PHARMVIDYA

Summer - 2018

A biannual publication of

Shree Naranjibhai Lalbhai Patel College of Pharmacy,
Umrakh

Pharmacist's Oath

I swear by the code of Ethics of Pharmacy Council of India
in relationship to the Community and shall act as an integral
part of health care team.

I shall uphold the laws and standards governing my profession.

I shall strive to perfect and enlarge my knowledge to contribute to
the advancement of pharmacy and public health.

I shall follow the system which i consider best for pharmaceutical
care and counseling of patients.

I shall endeavour to discover and manufacture drugs of quality to
alleviate suffering of humanity.

I shall hold in confidence the knowledge gained about the patients
in connection with my professional practice and never divulge
unless compelled to do so by the law.

I shall associate with organisations having their objectives for
betterment of the profession of pharmacy and make contribution to
carry out the work of those organisations.

While I continue to keep this oath unviolated,
may it be granted to me to enjoy life and the practice
of pharmacy respected by all, at all times!

Should I trespass and violate this oath, may the reverse be my lot!

PATRON
SHREE MANHARBHAI PATEL

PATRON
SHREE KIRITBHAI PATEL

PATRON
SHREE ASHWINBHAI PATEL

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ABOUT INSTITUTE

Shree N. L. Patel College of Pharmacy, Umrakh was established in the year 2004 under the ages of Vidyabharti Trust with main objective of visionary in the mission of quality Pharmacy education.

The Shree N. L. Patel College of Pharmacy is located on the way of Bardoli-Mota road 3 kilometer away from Bardoli and 34 kilometer away from Surat in a lush green sprawling campus with sufficient infrastructure facilities.

The college is approved by the Pharmacy Council of India (PCI), New Delhi, All India Council for Technical Education (AICTE), New Delhi, recognized by Government of Gujarat and affiliated to Gujarat Technological University (GTU), Ahmadabad.

At this moment Shree N. L. Patel College of Pharmacy offers B. Pharm and M.Pharm course in Pharmaceutics, Quality Assurance & Pharmacology to input knowledge and empower individuals with wisdom to prepare pharmacist of the future.

VISION OF THE INSTITUTE

To emerge as the most preferred pharmacy institute and to develop pharmacists who will lead the nation to a better future.

MISSION OF THE INSTITUTE

- To provide a stimulating environment where knowledge of basic subjects is integrated with health concerns for the world community.
- To inculcate professional ethics, social responsibility and commitment for lifelong learning.
- To March on a par with current developments to become a professionally competent.

