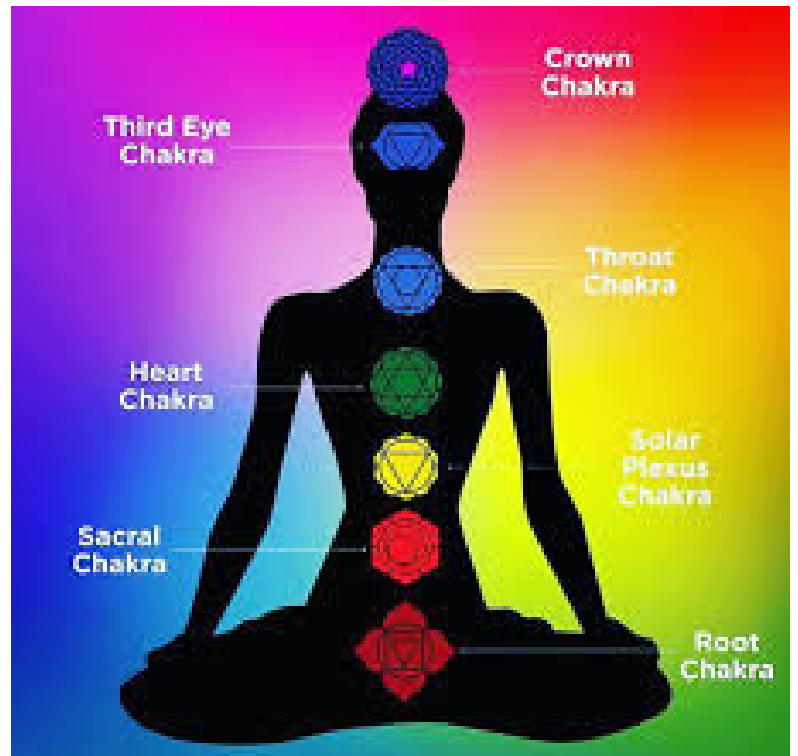


Benefits:

- Beetroot - vit C antioxidants, vit B9, protect the heart
- Amla - antioxidants
- Mango - low in calorie, improve digestion
- Chia seeds- plant based substituent to meat, healthy gut

SAPTA-CHAKRAS (7 CHAKRAS OF HUMAN BODY)

Chakras are the organizing centres for the reception, assimilation and transmission of life energies. The Sanskrit term for wheel is chakra. The chakras are said to be energy centres in Indian culture that run vertically up the spine. Our complex mind-body system's coordinating network is made up of fundamental centres called chakras. It is also thought that these energy centres act as places where awareness resides. The organising centres for the transmission and absorption of life energy are known as chakras.



According to the chakra philosophy, two basic energies are said to have formed, pierced, and nourished the whole cosmos and to have been forever united in an ideal, unbreakable union. The chakra system's cornerstone is the polarity concept. It stands for the masculine and feminine poles in biology. These powers or cosmic elements are known as Shiva and Shakti in chakra theory. While Shiva and Shakti both share the condition of supreme consciousness, Shakti is the embodiment of the cosmos and her action is love.

The seven primary chakras are situated along the spine. Based on his profound meditation experiences and the oral tradition, Sri Amit Ray rediscovered the 114 chakras in the human body in 2018.

7 main chakras are:



1. Muladhara chakra (mul: base, adhara: support)

Meaning: root support

Location: end of the spine (coccyx bone end)

Number of petals: 04

Element: earth

Colour: red

Seed sound (beeja mantra): LAM

Gland: adrenal gland

This is the first chakra and it has a role in physical identity oriented to self-preservation. Here our consciousness focuses on survival issues, such as concerns with the safety and security struggles with the money or health, or living in a state of fight or flight. Malfunction or imbalance of this chakra will lead to obesity, anorexia, sciatica, constipation.



2. Swadhistana chakra

Meaning: Sweetness

Location: Sacrum

Number of petals: 06

Element: Water

Colour: Orange

Seed sound (beeja mantra): VAM

Gland: gonads

This chakra has role in emotional identity and self gratification. This chakra influences on womb, genitals, kidney, bladder, lower back. Imbalance of this chakra leads to sexual problems, urinary tract problems.

3. Manipura chakra

Meaning: Lustrous gem

Location: Solar plexus

Number of petals: 10

Element: Fire

Colour: yellow

Seed sound (beeja mantra): RAM

Gland: Pancreas

This chakra has role in one's ego identity and self-definition. This chakra influences on digestive system, liver, gal bladder. Imbalance of this chakra leads to digestive failure, chronic fatigue, hypertension



4. Anahata chakra

Meaning: Unstruck

Location: Heart

Number of petals: 12

Element: Air

Colour: green

Seed sound (beeja mantra): YAM

Gland: Thymus gland

This chakra has role in one's social identity and self-acceptance. This chakra influences on lungs, heart, circulatory system, arms, hands.

