



Azadi Ka Amrit Mahotsav

FROM THE EDITOR'S DESK

We are happy to present to you the special edition of the Gulmohar newsletter for the special occasion of "Azadi ka Amrit Mahotsav 2022". It is an initiative by the Government of India to commemorate 75 years of independence and the glorious history of its people, culture and achievements.

The students of TYBsc Botany have risen to the challenge of making a dedicated edition to the Amrit Mahotsav. This edition focuses on the wealth of flora of India and the growth in the field of Botany.

We have 5 themes for "Azadi ka Amrit Mahotsav 2022"

- **Freedom struggle** - commemorating milestones in history, unsung heroes etc.
- **Ideas@75** - celebrating ideas and ideals that have shaped India
- **Resolve@75** - reinforcing commitments to specific goals and targets
- **Actions@75** - highlighting steps being taken to implement policies and actualize commitments
- **Achievements@75** - showcasing evolution and progress across different sectors

We have included the different themes in this special issue in the form of posters and articles. We hope that you enjoy reading this edition dedicated to 75 wonderful years of freedom for India!

~ *Chaitrali Deshpande, Editor*



TYBsc Botany had organized a plant sale for the occasion of "Azadi ka Amrit Mahotsav 2022". Check it out on our Instagram page!

https://instagram.com/stories/gulmohar_botany_newsletter/2905222501303549890?igshid=MDJmNzVkMjY=



@gulmohar_botany_newsletter



Gulmohar - Botany Newsletter

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The First Indian Woman Botanist : Edavaleth Kakkat Janaki Ammal

In 1970, the Indian government planned to flood 8.3 square kilometers of pristine evergreen tropical forest by building a hydroelectric plant to provide power and jobs to the state of Kerala. And they would have succeeded—if it weren't for a burgeoning people's science movement, buttressed by a pioneering female botanist. At 80 years old, Janaki Ammal used her status as a valued national scientist to call for the preservation of this rich hub of biodiversity. Today Silent Valley National Park in Kerala, India, stands as one of the last undisturbed swaths of forest in the country, bursting with lion-tailed macaques, endangered orchids and nearly 1,000 species of endemic flowering plants.

Sometimes called "the first Indian woman botanist," Ammal leaves her mark in the pages of history as a talented plant scientist who developed several hybrid crop species still grown today, including varieties of sweet sugarcane that India could grow on its own lands instead of importing from abroad. Her memory is preserved in the delicate white magnolias named after her, and a newly developed, yellow-petaled rose hybrid that now blooms in her name. In her later years, she became a forceful advocate for the value and preservation of India's native plants, earning recognition as a pioneer of indigenous approaches to the environment.

Edavaleth Kakkat Janaki Ammal was born in 1897, the tenth in a blended family of 19 brothers and sisters in Tellicherry (now Thalassery) in the Indian state of Kerala. Her father, a judge in a subordinate court system in Tellicherry, kept a garden in their home and wrote two books on birds in the North Malabar region of India. It was in this environment that Ammal found her affinity for the natural sciences, according to her niece, Geeta Doctor.

As she grew up, Ammal watched as many of her sisters wed through arranged marriages. When her turn came, she made a different choice. Ammal embarked on a life of scholarship over one of matrimony, obtaining a bachelor's degree from Queen Mary's College, Madras and an honors degree in botany from the Presidency College. It was rare for women to choose this route since women and girls were discouraged from higher education, both in India and internationally. In 1913, literacy among women in India was less than one percent, and fewer than 1,000 women in total were enrolled in school above tenth grade, writes historian of science Vinita Damodaran (and Ammal's distant relative) in her article "Gender, Race, and Science in Twentieth-Century India." After graduating, Ammal taught for three years at the Women's Christian College in Madras before receiving a unique opportunity: to study abroad for free through the Barbour Scholarship, established at the University of Michigan by philanthropist Levi Barbour in 1917 for Asian women to study in the U.S. She joined the botany department as Barbour Scholar at Michigan in 1924.

Despite coming to America on a prestigious scholarship, Ammal, like other travelers from the East, was detained in Ellis Island until her immigration status was cleared, her niece writes. But mistaken for an Indian princess with her long dark hair and traditional dress of Indian silks, she was let through. When asked if she was in fact a princess, "I did not deny it," she said.

During her time at the University of Michigan she focused on plant cytology, the study of genetic composition and patterns of gene expression in plants. She specialized in breeding interspecific hybrids (produced from plants of a different species) and intergeneric hybrids (plants of a different genera within the same family). In 1925, Ammal earned a Masters of Science. In 1931, she received her doctorate, becoming the first Indian woman to receive that degree in botany in the U.S.

Ammal's research into hybrids helped the Institute identify native plant varieties to cross-breed with *Saccharum* in order to produce a sugar cane crop better suited for India's tropical environmental conditions. Ammal crossed dozens of plants to determine which *Saccharum* hybrids yielded higher sucrose content, providing a foundation for cross-breeding with consistent results for sweetness in home-grown sugarcane. In the process, she also developed several more hybrids from crossing various genera of grasses: *Saccharum-Zea*, *Saccharum-Erianthus*, *Saccharum-Imperata* and *Saccharum-Sorghum*.

In 1940, Ammal moved to Norfolk, England, to begin work at the John Innes Institute. There she worked closely with geneticist—and eugenicist—Cyril Dean Darlington. Darlington researched the ways that chromosomes influenced heredity, which eventually grew into an interest in eugenics, particularly the role of race in the inheritance of intelligence. With Ammal, however, he mostly worked on plants. After five years of collaboration, the pair coauthored the *Chromosome Atlas of Cultivated Plants*, which is still a key text for plant scientists today. Unlike other botanical atlases that focused on botanical classification, this atlas recorded the chromosome number of about 100,000 plants, providing knowledge about breeding and evolutionary patterns of botanical groups.