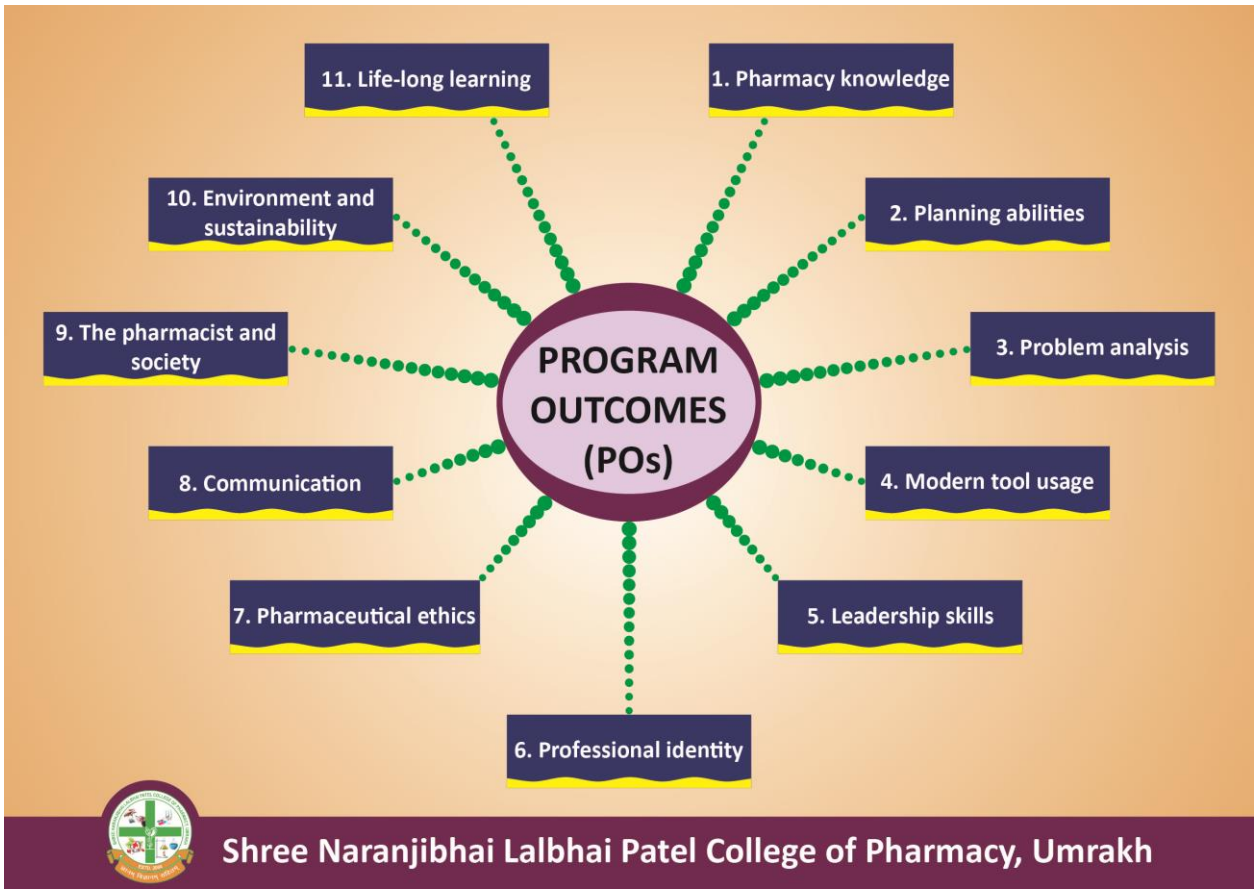
PROGRAM EDUCATIONAL OBJECTIVES (PEOS)

PEO1: Knowledge: To teach and help to assimilate theoretical and practical knowledge in various pharmaceutical fields.

PEO2: Competency: To develop leadership skills, team building skills, community services and ethical practices.

PEO3: Professionalism: To encourage the students for participation in various conferences, seminars, workshops and expert talks.

PROGRAM OUTCOMES (POS)



MESSAGES

Dr. Dhiren P. Shah
Principal, SNLPCP

It is a matter of great pride that Vidyabharti Trust College of Pharmacy is keeping alive many traditions and Pharmvidya being one of them. It is my pleasure to handover the issue of Pharmvidya to you. Pharmvidya is an expression of our students' spirit and creative enthusiasm. Every year students participate with full vigor in different events and equally excel in academics. Besides this, VBTCP has always believed in nurturing the moral values and the sense of social responsibilities along with professional attitude. We also take initiative to arrange educational tours, industrial visits, guest lectures and many more to sharpen the students' practicality. The dear alumni of the college also gather every year to discuss the current professional challenges with these budding pharmacists. I also congratulate the Editorial team for their credentials and working tirelessly to improve the quality and standard of magazine year by year.

Dr. Rumit M. Shah
Editor

The editorial board is Glad to release the current issue of Pharmvidya online magazine.The contribution and dedication of faculty members, students and nonteaching staff of college is continuously helping the magazine in stepwise manner for achieving new mile stone. The magazine provides a perfect platform to highlight the literary and artistic segments of the SNLPCP family. The purpose of this college magazine is to unlock the hidden potential within the students and helped the students for self-motivation.

INDEX

Article Submitted By: Manish Prajapati; Gunjan Shah

Herbs & Body Systems

One of the most common ways of classifying medicinal plants is to identify their actions, for example whether they are sedative, antiseptic, or diuretic, and the degree to which they affect different body systems. Herbs often have a pronounced action on a particular body system, for example a plant that is strongly antiseptic in the digestive tract may be less so in the respiratory tract. Examples of how herbs work on the body are given below.

Skin

Antiseptics, e.g., tea tree (*Melaleuca alternifolia*, p. 112), disinfect the skin. *Emollients,* e.g., marshmallow (*Althea officinalis*, p. 165), reduce itchiness, redness, and soreness. *Astringents,* e.g., witch hazel (*Hamamelis virginiana*, p. 102), tighten the skin. *Depuratives,* e.g., burdock (*Arctium lappa*, p. 65), encourage removal of waste products. *Healing and vulnerary herbs,* e.g., comfrey (*Symphytum officinale*, p. 138) and calendula (*Calendula officinalis*, p. 73), aid the healing of cuts, wounds, and abrasions.

