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**Department of Botany
Gujarat University
Ahmedabad -380009
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ANKUR

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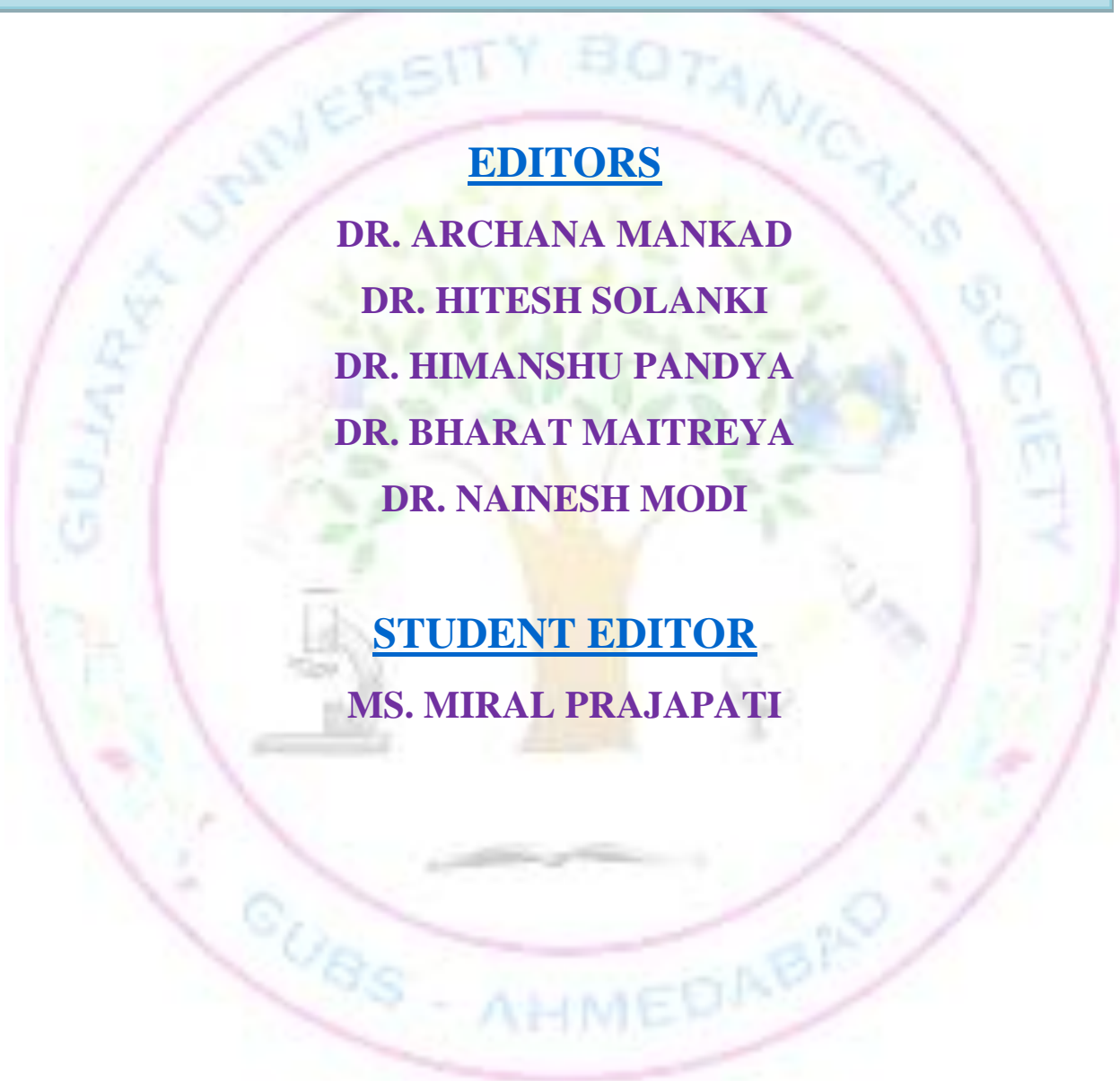
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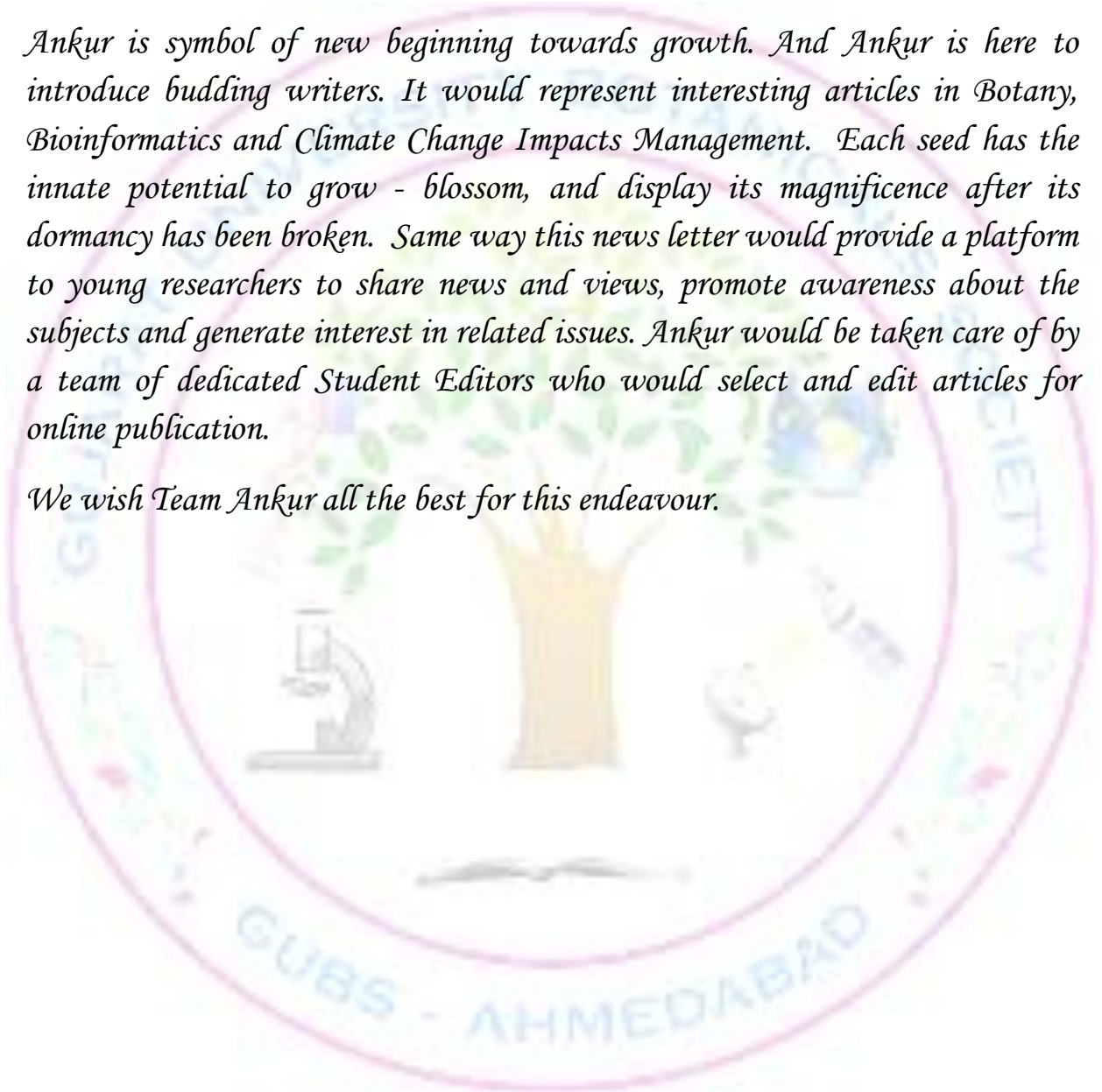