In 1946, the Royal Horticultural Society in Wisley offered Ammal a paid position as a cytologist. She left the John Innes Institute and became the Society's first salaried woman staff member. There, she studied the botanical uses of colchicine, a medication that can double a plant's chromosome number and result in larger and quicker-growing plants. One of the results of her investigations is the *Magnolia kobus* Janaki Ammal, a magnolia shrub with flowers of bright white petals and purple stamens. Though Ammal returned to India around 1950, the seeds she planted put down roots, and the world-renowned garden at Wisley still plays host to Ammal's namesake every spring when it blooms.

Her expertise was of particular interest at the Imperial Sugar Cane Institute in Coimbatore, now the Sugarcane Breeding Institute. The Institute was trying to bolster India's native sugarcane crop, the sweetest species of which (*Saccharum officinarum*) they had been importing from the island of Java. With Ammal's help, the Institute was able to develop and sustain their own sweet sugarcane varieties rather than rely on imports from Indonesia, bolstering India's sugarcane independence.

After spending decades applying her skills to improving the commercial use of plants, she began using her influence to preserve indigenous plants under threat. One of Ammal's goals for the botanical survey was to house plant specimens that had been collected from across the continent in an herbarium in India. She wanted the BSI to be conducted by Indian scientists and kept for India.. Ammal believed a truly systematic study of India's flora could not be done if the specimens were collected by foreign botanists and then studied only in British herbaria.

In the later years of her career, Ammal lent her voice to a booming environmental movement called Save Silent Valley, a campaign to stop a hydroelectric project that would flood the Silent Valley forests. By the time she joined protesters and activists, she was an established voice in Indian science, and a scientist emeritus at Madras University's Centre for Advanced Studies in Botany. Joining the movement was a natural outgrowth of her previous decades of work, bringing full circle a scientific life of systematic study and a love of the natural wonders of her country. "I am about to start a daring feat," she wrote, again to Darlington. "I have made up my mind to take a chromosome survey of the forest trees of the Silent Valley which is about to be made into a lake by letting in the waters of the river Kunthi."

Harnessing her scientific expertise, she spearheaded the chromosomal survey of the Valley plants in an effort to preserve the botanical knowledge held there. As part of the larger movement, one of the most significant environmental movements of the 1970s, Ammal was successful: the government abandoned the project, and the forest was declared a national park on November 15, 1984. Unfortunately, Ammal was no longer around to see the triumph. She had died nine months earlier, at 87 years old.

In a 2015 article remembering her aunt, Greeta Doctor wrote that Ammal never liked to talk about herself. Rather, Ammal believed that "My work is what will survive." She was right: though she is relatively unknown in her country, her story is out there, written in the pages of India's natural landscape. From the sweetness of India's sugar and the enduring biodiversity of the Silent Valley to Wiseley's blooming magnolias, Ammal's work does not just survive, it thrives.

The Tyques

Indian botanist, **Janaki Ammal** was born on November 4, 1897

THE BOTANIST

Conducted scientific research on sugarcane and eggplants

Co-authored the **Chromosome Atlas of Cultivated Plants** with English biologist & geneticist, Cyril Darlington

Has a flower named after her—*Magnolia Kobus Janaki Ammal*

On invitation from Jawaharlal Nehru **reorganized the Botanical Survey of India & served as its Director General**

Was **awarded the Padma Shri in 1977** & the National Award in Taxonomy was instituted in her name in year 2000

AUTHOR: Prasad Nayak

Reference: <https://www.shethepeople.tv/home-top-video/meet-first-indian-woman-botanist-janaki-ammal/>

75 JOB OPPORTUNITIES IN BOTANY

- 1) **Naturalist:** A naturalist is a type of biologist who studies the impacts of living species on each other and the environments in which they live.
- 2) **Bio technologist:** A biotechnologist modifies or manipulates living organisms to develop new products.
- 3) **Molecular Biologist :** A molecular biologist examines plant genetics and the variation and relationships between them.
- 4) **Bioinformatics scientist:** A bioinformatics scientist develops analyses data to get useful results and models.
- 5) **Nursery Manager:** A nursery manager oversees the day-to-day operations of the nurseries they work in.
- 6) **Field Botanist:** A field botanist studies the plant species in the field, where they are found, why they are found there, and where else they might occur.
- 7) **Scientific Assistant:** A scientific assistant supports the scientists in various ways in research.
- 8) **Researcher:** Researchers collect, organise, analyse and interpret data and opinions to explore issues, solve problems and predict trends.
- 9) **Professor:** A professor is a professional who teaches students after high school, conducts research and publishes materials related to their field of study.
- 10) **Plant Pathologist:** Plant pathologists cooperate with plant breeders and crop management, and insect and weed specialists in developing integrated environmentally sound approaches to managing crops and their pests.
- 11) **Ecologist:** An ecologist studies the relationships of organisms to their environment, environmental problems, what caused them and how to solve them.

75 JOB OPPORTUNITIES IN BOTANY

- 12) **Plant Biochemist:** A plant biochemist studies the chemical and physical principles of plants and of biological processes, such as cell development, growth, heredity and disease.
- 13) **Floral designers:** Floral designers/ florists arrange live and dried flowers and greenery to make decorative displays.
- 14) **Palaeobotanist:** A palaeobotanist studies plant fossils and tries to reconstruct the ancient plants.
- 15) **Ecologist:** Ecologists study the relationships of organisms with their environment, they collect, study and analyse the data.
- 16) **Forester:** Foresters help carry out forestry projects and help in land management, conservation and rehabilitation..
- 17) **Taxonomist:** A taxonomist identifies and names new species and diseases so that more data and research can be done on them.
- 18) **Conservationist:** A conservationist manages natural habitats like forests and rangelands. They can specialise in various fields like soil or water conservationist.
- 19) **Plant physiologist:** A plant physiologist studies the physical, chemical and biological functions of living plants..
- 20) **Plant morphologist:** A plant morphologist studies the physical form and external structure of plants.
- 21) **Pomologist:** A pomologist is a person who studies and grows fruit.
- 22) **Cytologist:** A cytologist or cytotechnologist studies cells and cellular anomalies.
- 23) **Economic botanist:** An economic botanist studies the interactions between humans and plants from a variety of different angles..