Imbalance of this chakra leads to asthma, coronary disease, lung disease.



5. Vissuddha chakra

Meaning: Purification

Location: Throat

Number of petals: 16

Element: Sound and Ether

Colour: bright blue

Seed sound (beeja mantra): HAM

Gland: Thyroid, Parathyroid glands

This chakra has role in one's creative identity and self-expression. This chakra influences on throat, ears, mouth, shoulder, neck.



6. Ajna chakra

Meaning: Command center

Location: third eye point (between eye brows)

Number of petals: 2 petals with 48 vibrational fields each

Element: Light

Colour: Indigo

Seed sound (beeja mantra): OM

Gland: Pineal gland

This chakra has role in one's archetypal identity and self-reflection. This chakra influences on eyes, base of skull, eyebrows.

Imbalance of this chakra leads to vision problems, headaches, nightmares.



7. Sahasrara chakra

Meaning: thousand fold

Location: Top of the head

Number of petals: 1000

Element: Thought

Colour: Violet, white

Seed sound (beeja mantra): None

Gland: Pituitary gland

This chakra has role in one's universal identity and self-knowledge. This chakra influences on CNS, cerebral cortex. Imbalance of this chakra leads to depression, alienation, confusion.



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Vāṭikā In Vicinity



Scientific Name: *Passiflora incarnata* L

Common names: Purple Passion Flower

Geographical source:

The Purple Passion flower is a commonly found flower on roadsides, walkaways and gardens. Geographically speaking, it is found in the Oceanic regions of New Zealand, Coasts of the USA and North Eastern regions of India.

Family: Passifloraceae

Uses:

Used largely for ornamental purposes, the Purple Passion flower has also been studied for its ethnomedicinal benefits. There is a lot of literature on the use of the flower by Native Americans as part of their diet. Further, the flower has been historically used as an antispasmodic, anxiolytic agent, sedative and anticonvulsant.

PC: SHALEEN ADITYA GUPTA (B.PHARM 4TH YEAR)

Morphological characteristics:

Stems: Vining, glabrous to minutely pubescent, herbaceous, tendrils present.

Leaves : Alternate

Inflorescence: Single pedicillate flowers from leaf axils.

Flowers: A corona consisting of a structure of appendages situated between the corolla and the stamens. As shown in the graphical abstract, the corona is the ring-like structure of purple and white appendages above the petals and sepals. The flower is typically 6–7 cm in diameter. The flower has 5 petals and 5 sepals, which are purplish to whitish, similar, and alternating. The flower has 3 styles, typically 3 stamens, 5 greenish-white sepals with terminal appendages.

Fruit: Fleshy, ovoid to globose, initially green, yellowish-red at maturity.

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FUTURE OF AGRICULTURE

Agriculture is a great work done by farmers every day. Not only in India all over the world is cultivated and developed for a majority of the population and can never be underestimated. Agricultural production has increased, despite the fact that its share of the GDP has decreased to fewer than 20% and that of other sectors has expanded more quickly.

Totally the foodgrain production and cultivation in the country is nearly 291.95 million tonnes, according to the second advance estimates for 2019-20. So the Indian Council for Agricultural Research (ICAR), announced that demand for foodgrain would rapidly increase to 345 million tonnes by 2030.



Increasing in population, increasing in average income and globalisation effects in India will increase demand for quantity, quality and nutritious food, and variety of food. Therefore, pressure on decreasing available cultivable land to produce more quantity, variety and quality of food will keep on increasing.

India is the one of the large cultivable land with 15 or 15 plus agro-climatic zones said by ICAR, and also the weather condition in India are suitable for cultivation, type of soil are differ from state to state and capable of cultivating a different types of plants. India is the high production of milk, milk diaries, pulses, tea leaves, tea, cashew, spices and minor production like rice, oilseeds, fruits, vegetables, wheat, sugarcane, cotton. Due to globalisation, income and consciousness of health will affect the production of future. Fruits and vegetable, dairy products, fish and meat is going to increase in further generation. Biotechnology and breeding will plays important role in development of eco-friendly and disease resistant, climate resilient, and more nutritious and tastier crop varieties.