ANKUR

.....Sprouting of thoughts

Ankur is symbol of new beginning towards growth. And Ankur is here to introduce budding writers. It would represent interesting articles in Botany, Bioinformatics and Climate Change Impacts Management. Each seed has the innate potential to grow - blossom, and display its magnificence after its dormancy has been broken. Same way this news letter would provide a platform to young researchers to share news and views, promote awareness about the subjects and generate interest in related issues. Ankur would be taken care of by a team of dedicated Student Editors who would select and edit articles for online publication.

We wish Team Ankur all the best for this endeavour.





FROM EDITOR'S DESK....

Ankur is now five years old. This newsletter is intended to be published twice in a year. The growth and development of Ankur is a reflection of the growth and progress of the students of the department. This news letter will serve to reinforce and allow increased awareness, improved interaction and integration among all of us.

The journey began four years ago and now Ankur has blossomed and is spreading the fragrance to everyone around with the message that plants can also improve our health. In this issue, we focus on herbal remedies.

Editorial Team

Dr. Archana Mankad

Dr. Hitesh Solanki

Dr. Himanshu Pandya

Dr. Bharat Maitreya

Dr. Nainesh Modi

Ms. Miral Prajapati



Patron's Message.....

The meaning of most common saying "health is wealth" is very simple and easy. It means our good health is the real wealth of our life which gives us good physique, mind and enables us to enjoy whole life by managing its challenges. Good health promotes a good mental, physical and social health. I completely agree with this saying that health is actually true wealth as it helps us all. Good health keeps us away from the mental and physical disabilities as well as other medical conditions including cancer, diabetes, heart disease, fatal diseases, etc.

A physically or internally unfit person has to face lot of challenges in the whole life even she/he has to be depending on someone else for performing daily basic needs. This situation is quite embarrassing for one who faces it. So, it is good to maintain a good health forever to be happy forever without anyone's help. It is true that to maintain a good health we need money and to earn money we need good health. But it is also true that without money we can live life and without a good health we cannot live life happily. Because our good health helps us all the time and encourages us to do something better in our life, instead of earning money only.

In such a busy life and polluted environment, it is very hard for everyone to maintain a good health and live healthy life. It needs a careful watch and regular medical check-up to get healthy.

<http://www.indiacelebrating.com/essay/health-is-wealth-essay/>

Dr. Archana Mankad

Patron-GUBS

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FLAX (*LINUMUSITATISSIMUM*) - THE WONDER HERB

Dr. Archana Mankad



Flax seeds have been consumed as food for around 6,000 years and may have very well been the world's first cultivated superfood! They are also called linseeds, are small, brown, tan or golden-colored seeds that are the richest sources of a plant-based omega-3 fatty acids, called alpha-linolenic acid (**ALA**) and Lignans in the world!

9 Benefits of Flax Seeds

Flax seeds are enriched with some of the most essential and basic nutrients that our body requires.

1. They are cholesterol free, hence good for the heart as well.
2. They are a good source of fibre, aid in digestion, prevent constipation and help in suppressing hunger.
3. Other nutrients would include protein, magnesium, calcium, phosphorous, omega 3 (alpha-linolenic acid), lignin and mucilage.
4. Regular consumption of flax seeds is good for skin, cancer prevention and facilitates weight-loss.
5. Flax seeds are great for women's health. The lignans present in them help in battling high levels of estrogen and help in maintaining balanced hormonal levels.
6. According to a Delhi-based weight-management expert and nutritionist Dr. Gargi Sharma, "Flax seeds can help reduce menopausal symptoms, such as flushing and night sweats. Flax seeds can also help women with irregular periods and those with extreme symptoms of PMS - for example, headache, anxiety, mood swings etc. They also help in controlling heavy bleeding during menstruation reduce the risk of breast cancer and improve uterine function."
7. In women, hair fall is often associated with hormonal imbalance and stress. Flax seeds are great for women health and therefore promote healthy hair as well.
8. They are also associated with reducing hypertension.
9. They are low in LDL (lipo-protein) or bad cholesterol.



Reference:

Natural Health: 10 Amazing Benefits of Consuming Flax seed - Dr. Axe

<https://draxe.com/10-flax-seed-benefits-nutrition-facts/>

How to Eat Flax Seeds? Health Benefits, Tips and Recipes - NDTV Food

food.ndtv.com > Food & Drinks

GINGER(ZINGIBER OFFICINALE)

Dr. Hitesh Solanki



Ginger is a common ingredient in Asian and Indian cuisine.

Ginger has a long history of use for relieving digestive problems such as nausea, loss of appetite, motion sickness and pain.

The root or underground stem (rhizome) of the ginger plant can be consumed fresh, powdered, dried as a spice, in oil form or as juice. Ginger is part of the Zingiberaceae family.

It is believed to help in

- 1) Digestive issues
- 2) Nausea
- 3) Pain reduction
- 4) Inflammation

Ginger is among the healthiest (and most delicious) spices on the planet.

It is loaded with nutrients and bioactive compounds that have powerful benefits for your body and brain.

Here are 11 health benefits of ginger that are supported by scientific research.

1. Ginger Contains Gingerol, a Substance With Powerful Medicinal Properties.
2. Ginger Can Treat Many Forms of Nausea, Especially Morning Sickness.
3. Ginger May Reduce Muscle Pain and Soreness.
4. The Anti-Inflammatory Effects can help patients suffering from Osteoarthritis.
5. Ginger May Drastically Lower Blood Sugars and Improve Heart Disease Risk Factors.
6. Ginger Can Help Treat Chronic Indigestion.
7. Ginger Powder May Significantly Reduce Menstrual Pain.
8. Ginger May Lower Cholesterol Levels.
9. Ginger Contains a Substance That May Help Prevent Cancer.
10. Ginger May Improve Brain Function and Protect against Alzheimer's disease.
11. The Active Ingredient in Ginger Can Help Fight Infections.