75 JOB OPPORTUNITIES IN BOTANY

- 24)**Agriculturist:** An agriculturist specialises in food and agriculture research areas like crop rotation, irrigation, insect and pest control.
- 25)**Ethnobotanist:** An ethnobotanist studies how different cultures use native plants for food, medicine, dyes and soaps and in religious rituals.
- 26)**Horticulturist:** Horticulturists study and examine the growth process of fruits, vegetables, flowers and plants.
- 27)**Mycologist:** A mycologist works with fungi like molds, yeast and mushrooms.
- 28)**Farm consultant:** A farm consultant or agricultural consultant gives business and technical advice and support to farmers.
- 29)**Palynologist:** A palynologist studies pollen samples from air, water or deposits from sediments of any age.
- 30)**Dendrologist:** A dendrologist studies the identification of wooden plants, their taxonomic inter-relationships and their economic usage.
- 31)**Herbarium curator:** A herbarium curator is in charge of maintaining a collection of preserved plant samples and related information.
- 32)**Floriculturist:** A person who cultivates flowers and ornamental plants.
- 33)**Wine technologist or a vintner:** A person or an organisation that makes wine.
- 34)**Nature photographer:** A nature photographer attempts to capture nature in all its beauty and grandeur.
- 35)**Healthcare consultant:** A person who will provide advice based on your experience and the healthcare literature to small to medium healthcare organizations.

75 JOB OPPORTUNITIES IN BOTANY

36)**Algalogist in oceanography:** A person who studies marine algae and how it develops, relate to one another, adapt to their environment, and interact with it.

37)**Recruitment in food companies.**

38)**Perfumer:** A perfumer or fragrance chemist is an expert who creates perfume compositions and flavouring.

39)**Field trip organiser:**A person who arranges educational and fun tours for people belonging to all age groups.

40)**Forensic scientist:** A person who finds and analyses evidence at the crime scene so as to direct the investigation in the right direction.

41)**Lab technician:** Professionals who are responsible for receiving, testing and analyzing specimens in a laboratory.

42)**Weed scientist:** Identifying weeds and learning how to combat them or determining how herbicides interact with plants.

43) **Environmental engineer:** Work to prevent, control or remediate any hazards to the environment using their engineering expertise.

44)**Arborist:** A specialist in the care and maintenance of trees. Also known as tree surgeon.

45)**Anatomist:** A person who studies the tissues and cell structure of plant organs.

46)**Organic farmer:** A person who does farming without the use of chemical fertilizers, pesticides, growth regulators, genetically modified organisms and livestock food additives.

75 JOB OPPORTUNITIES IN BOTANY

- 47) **Naturopathy:** An art and science of healthy living and drugless system of healing based on well founded philosophy.
- 48) **Landscape designer:** A professional who designs outdoor spaces and gardens by preparing detailed plans, sketches or concepts.
- 49) **Hydroponics technician:** A person who takes care of plants growing via hydroponics.
- 50) **Plant tissue culturist:** A person who maintains or grow plant cells, tissues or organs under sterile conditions on a nutrient culture medium of known composition.
- 51) **Pharmacologist:** A person who understands how medicines and other drugs work and how they're processed by the body so they can be used effectively and safely.
- 52) **Seed technologist:** A seed technologist evaluates and analyses seed samples with respect to vigour, herbicide tolerance etc.
- 53) **BSI (Botanical Survey of India) officer**
- 54) **Indian Forest Service (IFS)**
- 55) **Mushroom cultivator:** A person who cultivates, maintains and does the marketing of mushrooms for commercial purposes.
- 56) **Soil technologist:** A scientist who studies soil conditions in various places and makes recommendations about how that soil could best be used, improved or optimized.
- 57) **Food processing:** Jobs at food processing industries.
- 58) **Plant health inspector:** A person surveying crops, carrying out soil samples and excluding any quarantine plant pests that could harm
- 59) **Food testing officer:** A professional who is responsible to analyse food samples collected from various places for inspection.

75 JOB OPPORTUNITIES IN BOTANY

60) **Lawn consultant:** An expert in garden layout focusing on development and improvements in lawn area.

61) **Making of Bio-ornaments:** A small scale industry which is concerned in making ornaments with plants and its various parts for different occasions.

62) **Aromatherapist:** A person who provides aromatherapy treatments (use of pleasant smelling natural substances for treatment)

63) **Educational content developers:** People who make content for different online coachings to enhance learning.

64) **Biological science columnist:** Producing regular material in a column or newspaper regarding information and updates related to biological sciences.

65) **Aquaculture:** The breeding, raising, and harvest of aquatic plants.

66) **Soil scientist:** A person who studies the upper few meters of the Earth's crust in terms of its physical and chemical properties; distribution, genesis and morphology; and biological components.

67) **Soil conservationist:** A person who monitors the condition of the soil and enhances its sustainability.

68) **Environmental analyst:** Responsible for studying and examining human effects and impacts on various aspects of the planet, such as air, water, soil, and food, in order to preserve and keep them safe.

69) **Environmental education officer:** Enhances public enjoyment of the environment by teaching and interpreting the natural world.

70) **Green house technician:** A person who works in a greenhouse. Their role is to treat and hydrate seeds, as well as transplant, thin, harvest, and dry plants.

75 JOB OPPORTUNITIES IN BOTANY

71) **Agro business firms (plant export and import firms):** Helping in implementation of various new businesses related to agriculture.

72) **Forestry consultant:** Provide a wide range of services to clients in determining the best way to conserve wildlife habitats, creek beds, water quality and soil stability.

73) **Agricultural chemist:** A person concerned with ways to influence chemical and biochemical processes in soil and plants.

74) **Plant wealth developers:** Biodiversity park developers- Organisations who are concerned with creating and maintaining parks.

75) **Conservation officer:** A conservation officer plays the role of protecting the wildlife and the environment.

Compiled by:

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This poster was made with the intention to create awareness about the different career options in the field of botany.