Calendula
(Calendula officinalis)

Immune system

Immune modulators, e.g., echinacea (*Echinacea* spp. p. 92) and pau d'arco (*Tabebuia* spp., p. 139), encourage the immune system to ward off infection.

Echinacea
(Echinacea spp.)

Respiratory system

Antiseptics and antibiotics, e.g., garlic (*Allium sativum*, p. 59), help the lungs resist infection. *Expectorants,* e.g., elecampane (*Inula helenium*, p. 107), stimulate the coughing up of mucus. *Demulcents,* e.g., coltsfoot (*Tussilago farfara*, p. 278), soothe irritated membranes. *Spasmolytics,* e.g., visnaga (*Ammi visnaga*, p. 62), relax bronchial muscles.

Garlic
(Allium sativum)

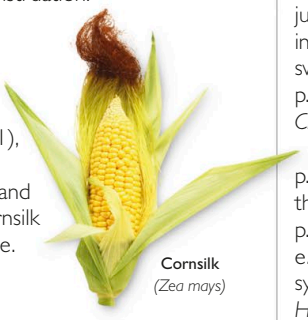
Endocrine glands

Adaptogens, e.g., ginseng (*Panax ginseng*, p. 118), help the body adjust to external pressures and stress. *Hormonally active herbs,* e.g., chaste tree (*Vitex agnus-castus*, p. 151), stimulate production of sex and other hormones. *Emmenagogues,* e.g., black cohosh (*Cimicifuga racemosa*, p. 79), encourage or regulate menstruation.

Ginseng
(Panax ginseng)

Urinary system

Antiseptics, e.g., buchu (*Barosma betulina*, p. 71), disinfect the urinary tubules. *Astringents,* e.g., horsetail (*Equisetum arvense*, p. 205), tighten and protect the urinary tubules. *Diuretics,* e.g. cornsilk (*Zea mays*, p. 154), stimulate the flow of urine.



Cornsilk
(Zea mays)

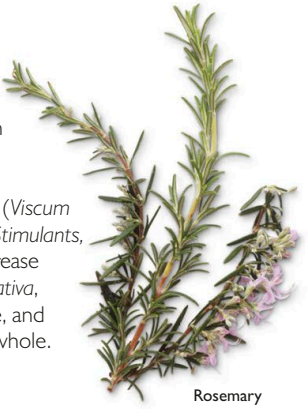
Musculoskeletal system

Analgesics, e.g., yellow jasmine (*Gelsemium empervirens*, p. 216), relieve joint and nerve pain. *Anti-inflammatories,* e.g., white willow (*Salix alba*, p. 129), reduce swelling and pain in joints. *Antispasmodics,* e.g., cinchona (*Cinchona* spp., p. 80), relax tense and cramped muscles.

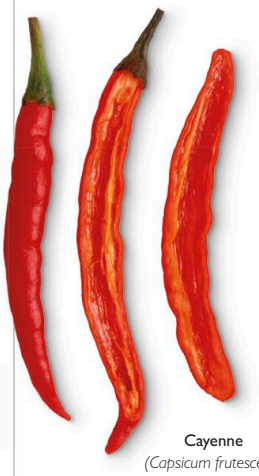
White Willow
(Salix alba)

Nervous system

Nervines, e.g., rosemary (*Rosmarinus officinalis*, p. 128), support and strengthen the nervous system. *Relaxants,* e.g., lemon balm (*Melissa officinalis*, p. 113), relax the nervous system. *Sedatives,* e.g., mistletoe (*Viscum album*, p. 283), reduce nervous activity. *Stimulants,* e.g., kola nut (*Cola acuminata*, p. 192), increase nervous activity. *Tonics,* e.g., oats (*Avena sativa*, p. 175), improve nerve function and tone, and help to restore the nervous system as a whole.