To improving and developing the agricultural land and production of food some technologies are frequently used throughout the world. This technology are used to help farmer to make it easy to cultivate and easy to find errors in agricultural

land. New resource like hydroponics, use of plastics and bio-plastic in production and also there may be cultivable chance in area like barren deserts and seawater are developed in future.

In some areas the automatic system are updated like soil testing-based decisions and artificial intelligence are used to developing the farming methods and focused for new application inputs in agriculture are planned. New technology like sensors and drones are used to improve the quality and it is environment cost effective manner.

And also these technologies are involved in the small and large marginal farmers. Use of GPS technology, drones, robots etc these technology are controlled by smart phones so the way of cultivation of plants becomes easy to farmers and gives a good and perfect results. These advance and improved technology will make cultivation be more profitable, easy and environmentally friendly. Nano-technology are used to increase of food quality and safety, and it helps to reduce a wastage in chemicals use, reduce the losses of nutrient in fertilisation and also increase yield through pest and management of nutrient.

TRAP VIEW

Trap view are used in the big scale and also in small scale and the production system are cultivated in greenhouse and also in open field. The type of technique is decision support technique, diagnostics and detection technique and monitoring technique, insect monitoring



technique. TRAPVIEW is an automated pest monitoring system that can be used to help to identify any kind of insect that can be lured into an insect trap. It works on different types of area covered by the GPRS or 3G network. Cameras are installed and powered by solar cells send pictures from the traps to a central database and recorded in mobile or computers. Where they can be viewed, processed and are securely saved. The pests that are recognized are marked automatically and there are a range of tools to manage the information. It is a solution that manages and protects your plant making process. It can provide you with real-time and crystal clear situation, it can also forecast future pest situation and simulate different plant protection measure scenarios.

Each Trapview automated trap is fully automated, energy independent and can be extended with basic weather data sensors. Integrated 2G, 3G and LTE connectivity allow reliable automatic data collection.

THE TERRANSENTIA (EARTH SENSE)

Earthsense is an agriculture technology is used to sense the condition of crops and plants. This robot has the capability to navigate through field utilizing GPS to test the health of crop and plant. The robots are become more popular throughout the world. They also involved in development of agriculture.



Essentially this small robot rolls between the crops in farmers field uses the combination of sensors visual cameras lidar and GPS to collect the data on plant health

crop physiology and stress response based on measurements such as stand count stem width and plant height it then uses these metrics to give detailed reports to farmers allowing them to make better decisions regarding the managements of their crops

It is self- learning but it also programmed using a cloud platform which ultimately allows it to be given new updates on rolling basis.

Terrasentia can measure early vigor corn ear height soybean pods plant biomass and plant diseases it become clear that this robot truly is a grade A machine.

KRAY TECHNOLOGIES AGRICULTURAL DRONES

Typically the labor cost tends to be major headache for many farmers as its often quite expensive to pay workers to plant. Water spray and ultimately harvest crops.

However kray technologies has solved this problem by developing the worlds first digital and fully unmanned drone crops sprayer.



It essentially works by flying over the field and using sprayers to deliver on demand fertilizers and pesticides right to the farmers' fields with the machine having the capability of servicing just south of five square kilometres of crops per day.

Due to hybrid computer vision system it can detect obstacles and reconstruct the terrain 100 meters ahead with 10 centimetre precision. This kind of technology as developed in all area in future.

BOUNTIGEL

Soil is essentially for food growing condition because it contains rich in nutrition While this true bounty gel has been on a mission to make a crop yields high regardless of whether a field is experiencing a wet or dry spell that's because bounty gel is a soil additive that its powdered and granular forms uses a proprietary technology that results in soil that absorbs upto 150 times its weight in water while maintain its mechanical strength it essentially works by holding excess water near a plants roots in reserve so that if a dry spell occurs it can then release the water into crops and keep them from drying out as a result this continuous watering reduce seed and plant stress between irrigation cycle and can improve the crop yields with it reportedly working across a wide range of crops and soil types



Due to this technology the crop like broccoli becoming 30 percent larger despite using 25 percent less water proving that the product truly does work to top this off when you consider that bounty gel is completely eco-friendly and can last for three years before biodegrading into the soil it become clear that this additive is the worthy investment to the field.

Ariel Imaging

Ariel imaging uses geographic information system (GIS) technology to examine the potential of irrigation projects and their effects on land degradation, erosion, and drainage. This technology's visuals make it possible to evaluate the foliage of a certain plant. In order to safeguard crops from environmental hazards, these visualisations are actively exploited to identify pests and illnesses. In the summer, when there is the least amount of water available, it is helpful for farmers to keep an eye on the health of their farms' soil.