A Glimpse of Ayurveda

Ayurveda is considered as one of the oldest of the traditional systems of medicine (TSMs) accepted worldwide. The ancient wisdom in this traditional system of medicine is still not exhaustively explored. The junction of the rich knowledge from different traditional systems of medicine can lead to new avenues in herbal drug discovery process. The lack of the understanding of the differences and similarities between the theoretical doctrines of these systems is the major hurdle towards their convergence apart from the other impediments in the discovery of plant based medicines. This review aims to bring into limelight the age old history and the basic principles of Ayurveda. This would help the budding scholars, researchers and practitioners gain deeper perspicuity of traditional systems of medicine, facilitate strengthening of the commonalities and overcome the challenges towards their global acceptance and harmonisation of such medicinal systems.

Basic doctrine principles of Ayurveda

Ayurveda believes that the entire universe is composed of five elements: Vayu (Air), Jala (Water), Aakash (Space or ether), Prithvi (Earth) and Teja (Fire). These five elements (referred to as Pancha Mahabhoota in Ayurveda) are believed to form the three basic humors of human body in varying combinations. The three humors; Vata dosha, Pitta dosha and Kapha dosha are collectively called as "Tridoshas" and they control the basic physiological functions of the body along with five sub-doshas for each of the principal doshas. Ayurveda believes that the human body consists of Saptadhatu (seven tissues) Rasa (tissue fluids), Meda (fat and connective tissue), Rakta (blood), Asthi (bones), Majja (marrow), Mamsa (muscle), and Shukra (semen) and three Malas (waste products) of the body, viz. Purisha (faeces), Mutra (urine) and Sweda (sweat). Heat conditions of the body aggravate Pitta. Kapha dosha is increased due to sweet and fatty food and it provides lubrication to the joints for proper functioning. The catabolism of the body is believed to be governed by Vata, metabolism by Pitta and anabolism by Kapha.¹⁵ For a healthy state of health, a balance between the three doshas and other factors should be maintained.

Any imbalance between the three causes a state of illness or disease.¹⁶ In Ayurveda it is believed, that a perfect balance between the nature elements and the Tridoshas of the human body should be maintained for a healthy state of living by following the principles of divine wisdom.¹⁷ The body is believed to be composed of seven types of tissues called as "Sapta Dhatus". These seven tissues work in coordination with each for proper physiological functioning of the human body. The Rakta Dhatu resembles the blood and regulates the circulation of blood cells and provision of blood components to the body. The Mamsa Dhatu (Muscle tissue) provides supports in the form of skeletal muscles for the Meda Dhatu (adipose fat). The Asthi Dhatu comprises the bones of the body and the Majja Dhatu is made up of the bone marrow and fluids required for the oleation of the bones and their functioning. The Shukra Dhatu is responsible for functions of the reproductive organs of the body.

Current status of Ayurveda

In the recent decades, Ayurveda has experienced a considerable shift in its paradigm and a significant change in the outlook of researchers, towards its applications has occurred. The therapeutic principles of Ayurveda focus on prakriti and tridoshas, and these principles explain that every individual has his unique constitution called as prakriti. Prakriti determines the characteristic response of each individual to medications, environmental conditions and dietary factors. 'Ayurgenomics' a recently introduced research field, bridges this gap between genomics and Ayurveda and serves as an aid in understanding of inter-individual differences in responses to therapies in various diseases.

AUTHOR: Prasad Nayak

Reference: <https://www.nccih.nih.gov/health/ayurvedic-medicine-in-depth>

75 MEDICINAL PLANTS IN AYURVEDA



Adusa/Vasaka

Adhatoda vasica
Cough, Asthma,
Bronchitis



Pineapple

Ananas comosus
Sore Throat, Diabetes,
Heart Disease, Obesity



Babool/Indian gum

Acacia arabica
Oral Care, Bleeding Gums,
Wounds



Brahmi

Bacopa monniera
Enhances Memory,
Anxiety



Coriander

Coriandrum sativum
Indigestion,
Flatulence, Controls
Spasmodic Pain



Kalmegh

Andrographis paniculata
Indigestion, Acne, Diarrhea



Garlic

Allium sativum
Ringworm, Dysentery,
Wounds



Nagarmotha

Cyperus rotundus
Fever, Diabetes, Solar
Dermatitis



Punarnava

Boerhaavia diffusa
Anemia, Liver Diseases,
Wounds



Shalparni

Desmodium gangetium
Analgesic, Anti-
Inflammatory



Tulsi

Ocimum sanctum
Indigestion, Heart
Diseases, Respiratory
Diseases



Vridhadaru

Argyreia speciosa
Diabetes, Skin Diseases,
Wounds

75 MEDICINAL PLANTS IN AYURVEDA



Agarkasth

Aquilaria agallocha

Bed-Wetting,
Incompetency of Urinary
Bladder



Ankol

Alangium salvifolium

Snakebite, Scorpion Bite,
Dog Bite



Greater cardamom

Amomum subulatum

Bronchitis, Asthma,
Appetizer, Digestant



Chirchita

Achyranthes aspera

Indigestion, Cough, Asthma,
Anemia, Jaundice



Lesser Cardamom

Elettaria cardamomum

Nausea, Vomiting, Dry
Cough



Country Mallow

Abutilon indicum

Facial Paralysis, Joint
Disorders, Increases
Strength



Malkagini

Celastrus paniculatus

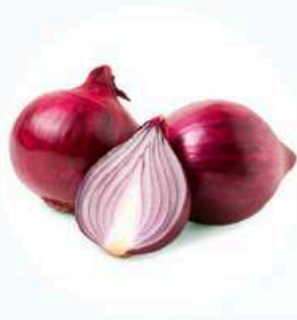
Muscle Cramps,
Backache, Osteoarthritis,
Paralysis