Rosemary
(Rosmarinus officinalis)



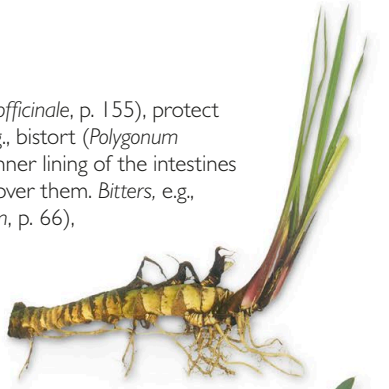
Cayenne
(Capsicum frutescens)

Circulation & heart

Cardiotonics, e.g., *dan shen* (*Salvia miltiorrhiza*, p. 130), vary in action. Some slow heartbeat rate, while others increase it. Some improve the regularity and strength of the heart's contractions. *Circulatory stimulants,* e.g., cayenne (*Capsicum frutescens*, p. 74), improve the circulation of blood to the extremities. *Diaphoretics,* e.g., *ju hua* (*Chrysanthemum* × *morifolium*, p. 78), encourage blood flow to the surface of the body, promote sweating, and lower blood pressure. *Spasmolytics,* e.g., cramp bark (*Viburnum opulus*, p. 150), relax the muscles, helping to lower blood pressure.

Digestive organs

Antiseptics, e.g., ginger (*Zingiber officinale*, p. 155), protect against infection. Astringents, e.g., bistort (*Polygonum bistorta*, p. 253), tighten up the inner lining of the intestines and create a protective coating over them. *Bitters,* e.g., wormwood (*Artemisia absinthium*, p. 66), stimulate secretion of digestive juices by the stomach and intestines. *Carminatives,* e.g., sweet flag (*Acorus calamus*, p. 57), relieve gas and cramps. *Cholagogues,* e.g, fringe tree (*Chionanthus virginicus*, p. 188), improve the flow of bile into the intestines. *Choleretics,* e.g., artichoke (*Cynara scolymus*, p. 199), stimulate secretion of bile by the liver. *Demulcents,* e.g., psyllium (*Plantago* spp., p. 123), soothe the digestive system and protect against acidity and irritation. *Hepatics,* e.g., bupleurum (*Bupleurum chinense*, p. 72), prevent liver damage. *Laxatives,* e.g., senna (*Cassia senna*, p. 75), stimulate bowel movements. *Stomachics,* e.g., cardamom (*Eletteria cardamomum*, p. 93), protect and support the stomach.



Sweet Flag
(Acorus calamus)

Senna
(Cassia senna)

Article Submitted By:
Yash Ranan; Lalit Chaudhari

Active Constituents

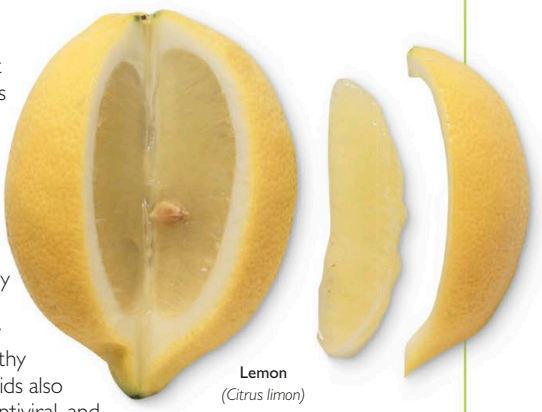
The medicinal effects of certain plants are well known. German chamomile, for example, has been taken to soothe digestive problems for thousands of years, and aloe vera was known to Cleopatra as a healing skin remedy. It is only relatively recently, however, that active constituents responsible for the medicinal actions of plants have been isolated and observed. Knowing a little about the chemicals contained in plants helps you to understand how they work within the body.

Thyme
(Thymus vulgaris)

Phenols

Phenols are a very varied group of plant constituents ranging from salicylic acid, a molecule similar to aspirin (acetylsalicylic acid), to complex sugar-containing phenolic glycosides. Phenols are often anti-inflammatory and antiseptic, and are thought to be produced by plants to protect against infection and feeding by insects. Phenolic acids, such as rosmarinic acid, are strongly antioxidant and anti-inflammatory, and can also have antiviral properties. Wintergreen (*Gaultheria procumbens*, p. 215) and white willow (*Salix alba*, p. 129) both contain salicylates. Many mint family members contain phenols—for example, the strongly antiseptic thymol, found in thyme (*Thymus vulgaris*, p. 143).