Reference:

www.medicalnewstoday.com/articles/265990.php

<https://authoritynutrition.com/11-proven-benefits-of-ginger/>

CORIANDER (CILANTRO): CORIANDRUM SATIVUM

Dr. Himanshu Pandya

Coriander is an aromatic herb with wide, delicate lacy leaves and a pungent smell. It belongs to the apiaceae family. All parts of the plant are edible. Its fresh leaves and dried seeds are most widely used in cooking. The seeds are commonly used as spice. The leaves, roots and stems of cilantro plant have been found to have antiseptic and carminative properties.

Coriander: Health Benefits

In addition to its fresh and aromatic flavour, coriander is rich in vital vitamins and antioxidants like beta-carotene, vitamin C and folates, thus offering a variety of health benefits given below.

1. Cardiovascular Health
2. Lowers Blood Pressure
3. Treats Anxiety
4. Facilitates Peaceful Sleep
5. Digestive Aid
6. Heavy Metal Detoxifier
7. Anti-diabetic Properties
8. Anti-inflammatory Effects
9. Antioxidant Properties
10. Anti-bacterial and Anti-fungal Properties
11. Natural Deodorant
12. Aids in Weight Loss
13. Treatment of Menstrual Disorders



Reference: www.food.com/about/cilantro-16



green olives

OLIVE (*OLEA EUROPAEA*)

Dr. Bharat Maitreya



black olives


The olive tree, *Olea europaea*, belonging to Oleaceae has been cultivated for olive oil, fine wood, olive leaf, and the olive fruit. 90% of all harvested olives are turned into oil, while about 10% are used as table olives.

Table olives are classified into Green olives, Semi-ripe or turning-colour olives & Black olives or ripe olives according to the degree of ripeness achieved before harvesting. Raw or fresh olives are naturally very bitter; to make them palatable, olives must be cured and fermented, thereby removing oleuropein, a bitter phenolic compound that can reach levels of 14% of dry matter in young olives. In addition to oleuropein, other phenolic compounds render freshly picked olives unpalatable and must also be removed or lowered in quantity through curing and fermentation.

Olive oil is a liquid fat obtained from olives. It consists mainly of oleic acid (up to 83%), with smaller amounts of other fatty acids including linoleic acid (up to 21%) and palmitic acid (up to 20%). Extra-virgin olive oil is required to have no more than 0.8% free acidity and is considered to have favourable flavour characteristics

Olive oil consumption is thought to affect cardiovascular health. It has been suggested that long-term consumption of small quantities of the polyphenol, oleocanthal, from olive oil may be responsible in part for the low incidence of heart disease. Epidemiological studies indicate that a higher proportion of monounsaturated fats in the diet may be linked with a reduction in the risk of coronary heart disease. There is preliminary evidence that regular consumption of olive oil may lower risk of all-cause mortality and several chronic diseases.

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OATS (AVENA SATIVA)

Dr. Nainesh Modi



Oats are among the healthiest grains on earth.

They're a gluten-free whole grain and a great source of important vitamins, minerals, fiber and antioxidants. Studies show that oats and oatmeal (Oats cooked as porridge with milk is called oat meal) have many health benefits. These include weight loss, lower blood sugar levels and a reduced risk of heart disease.

Here are 9 evidence-based health benefits of eating oats.

1. Oats Are Incredibly Nutritious
2. Whole Oats Are Rich in Antioxidants, Including Avenanthramides
3. Oats Contain a Powerful Soluble Fiber Called Beta-Glucan
4. They Can Lower Cholesterol Levels and Protect LDL Cholesterol From Damage
5. Oats Can Improve Blood Sugar Control
6. Oatmeal is Very Filling and May Help You Lose Weight
7. Finely Ground Oats May Help with Skin Care
8. They May Decrease the Risk of Childhood Asthma
9. Oats May Help Relieve Constipation