Neem

Azadirachta Indica

Leprosy, Eye Disorders,
Bloody Nose, Intestinal
Worms



Onion

Allium cepa

Prostate Cancer,
Esophageal, Stomach
Cancer



Shatavari

Asparagus racemosus

Infertility, Loss Of Libido,
Threatened Miscarriage



Devil's Cotton

Abroma augusta

Gynaecological Problems,
Irregularity In Periods



Yavasa / Camel Thorn

Alhagi camelorum

Rheumatism, Vomiting,
Stomachache,
Constipation

75 MEDICINAL PLANTS IN AYURVEDA



Akarkara / Pellitory

Anacyclus pyrethrum
Toothache, Dryness Of
The Mouth, Throat,
Catarrh



Indian Laburnum

Cassia fistula
Ulcers, Wounds



Ashok

Saraca indica
Menstrual Irregularities,
Uterine Stimulant



Bharangi

Clerodendron serratum
Common Cold, Chronic
Sinusitis, Allergic Rhinitis



Chitvan / Dita

Alstonia scholaris
Skin Ulcers, Fever,
Increasing Lactation



Indian Bdellium

Commiphora mukul
Joint Disorders, Heart
Diseases, Hypolipidaemic



Cutch Tree

Acacia catechu
Skin & Respiratory
Problems, Oral Hygiene



Indian Olibanum

Boswellia serrata
Joint Pains, Headache,
Diabetes



Cinnamon Leaf

Cinnamomum tamala
Diabetes, Digestion, Cold



Varun

Crataeva nurvala
Kidney Stones, Bladder
Stones



Meetha Vish

Aconitum ferox
Fever, Diuretic Action,
Arthritis



Velvet Leaf Tree

Cissampelos pareira
Ulcers, Sinuses, Skin
Diseases, Poisonous Bites

75 MEDICINAL PLANTS IN AYURVEDA



Senna

Cassia angustifolia
Laxative, Constipation,
Irritable Bowel
Syndrome, Weight Loss



Supari / Areca Nut

Areca catechu
Obesity, Diabetes,
Hyperlipidaemia,
Irregular Menstruation



Vajradanti

Barleria prionitis
Strengthens Teeth, Fever



Amla

Emblica officinalis
Antioxidant, Antistress,
Constipation, Fever



Atees

Aconitum heterophyllum
Fever, Respiratory



Bhojpatra

Betula utilis
Wound healing, Obesity



Dalchini

Cinnamomum Zeylanicum
Antibacterial, Antiseptic



Elephant yam

*Amorphophallus
campanulatus*
Dysentery, Piles,
Haemorrhoids



Kulanjan

Alpinia galanga
Dyspepsia, Vomiting,
Seasickness



Mulethi / Liquorice

Glycyrrhiza glabra
Digestive Disorders,
Ulcers, Bronchitis



Long Pepper

Piper longum
Asthma, Cough,
Indigestion



Bach / Sweet Flag

Acorus calamus
Flatulent Colic, Atonic
Dyspepsia, Ulcers

75 MEDICINAL PLANTS IN AYURVEDA



Shirish Tree

Albizia lebbek
Bronchial Asthma



Ratti / Rosary Pea

Abrus Precatorius
Joint Pains, Paralysis,
Alopecia



Palasha

Butea monosperma
Complexion of Skin, Worm
Infestations, Roundworm



Mandukparni

Centella asiatica
Sedative, Antibiotic,
Detoxifier, Laxative



Ghee Kunwar

Aloe vera
Ulcers, Burn Injuries,
Jaundice, Acne



Ketaki / Crepe Ginger

Costus speciosus
Obesity, Hyperlipidaemia,
Diabetes



Chitvan

Plumbago zeylanica
Arthritis, Skin Diseases,
Menstrual Disorders,
Obesity



Bael / Bengal Quince

Aegle marmelos
Dysentery And Diabetes,
Sunstrokes, Anti-Cancer



Ashwagandha

Withania somnifera
Stress Tolerance,
Immunity, Joint Pains, Skin
Sores



Patang

Caesalpinia sappan
Antidiarrhoeal; used in skin
diseases



Pot Marigold

Calendula officinalis
Anti-inflammatory,
antiseptic,
stimulant, antispasmodic



Chameleon Plant

Houttuynia cordata
Dysentery, stomach ulcers,
muscular pains

75 MEDICINAL PLANTS IN AYURVEDA



South-Indian Uvaria

Uvaria narum

Intermittent fevers,
biliousness, jaundice,
skin diseases



Nonka

Pontederia vaginalis

toothache, asthma



Grass of the dew

Cyanotis arachnoidea

Rheumatic infections, muscle
and joint relaxant



Turmeric

Curcuma longa

Regulating menstruation,
dissolving gallstones



River anemone

Eriocapitella rivularis

Headache, boils



Never die

Kalanchoe integra

Calms intercostal and
intestinal pain, ear ache



Asthibhanga

Cissus quadrangularis

Tonic and analgesic,
antibacterial



Shikakai

Senegalia rugata

Dandruff, promoting hair
growth and strengthening
hair roots, malarial fever



Harmal / Turkey red

Peganum harmala

Analgesic and anti-
inflammatory agent,
antidepressant



Shisham

Dalbergia sissoo

Gonorrhoea, leprosy, boils



Zombie pea

Vigna vexillata

Joint disorders, arthritis,
swellings in joints



Sea buckthorn berry

Hippophae salicifolia

Heal burns, eczema and
radiation injury, cardiac
disorders

75 MEDICINAL PLANTS IN AYURVEDA



Jackal Jujube

Ziziphus oenopolia
Hyperacidity, ascaris
infection



Snakewort

Dorstenia contrajerva
Diarrhea, dysentery, and
stomach ache



Indian elm

Holoptelea integrifolia
Diabetes, leprosy and other
skin diseases

Compiled by:

- Simran Shaikh
- Pavithra Kalirathinam
- Mamta Panigrahi
- Ankita Chauhan

This poster is made to feature a few of the many plants used in ayurvedic scripts and their various uses for medicinal purposes.

7 Ways To Be Sustainable In Everyday Life

If it can't be reduced, reused, repaired, rebuilt, refurbished, refinished, resold, recycled, or composted, then it should be restricted, designed or removed from production

~ *Pete Seeger*

A sustainable lifestyle is a way of living that strengthens your own health, supports the well-being of other people and protects the environment.