Flavonoids

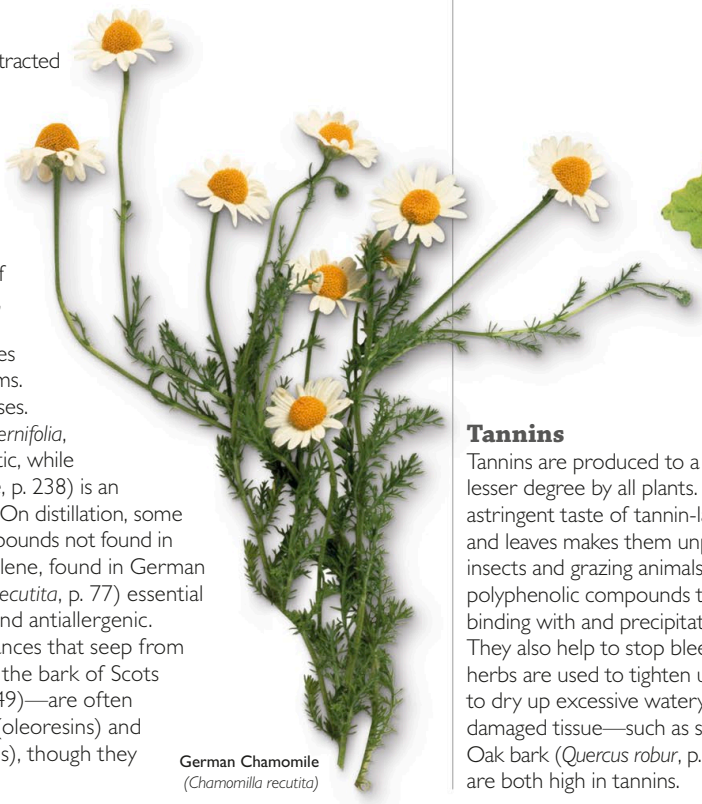


Lemon
(Citrus limon)

Found widely throughout the plant world, flavonoids are polyphenolic compounds that act as pigments, imparting color, often yellow or white, to flowers and fruits. They have a wide range of actions and many medicinal uses. They are antioxidant and especially useful in maintaining healthy circulation. Some flavonoids also have anti-inflammatory, antiviral, and liver-protective activity. Flavonoids such as hesperidin and rutin, found in many plants, notably buckwheat (*Fagopyrum esculentum*, p. 210) and lemon (*Citrus limon*, p. 82), strengthen capillaries and prevent leakage into surrounding tissues. Isoflavones, found for example in red clover (*Trifolium pratense*, p. 277), are estrogenic and valuable in treating menopausal symptoms.

Volatile Oils

Volatile oils—which are extracted from plants to produce essential oils—are some of the most important medicinally active plant constituents, and are also used widely in perfumery. They are complex mixtures often of 100 or more compounds, mostly made up of monoterpenes—molecules containing 10 carbon atoms. Essential oils have many uses. Tea tree oil (*Melaleuca alternifolia*, p. 112) is strongly antiseptic, while sweet gale oil (*Myrica gale*, p. 238) is an effective insect repellent. On distillation, some essential oils contain compounds not found in the volatile oil—chamazulene, found in German chamomile (*Chamomilla recutita*, p. 77) essential oil, is anti-inflammatory and antiallergenic. Resins—sticky oily substances that seep from plants, for example from the bark of Scots pine (*Pinus sylvestris*, p. 249)—are often linked with essential oils (oleoresins) and gums (see Polysaccharides), though they are nonvolatile.



German Chamomile
(Chamomilla recutita)

Black Catechu
(Acacia catechu)

Tannins

Tannins are produced to a greater or lesser degree by all plants. The harsh, astringent taste of tannin-laden bark and leaves makes them unpalatable to insects and grazing animals. Tannins are polyphenolic compounds that contract and astringe tissues of the body by binding with and precipitating proteins—hence their use to "tan" leather. They also help to stop bleeding and to check infection. Tannin-containing herbs are used to tighten up over-relaxed tissues—as in varicose veins—to dry up excessive watery secretions—as in diarrhea—and to protect damaged tissue—such as skin problems resulting from eczema or a burn. Oak bark (*Quercus robur*, p. 260) and black catechu (*Acacia catechu*, p. 158) are both high in tannins.