Reference: <http://www.anniesremedy.com/avena-sativa-oats.php>

**NATURAL HEALTH BENEFITS OF ANETHUM
GRAVEOLENS**

Miral Prajapati



Dill, scientifically known as *AnethumGraveolens*, has been used for culinary and medicinal purposes for hundreds of years. Both the seeds and the leaves can be used. Apart from giving a strong, tangy, appetizing flavour and taste, dill has many medicinal properties, which mainly come from certain compounds called Monoterpenes, as well as flavonoids, minerals and certain amino acids. Dill has been used for generations as a herbal remedy to treat flatulence and colic. It is safe enough for children to take for these ailments. It aids the digestion of foods, and is a relief for abdominal cramping, heartburn and indigestion. It is useful to increase the appetite, for hiccups and liver and gall bladder complaints. It also aids in milk production for nursing mothers. It encourages enzyme formation in the body. It has been used to treat insomnia, headache and infection. Some recommend this herb to relieve fever, ulcers, uterine pain, gonorrhoea and obesity. Dill seeds can freshen the breath when chewed. Poultices can be applied to skin cysts. It is also used for haemorrhoids, as a head wash for lice and to address eye problems.

Other Uses: Dill is a well-known culinary herb used in pickling, baking and fine cooking. The seeds are also used to flavour vermouth. Roasted seeds were once used as a coffee substitute. It is also used in veterinary medicine to treat digestive problems, fever and to increase milk production in livestock. The oil from the plant is used in soap, detergents, as food flavouring and in pharmaceuticals. Seeds are used both medicinally and to season food. Oil is distilled from the seeds, and the leaves are sometimes used as well.

Preparation and dosage: Herbal remedy is commonly taken as an infusion, as dill water, powdered seeds or oil. An infusion can easily be made by steeping 1 to 2 teaspoons of slightly crushed seeds in a cup of boiling water for 10 to 15 minutes. Strain before drinking. This infusion can be taken before meals. If you are using a tincture, take 1 to 2 ml of the remedy three times per day.

References:

<https://www.organicfacts.net/health-benefits/seed-and-nut/dill.html>

<http://www.digherbs.com/dill.html>

NILIGIRI... AT ITS BEST

Nikita Sapra



Eucalyptus species are remarkable for their rapid growth. Some species of them are in their natural habitat, attain gigantic sizes and are among the tallest trees of the world. Most of the species are popularly called gum trees although the exudation from them is not a gum, but an astringent; a tanniferous substance called “**Kino**”. There are over 500 species of *Eucalyptus*. Medicinal plants have been used as a source of remedies since ancient times. Herbal sector has its roots in the very rich and diverse health care traditions of our country that include the codified systems like Ayurveda, Siddha, Unani, Tibetan, Homeopathy on one hand and the largely oral folk traditions on the other.

Antimicrobial properties:

In February 2016, researchers from Serbia found evidence supporting the antimicrobial action of eucalyptus and existing antibiotics could lead to the development of new treatment strategies for certain infections. They hope that this property could eventually reduce the need for antibiotics.

Colds and respiratory problems

Eucalyptus features in a range of preparations to relieve symptoms of the common cold, for example, cough lozenges and inhalants. Herbal remedies recommend using fresh leaves in a gargle to relieve a sore throat, sinusitis, and bronchitis.

Eucalyptus and dental care

The antibacterial and antimicrobial potential of eucalyptus has been harnessed for use in some mouthwash and dental preparations. In promoting dental health, eucalyptus appears to be active in fighting bacteria that cause tooth decay and periodontitis. The use of eucalyptus extract in chewing gum may promote periodontal health, according to a study published in the *Journal of Periodontology*.

Fungal infections and wounds

The University of Maryland Medical (UMM) Centre describes how traditional Aboriginal medicines used eucalyptus to treat fungal infections and skin wounds.

Insect repellent

Eucalyptus is an effective insect repellent and insecticide. In 1948, the United States officially registered eucalyptus oil as an insecticide and miticide, for killing mites and ticks. Oil of lemon eucalyptus is recommended by some as an insect repellent; it is effective at keeping mosquitoes away.

Pain relief

Eucalyptus extract may act as a pain reliever, and research indicates that the oil may have analgesic properties. In a study published in the *American Journal of Physical Medicine and Rehabilitation*, scientists applied Eucalyptus mint on the anterior forearm skin of 10 people.

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BEAT THE HEAT WITH GREWIA ASIATICA L.