To live more sustainably, you:

- Change your personal behaviors regarding your food, transportation, or energy choices;
- Experiment with alternative solutions as part of your studies, work, or free-time activities;
- And join collective actions to change the economic, political and cultural systems we live in.

Sustainable lifestyle actions in your city or country:

- ***Walk, cycle, and take public transport***

Driving by car or plane can be very convenient. However, the burning of gasoline pollutes the air and emits carbon dioxide. Walking or cycling improves your fitness and health. Sharing a ride or hitch-hiking allows you to connect with strangers. Taking the train or bus to get somewhere might take longer, but can be a great way to see the countryside, slow down, read a book, and connect with friends on the journey.

- ***Bring your own bag, refillable bottle, and cup***

Plastics are a marvelous invention of the industrial revolution. At the same time, they are a curse for the environment.

1. Get a reusable coffee cup to avoid having to buy single-use cups,
2. Bring your own bag to shops to reduce the usage of plastic bags,
3. Try to avoid buying fruits or vegetables wrapped in plastics,
4. And use a refillable water bottle to avoid having to buy plastic bottles.

- ***Get a renewable energy provider***

Change to a renewable energy provider to:

1. A provider that produces electricity from water, sun or wind power;
2. And generates heat energy from biomass.

- ***Recycle and compost***

You can help to promote a circular economy through the following actions:

1. Get to know the recycling system in your neighbourhood or city;
2. Order recycling bins for your student home;
3. Put paper, clean plastic, cans, tins and cardboard in mixed recycling bins;
4. If recyclable materials have food stains, clean them first or put them in the general waste;
5. Buy minimally packaged goods;
6. And get a worm composter to turn food scraps into fertile soil.

- ***Skip single-use items***

We encounter single-use items in our day to day life. Single-use items like plastic straws, toilet paper, paper towels, plastic grocery bags, plastic cutlery are a big curse on our environment. You may not be able to remove all the items but can surely cut down the use of some of these items.

- ***Practice keeping a “zero energy balance” budget***

A zero-energy balanced budget means that what you take in, you also return them. It is really the core of all sustainable living. If you practice keeping a budget that has a zero energy balance, you will be surprised how your habits of consuming will change and reduce your imprint on the world.

- ***Use Sustainable Technologies***

Make use of rechargeable batteries. Switch to a sustainable search engine like Ecosia. They run 100% on renewable energy and use some of their profits to plant trees.

Use solar energy chargers. Donate your old devices to poor kids or NGO's. Dispose of your electronic items to local waste recycling programs.

AUTHOR: Ankita Kamlesh Singh

Reference: <https://www.nccih.nih.gov/health/ayurvedic-medicine-in-depth>

With Love From India to Global Cuisine!

Spices have always been such an important part of Indian cuisine. It's a commonality to find someone enquiring about your health if you chose to eat blandly. A pinch of the fantastic flavours can do wonders to a dish. And it is not only about flavours. Indian spices also add ageing aromas and vibrant colours to the platter. They also have some medicinal values. They blend in seamlessly with the delicacy, sometimes dominating the curries with their exquisite presence or sometimes hidden in its fold unsuspectingly. Even those who find their taste intimidating cannot help acknowledge their vitality and exuberance. So sought after were the Indian spices, that they can be credited to a large part for attracting the western colonies. The British, French, and Dutch embarked on controlling trade in the subcontinent with spices as almost the central focus. A lot of discussions, in fact, associate globalisation with spices. The trade and economics of spices led to the opening and exchange between different parts of the world.

So what are the special Indian spices that are found in almost all homes of the nation? Let's take a look:

Cumin

India continues to be the major consumer and producer of this spice. It is also commonly known as "Jeera". It can be fried, roasted, powdered, or used in dry form. It is one of the basic ingredients that is spewed in oil while preparing curries, gravies, rice, or dry savouries. It adds depth to any dish.

Cardamom

It is commonly known as "Elaichi" in India. It takes quite a bit of work to grow cardamom. This petite seeded spice is multi-purpose and can be used in beverages such as tea too. It is also added in sweets, such as kheer. It adds a warm and subtle flavour to food. It also happens to be one of the expensive spices.

Clove

Also known as "Laung" in India. Clove is the flower bud obtained from the Clove tree. Clove looks like a little lollipop. It is a sweet and aromatic spice. It has a strong flavor and is hence used cautiously. It adds a spicy warmth to dishes.

Turmeric

"Haldi" is a favourite and used in many dishes for various purposes. It has a warm and slightly bitter taste. It adds colour and flavour to the food. Due to its medical properties, it is often a perfect ingredient to add during cold and coughs.

Saffron

Also known as "Kesar". This spice is derived from the flower "Saffron Crocus". One of the most expensive spices, a pinch of saffron can change the look of the dish. Its royal charm makes any dish loaded with opulence and class. Used in a wide range of dishes, the saffron is grown most in Kashmir. It is rich in anti-oxidants and enhances weight loss.

Black pepper

Pepper is such a must that it is hard to even think of it as special. From breakfast to dinner, pepper is sprinkled on a wide range of dishes. It adds a definite flavour that is different from chillies or any other spice.

Medicinal uses

Spices are not only about taste or colour. They are good for one's health too. Each of these spices has some medicinal properties that make them stand out. Their traditional medicinal value is much appreciated even in today's chemical-driven world.

Spices in India are much more than just food ingredients. They resonate with historical significance, economic use, as well as medicinal values. The tiny bits of spices are small in size and quantity. But packed in these small sizes is a load and burst of flavours. With myriad advantages, they breathe into Indian cuisine, the foundation of taste and deliciousness.