Proanthocyanins

Closely related to tannins and flavonoids, these polyphenolic compounds are pigments that give flowers and fruits a blue, purple, or red hue. They are powerfully antioxidant and free-radical scavengers. They protect the circulation from damage, especially the circulation in the heart, hands, feet, and eyes. Blackberry (*Rubus fruticosus*, p. 264), red grapes (*Vitis vinifera*, p. 283), and hawthorn (*Crataegus oxycantha*, p. 87) all contain appreciable quantities of these proanthocyanins.

Blackberry
(Rubus fruticosus)

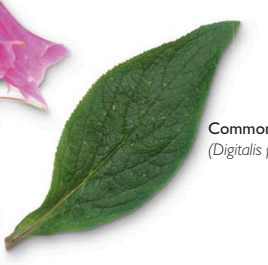
Anthraquinones

Anthraquinones are the main active constituents in herbs such as senna (*Cassia senna*, p. 75) and Chinese rhubarb (*Rheum palmatum*, p. 126), both of which are taken to relieve constipation. Anthraquinones have an irritant laxative effect on the large intestine, causing contractions of the intestinal walls and stimulating a bowel movement approximately 10 hours after being taken. They also make the stool more liquid, easing bowel movements.

Chinese Rhubarb
(Rheum palmatum)

Cardiac Glycosides

Found in various medicinal plants, notably in foxgloves (see common foxglove, *Digitalis purpurea*, p. 202) and in lily of the valley (*Convallaria majalis*, p. 194), cardiac glycosides such as digitoxin, digoxin, and convallotoxin have a strong, direct action on the heart, supporting its strength and rate of contraction when it is failing. Cardiac glycosides are also significantly diuretic. They help to stimulate urine production, thus increasing the removal of fluid from the tissues and circulatory system.



Common Foxglove
(Digitalis purpurea)

Celery
(Apium graveolens)

Coumarins

Coumarins of different kinds are found in many plant species and have widely divergent actions. The coumarins in melilot (*Melilotus officinalis*, p. 234) and horse chestnut (*Aesculus hippocastanum*, p. 58) help to keep the blood thin, while furanocoumarins such as bergapten, found in celery (*Apium graveolens*, p. 64), stimulate skin tanning, and khellin, found in visnaga (*Ammi visnaga*, p. 62), is a powerful smooth-muscle relaxant.

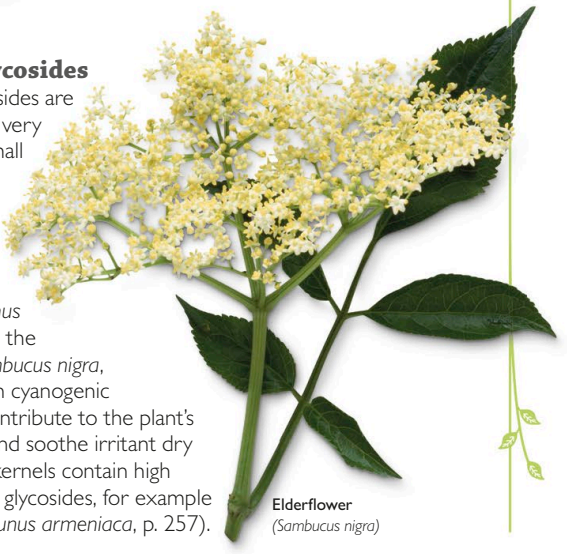
Licorice
(Glycyrrhiza glabra)

Saponins

The main active constituents in many key medicinal plants, saponins gained their name because, like soap, they make a lather when placed in water. Saponins occur in two different forms—steroidal and triterpenoid. The chemical structure of steroidal saponins is similar to that of many of the body's hormones, for example estrogen and cortisol, and many plants containing them have a marked hormonal activity. Wild yam (*Dioscorea villosa*, p. 91), from which the contraceptive pill was first developed, contains steroidal saponins. Triterpenoid saponins occur more commonly—for example in licorice (*Glycyrrhiza glabra*, p. 101) and cowslip root (*Primula veris*, p. 256)—but have less hormonal activity. They are often expectorant and aid absorption of nutrients.