DRONE DATA

It is very useful tool is used in the agriculture land that's because drones are able to work in a similar way to how a satellite would taking to the air to take pictures and more importantly use the number of sensors in order to collect the data on given field. The capabilities of these drones are rather impressive as they be

outfitted with a number of sensors to measure everything from crop health to the amount of light crops are receiving.

This information can then be transmitted to a computer analysis tool which takes this data and then converts it to usable result and recommendations it should also be noted that generally the drones are a lot more accurate than satellites as they can fly much close to the crops and due to them being able to gather data on two to four kilometres of fields in less than a day. They certainly are very capable on smaller plots of land, however these drones are helpful to farmers to collect the valuable data and this data used for the further process.



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DEPARTMENTAL ACTIVITIES

Guest Lecture - Botanicals Traded in India with Special Focus on Substitutes and Adulterants



The Department of Pharmacognosy organized a guest lecture by Dr. S. Noorunnisa Begum, Associate Professor in Trans Disciplinary University, Bangalore. Sixty plus students attended the event and enriched with knowledge on Botanicals Traded in India with Special Focus on Substitutes and Adulterants



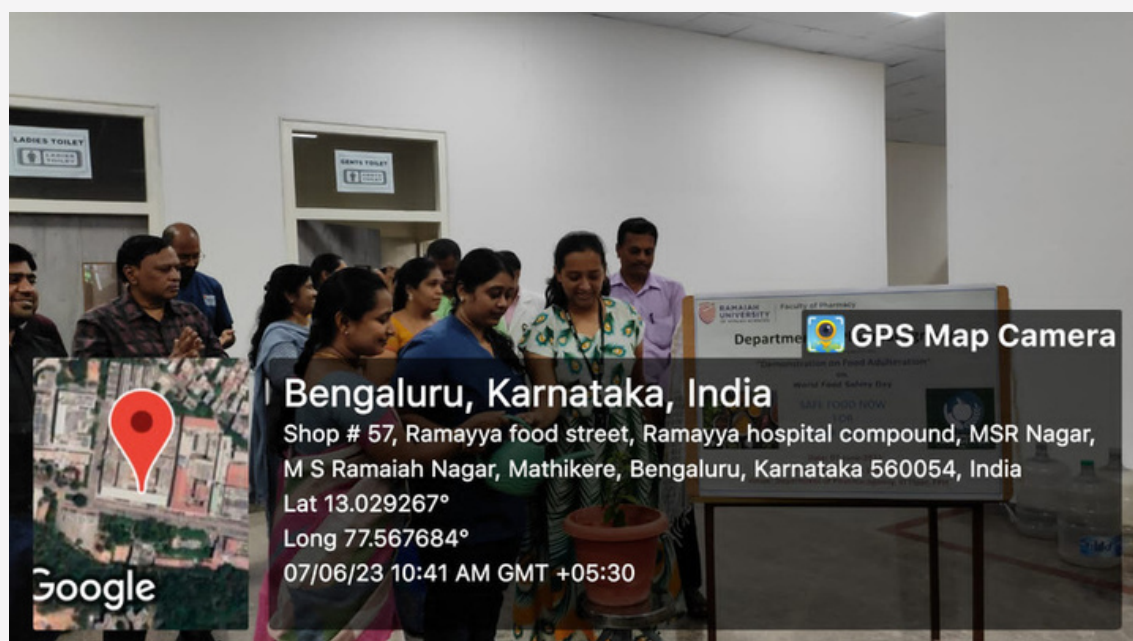
Hands on Training on Column Chromatographic Technique

Department of Pharmacognosy have organized a Hands on Training “Column Chromatography” on April 18th 2023 from 10.00 to 5.00 PM. Nearly 30 students from I year M.Pharm (Pharmacognosy and Pharm. Chemistry) participated in the training. The speaker gave training regarding the techniques involved in packing and eluting the columns and how to overcome problems arising during elution technique.



World Food Safety Day Celebration

World Food Safety Day, celebrated globally on June 7th each year, provides an excellent opportunity to educate individuals about the importance of food safety and the risks associated with food adulteration.



In this milieu, the Department of Pharmacognosy, Faculty of Pharmacy, M.S. Ramaiah University of Applied Sciences, Bangalore had organized an event “Demonstration on Food Adulteration” on 7th June 2023 to help the students and staff to understand the significance of safe and quality food. The event was inaugurated by planting the saplings and more than 300 students witnessed the event and actively participated. More than 25 adulterated food items were demonstrated by the students focusing on method of detection of adulterants.

World Food Safety Day Celebration





**WRITE YOUR FEEDBACK & SUGGESTIONS TO
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