AUTHOR: Ankita Kamlesh Singh

Reference: <https://www.nccih.nih.gov/health/ayurvedic-medicine-in-depth>

75 CROPS OF INDIA



Cinnamon

Cinnamomum verum

Anti-oxidant and reduces risk of heart disease



Flaxseed

Linum usitatissimum

Rich in lignans & control cholesterol



Hemp

Cannabis sativa
Improves immune system & oil is vit. E rich



Poppy

Papaver somniferum
Boosts heart and skin health



Cauliflower

Brassica oleracea var. botrytis

Anti-oxidant and rich in fibre



Red Lentils

Lens culinaris

Boost heart health and rich in fibre



Bengal Gram

Cicer arietinum

Treats anaemia and prevents diabetes



Red Kidney Beans

Phaseolus vulgaris

Strengthens bones and prevents cancer



Chickoo

Manilkara zapota
Boosts skin health and energy



Rice

Oryza sativa
Keeps gut healthy and easy to digest



Maize

Zea mays
Boosts nervous system and prevents aneamia



Jowar

Sorghum vulgare
Protein-rich and improves digestion

75 CROPS OF INDIA



Bajra

Pennisetum glaucum

Anti-oxidant and aids in weight control



Tur

Cajanus cajan

Fibre-rich & protects heart health



Moong

Vigna radiata

Prevents risk of chronic disease and heat stroke



Black Gram

Vigna mungo

Anti-oxidant and helps in managing glucose levels



Cotton

Gossypium herbaceum

Hypoallergenic & comfortable to wear



Jute

Corchorus olitorius

Non-woven fabric and rich in vit A & C



Groundnut

Arachis hypogaea

Weight control & stops hair loss



Soybean

Glycine max

Fibre-rich and controls cholesterol



Wheat

Triticum vulgare

Source of starch & controls blood sugar levels



Barley

Hordeum vulgare

Weight control and reduces the risk of heart disease



Peas

Pisum sativum

Boosts immune system and source of vit C



Mustard

Brassica nigra

Anti-inflammatory and helps treat cancer

75 CROPS OF INDIA



Chick Peas

Cicer arietinum
Source of fiber ,
vitamins and
minerals



Ragi

*Eleusine
coracana*
Promotes hair
health & source
of protein



Coffee

Coffea arabica
Boosts energy
levels and
promotes heart
health



Tobacco

*Nicotiana
tabacum*
Pesticide and
Insecticide



Sunflower

Helianthus annuus
Source of
vitamins and
minerals



Sugarcane

*Saccharum
offcinarum*
Boost immune system
& anti-oxidant



Sesame

*Sesamum
indicum*
Source of
calcium



Castor

Ricinus communis
Promotes skin
health & soothes
inflammation



Tea

Camellia sinensis
Boosts immune
system and calms
inflammation



Radish

Raphanus sativus
Anti-oxidant and
mineral-rich



Niger

*Guizotia
abyssinica*
Heals wounds
and relief from
cold & flu



Potato

*Solanum
tuberosum*
Fibre-rich &
anti-oxidant

75 CROPS OF INDIA



Ginger

Zingiber officinale

Lower blood sugar & keeps mouth healthy



Black Eye Beans

Vigna unguiculata

Carbohydrate-rich and weight control



Walnut

Juglans regia

Anti-oxidant and improves gut health



Betel

Piper betle

Anti-cancer agent and reduces pain



Banana

Musa acuminata

Anti-oxidant and nutrient-rich



Guava

Psidium guajava

Boost immunity and heart health



Grapes

Vitis vinifera

Improves bone health & reduces high cholesterol



Mosambi

Citrus limetta

Stimulates appetite and treats jaundice



Papaya

Carica papaya

Improves wound healing and helps control diabetes



Litchi

Litchi chinensis

Instant energy & anti-viral



Mango

Mangifera indica

Low in calories & supports eye health



Pineapple

Ananas comosus

Anti-inflammatory and pain-relieving

75 CROPS OF INDIA



Pomegranate
Punica granatum
Smoothen digestion and makes your skin glow



Cabbage
Brassica oleracea var. capitata
Weight control and anti-cancer agent



Black Pepper
Piper nigrum
Vitamin-rich and boosts metabolism



Cashewnut
Anacardium occidentale
Rich in fibre and protein



Turmeric
Curcuma longa
Anti-oxidant and improve heart health



Orange
Citrus sinensis
Boosts your immune system & source of vit C



Tomato
Solanum lycopersicum
Supports skin and hair health



Chilli
Capsicum frutescens
Calcium-rich and aids in weight loss



Clove
Eugenia caryophyllata
Gets rid of headaches and protects liver



Capsicum
Capsicum annum
Anti-oxidant and source of vit C



Watermelon
Citrullus lanatus
Helps stay hydrated and has anti-cancer effects



Cardamom
Elettaria cardamomum
Mouth freshener and body detoxification

75 CROPS OF INDIA



Saffron

Crocus sativus
Increase vitality
& protects
against cancer



Coriander

Coriandrum sativum
Regulates menstrual
cycle & prevents
bad breath



Fennel

*Foeniculum
vulgare*
Anti-flatulent &
laxative



Nutmeg

*Myristica
fragrans*
Mineral-rich &
supports
digestive health



Garlic

Allium sativum
Anti-biotic and
boosts immunity



Kokam

Garcinia indica
Ease acidity &
improves
digestion



Spinach

Spinacia oleracea
Curbs appetite &
keeps eyes
healthy



Mint

Mentha spicata
Helps to maintain
oral health &
control asthma



Carrot

Daucus carota
Source of vit A &
supports gut
health



Bitter gourd

*Momordica
charantia*
Reduces blood
sugar and anti-
cancer agent



Okra

*Abelmoschus
esculentus*
Supports immune
system & anti-
oxidant



Oyster Mushroom

Pleurotus ostreatus
Vitamin-rich & anti-
oxidant

75 CROPS OF INDIA



Brinjal

Solanum

melongena

Anti-oxidant and
weight control



Beetroot

Beta vulgaris

Lowers blood
pressure &
increases stamina.



Cucumber

Cucumis sativus

Supports immune
system and
hydrates the
body

Compiled by:

- Farzeen Shaikh
- Shweta Mahankar
- Sonali Khulam
- Chaitrali Deshpande

This poster was made with the intention to showcase the variety of different crops grown in India.