Cyanogenic glycosides

Though these glycosides are based on cyanide, a very potent poison, in small doses they have a helpful sedative and relaxant effect on the heart and muscles. The bark of wild cherry (*Prunus serotina*, p. 257) and the leaves of elder (*Sambucus nigra*, p. 132) both contain cyanogenic glycosides, which contribute to the plant's ability to suppress and soothe irritant dry coughs. Many fruit kernels contain high levels of cyanogenic glycosides, for example those of apricot (*Prunus armeniaca*, p. 257).



Elderflower
(Sambucus nigra)

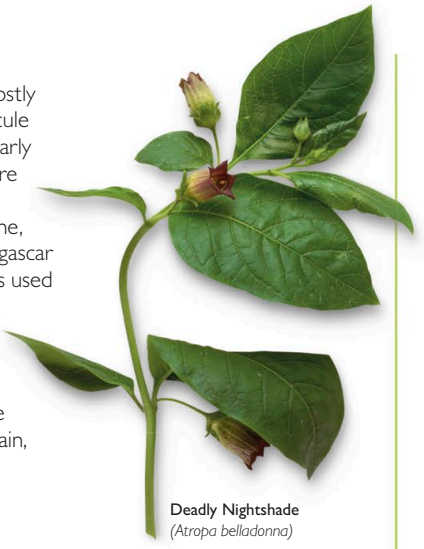
Polysaccharides

Found in all plants, polysaccharides are multiple units of sugar molecules linked together. From an herbal point of view, the most important polysaccharides are the "sticky" mucilages and gums, which are commonly found in roots, bark, leaves, and seeds. Both mucilage and gum soak up large quantities of water, producing a sticky, jelly-like mass that can be used to soothe and protect irritated tissue, for example, dry irritated skin and sore or inflamed mucous membranes in the gut. Mucilaginous herbs, such as slippery elm (*Ulmus rubra*, p. 145) and linseed or flaxseed (*Linum usitatissimum*, p. 109), are best prepared by soaking (macerating) in plenty of cold water. Some polysaccharides stimulate the immune system, for example acemannan, which is found in the leaves of aloe vera (*Aloe vera*, p. 60).

Slippery Elm
(Ulmus rubra)

Alkaloids

A very mixed group, alkaloids mostly contain a nitrogen-bearing molecule ($-NH_2$) that makes them particularly pharmacologically active. Some are well-known drugs and have a recognized medical use. Vincristine, for example, derived from Madagascar periwinkle (*Vinca rosea*, p. 282), is used to treat some types of cancer. Other alkaloids, such as atropine, found in deadly nightshade (*Atropa belladonna*, p. 69), have a direct effect on the body, reducing spasms, relieving pain, and drying up bodily secretions.



Deadly Nightshade
(Atropa belladonna)

Radish
(Raphanus sativus)

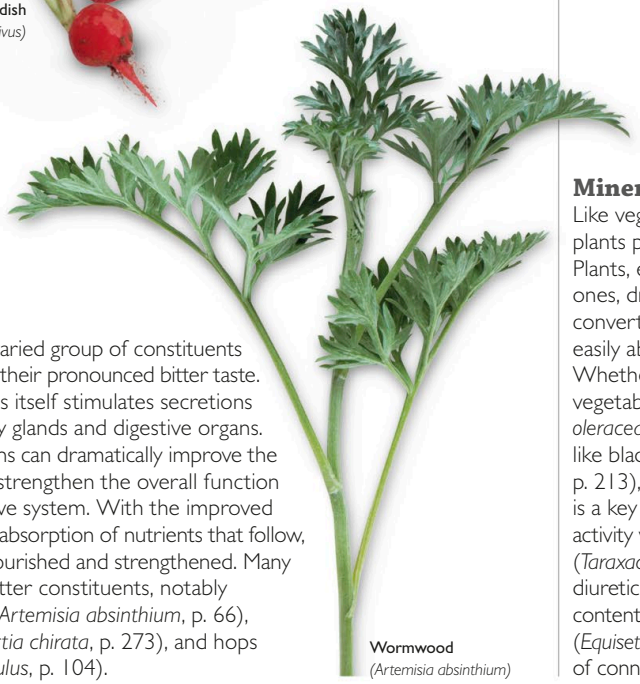
Glucosilinates

Found exclusively in species of the mustard and cabbage family, glucosilinates have an irritant effect on the skin, causing inflammation and blistering. Applied as poultices to painful or aching joints, they increase blood flow to the affected area, helping to remove the buildup of waste products (a contributory factor in many joint problems). On eating, glucosilinates are broken down and produce a strong, pungent taste. Radish (*Raphanus sativus*, p. 261) and watercress (*Nasturtium officinale*, p. 239) are typical glucosilinate-containing plants.