The organic farm from Rajasthan

From a small village in south-eastern Rajasthan to international markets, Hukumchand Patidar has made a name for himself in promoting organic farming. The 62-year-old farmer has made his village, Manpura, in Jhalawar district, famous in Japan, Switzerland and Germany, the three countries that import organic farm produce from the village. Patidar got Padma Shri in 2018 for his contribution to organic farming. President Ramnath Kovind conferred the civilian award to the Jhalawar farmer on March 16. In 2012, he featured in television talk show, Satyamev Jayate, which was hosted by actor and filmmaker Aamir Khan. The show was about highlighting people's achievements in fighting social issues.

Patidar who studied till class X, took to organic farming in 2003. His decision was prompted by the death of several village animals including peacocks and stray dogs allegedly after consuming pesticide contaminated soya bean crop. In response, Patidar developed two organic fertilizers – one using earthworms to produce compost and the second using cow dung, cow urine, cow milk, cow ghee, cow yoghurt, gram flour, turmeric powder and leaves.

The fertilizer made with cow products is called instant compost, he says. Wood scrapings, gram flour, turmeric powder, fallen leaves, jaggery, soil from under a banyan tree are poured in pits along with the cow products to make this instant compost.

Patidar produces around 25 tonnes of vermicompost and around 600 tonnes of instant compost every year at his farm house in Manpura village.

Over the last 16 years, he has motivated 120 farmers in the village to engage in organic farming and develop Manpura as a hub of chemical-free agriculture. They have set up a processing and grading unit in the village, and export coriander powder, garlic paste, fennel seeds and fenugreek to European countries and Japan, and supply oranges, pulses and onion to domestic markets. Patidar says his organic farming model was included in the Central government's plan for improvement of traditional farming in 2016 by forming clusters of 22 villages. "Around 4,000 farmers from Jhalawar district are a part of the programme," he adds.

Agriculture experts from 28 countries have visited Manpura for understanding the model. Kota division's agriculture joint director Ramavatar Sharma lauds Patidar's efforts in promoting organic farming. "The best thing is that he has even developed a market for organic farm produce. Farmers get a higher price for these produce compared to the ones produced using chemical fertilizers," Sharma added.



Hukumchand Patidar of Manpura village in Rajasthan's Jhalawar district was awarded Padma Shri in 2018 for his contribution to organic farming.

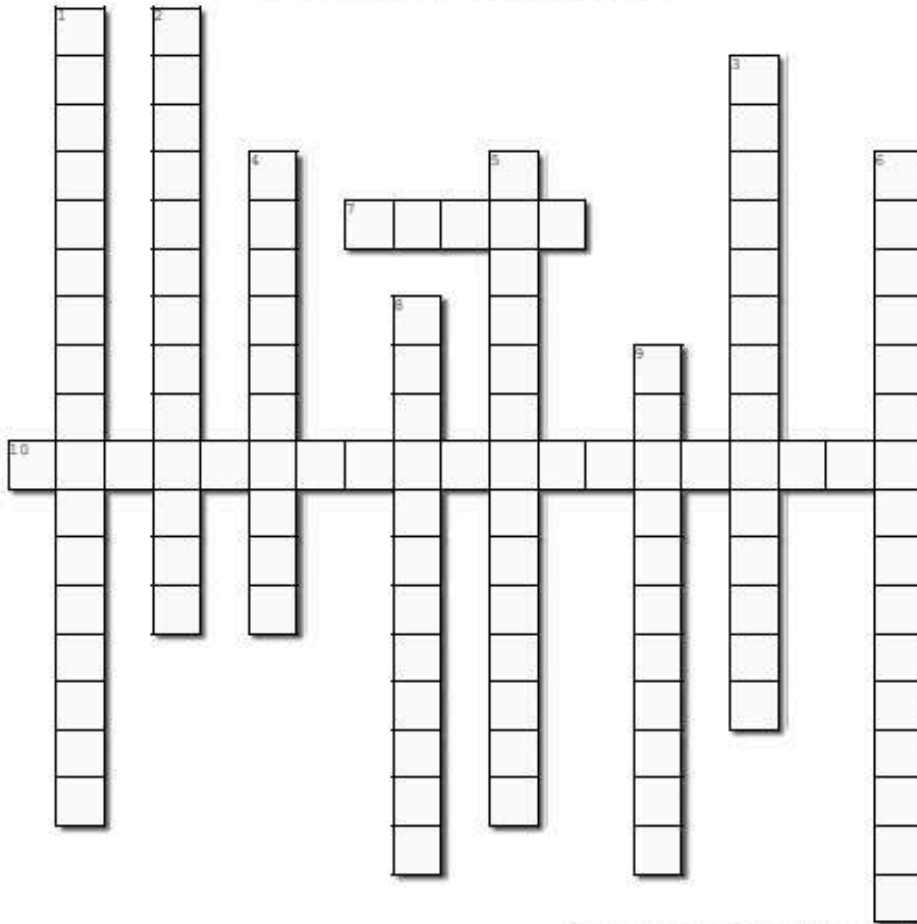
AUTHOR: Ankita Kamlesh Singh

Reference: <https://thelogicalindian.com/uplifting/hukumchand-patidar-33359>

Crossword

Name: _____

Complete the crossword puzzle below



Created using the Crossword Maker on TheTeachersCorner.net

Across

7. a herb which is termed as the root of Ayurvedic immortality was being used in Indian Medicines since ages
10. Mysterious new bio-luminescent mushroom in the forests of Meghalaya

Down

1. help lower blood sugar in people with type 2 diabetes and lower high cholesterol.
2. spice that also is a colour for our Indian Flag
3. silkworms feed on these leaves
4. the essential oil is used as aromatherapy for muscle pain.
5. Another exotic flower that's available in India.
6. It is a lichen species and popularly known as dagad phool in Marathi
8. the rhizomes of which are used in cooking and also have therapeutic uses
9. 2nd largest producer in the world of the crop

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This special edition of the Gulmohar Newsletter was created by the T.Y.Bsc Botany (2022-23) students.

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