Dog Rose
(Rosa canina)

Vitamins

Though often overlooked, many medicinal plants contain useful levels of vitamins. Some are well known for their vitamin content, for example dog rose (*Rosa canina*, p. 263) has high levels of vitamin C, and carrot (*Daucus carota*, p. 201) is rich in beta-carotene (pro-vitamin A), but many are less well recognized. Watercress (*Nasturtium officinale*, p. 239), for example, contains appreciable levels of vitamins B_1, B_2, C, and E as well as beta-carotene, while sea buckthorn (*Hippophae rhamnoides*, p. 220) can be regarded as a vitamin and mineral supplement in its own right.



Wormwood
(Artemisia absinthium)

Bitters

Bitters are a varied group of constituents linked only by their pronounced bitter taste. The bitterness itself stimulates secretions by the salivary glands and digestive organs. Such secretions can dramatically improve the appetite and strengthen the overall function of the digestive system. With the improved digestion and absorption of nutrients that follow, the body is nourished and strengthened. Many herbs have bitter constituents, notably wormwood (*Artemisia absinthium*, p. 66), chiretta (*Swertia chirata*, p. 273), and hops (*Humulus lupulus*, p. 104).

Minerals

Like vegetable foods, many medicinal plants provide high levels of minerals. Plants, especially organically grown ones, draw minerals from the soil and convert them into a form that is more easily absorbed and used by the body. Whether plants are eaten as a vegetable, like cabbage (*Brassica oleracea*, p. 180), or taken as a medicine, like bladderwrack (*Fucus vesiculosus*, p. 213), in many cases the mineral content is a key factor in the plant's therapeutic activity within the body. Dandelion leaf (*Taraxacum officinale*, p. 141) is a potent diuretic, balanced by its high potassium content, while the high silica content of horsetail (*Equisetum arvense*, p. 205) supports the repair of connective tissue, making it useful in arthritis.

Dandelion
(Taraxacum officinale)

QCFI

In-House training & Orientation Program for students were organized with QCFI.

Guest Lecture

Topic: Diabetes Management in Young Ones

Guest Speaker: Dr. Darshak R. Shah

Number of Participants: 45

Summary of Lecture:

S.N.L.P. College of Pharmacy has arranged expert talk lecture on **"Diabetes Management in Young Ones"** for B. Pharm students on 22nd February 2018. The increasing prevalence of diabetes among adolescents and young adults below 20 years of age is, perhaps, the most worrisome aspect of the global epidemic of diabetes.Sir has explained that biggest concern with diabetes is cardiovascular risk such as; Heart attack, Stroke, Heart Failure, Atrial Fibrillation, and Peripheral artery disease. There are four main things sir has recommend to avoid diabetes in adolescents and their families do: 1) Get regular exercise 2) Maintain a healthy diet 3) Maintain a healthy weight and 4) Know your numbers. At-risk teens need to be aware of their blood pressure and cholesterol levels and manage them with healthy lifestyle changes and medication.
The teaching faculties of SNLPCP and 45 students of B. Pharm attended the session. Sir, has shared detailed with various examples for the same. This lecture will enlightening for the students to know the causes and contribution factors of diabetes. Timely and accurate diagnosis, combined with regular follow-up and maintenance of optimal glycemic and risk factor control by judicious use of the available therapies will ensure that these young people enjoy a long, fruitful, and complication-free life in spite of diabetes.

Student's Creativity

Painting Done By: Devdhara Bhumi

Painting Done By: Parmar Pooja

INSTITUTE TOPPERS

GPAT Qualifier
Pathak Priya with 94.0 PR
AIR - 2840

M.Pharm 4thsem (P'ceutics)		
1.	Shukla Sanghmitra N.	10.00 SPI
2.	Bhansenajuka D.	10.00 SPI
M.Pharm 4thsem(P'cology)		
1.	Priyanka Chaudhari	08.00 SPI
2.	Urvi Patel	08.00 SPI
M. Pharm 4thsem(Q.A.)		
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