Shirin A. Qureshi



Grewiaasiatica L. commonly known as “Falsa” belonging to Family Tiliaceae is a wonder fruit. Also known as Parushaka in Sanskrit ⁽¹⁾. It is used in Ayurveda since the times of Sushruta and Charaka. *Grewiaasiatica* L. is an exotic bush plant considered horticulturally as a small fruit crop but also used as a folk medicine. The ripe Falsa fruits (Fig. above) are consumed fresh, in desserts, or processed into refreshing fruit and soft drinks enjoyed during hot summer months in India. However, Falsa fruit has a short shelf life and is considered suitable only for local marketing. ⁽²⁾It is extensively cultivated for its sweet and sour acidic fruits. The sherbet or squash is prepared from the fruit pulp by mixing it with sugar and used as an astringent, stomachic and cooling agent. The root is used by Santhal tribals for rheumatism. The stem bark is said to be used in refining sugar, for making ropes and its infusion is used as a demulscent. The leaves are used as an application to pustular eruptions. ⁽³⁾

Falsa fruit uses: **Unripe Falsa fruit** – is astringent and sour in taste, hot in potency, light to digest and increases Pitta Dosha and pacifies Vata. **Ripe Falsa fruit** is Sweet and coolant. Bruhmana – nourishing, improves weight, Hrudya – acts as cardiac tonic, congenial for heart Ruchiprada – improves taste, relieves anorexia, Shophahara – relieves swelling, edema, anti inflammatory. Indicated in: Daha – burning sensation, as in gastritis, neuropathy, burning sensation in eyes etc, Asra – blood disorders such as abscess, skin disorders, bleeding disorders such as menorrhagia, nasal bleeding etc., Jwara – fever, Kshaya – depletion of body tissues, weight loss, tuberculosis. This fruit is used to make juice – Panaka along with dates, raisins, jujube fruit etc. Ripe fruits are said to balance Vata and Pitta Dosha. It is advisable to drink fruit juice 10-20 ml once or twice a day ⁽¹⁾.

References:

- 1) <http://easyayurveda.com/2015/06/04/falsa-fruit-grewia-asiatica/>
- 2) <https://hort.purdue.edu/newcrop/proceedings1999/v4-348.html>
- 3) https://en.wikipedia.org/wiki/Grewia_asiatica

ANDROGRAPHIS PANICULATA WITH ANTI-HIV ACTIVITY**Rikin Patel**

Human immunodeficiency virus (HIV), the causative agent for acquired immunodeficiency syndrome (AIDS) belongs to family of *Retroviridae* and subfamily of *lentiviruses*. AIDS is characterized by abnormal host defence mechanism that influence on infections with devious organisms or the occurrence of B cell lymphoma or Kaposi's sarcoma with reflective decrease in the count of CD4+T cells. AIDS appeared in various areas of the Terrain during 20th century, when the immune systems as well as other systems of humans were already saturated with attack of a great variety of stressor agents. Thus, the immune system is devastated & collapsed. As an estimate, 70 million people, worldwide were infected with HIV since 1980, after it was recognized as an emerging disease. HIV belongs to a special class of viruses called retrovirus. The average virus presumed responsible for AIDS, is about 0.000031 inches (120 Å) long and has an RNA core. The ribonucleoprotein particle is encapsulated by a capsid made up of a capsid protein (CA) and p24. The capsid contains other viral proteins such as integrase and reverse transcriptase^[1].

The most active approach is the highly active antiretroviral therapy (HAART) containing the combined use of drugs having different mechanisms of action. However, complete eradication of HIV from the body does not occur by HAART, which also cause long term toxicity and eventually drug resistant HIV emerges. Thus, there is a need to search for new alternatives, which are equally efficient and less expensive as compared to the treatments available^[2]. Natural products are good sources for the effective discovery of anti-HIV agents with decreased toxicity. Natural products having potent anti-HIV activities isolated mainly from medicinally important plants. *Andrographispaniculata* (*Acanthaceae*) also called as Charayetah, Kalmegh. This plant generally found in the plains region of India from Himachal Pradesh to Assam, Mizoram, West Bengal and all over South India. Whole plant extract is reported to possess hepatoprotective, antimalarial, antimicrobial, immunostimulant, antioxidant, anti-inflammatory and anti-HIV activity^[3]. *A. paniculate*'s aqueous leaf extract inhibited HIV1 by inducing cytopathogenicity in MT 4+ cells *in vitro* and *in vivo* assay model, by inhibiting HIV protease and reverse transcriptase^[4]. A phase I dose rising clinical trial of andrographolide from *A. paniculata* was conducted in 13 HIV positive patients. Dose routine was 5 mg/kg for 3 weeks to 10 mg/kg for 3 weeks and 20 mg/kg for final 3 weeks. A significant rise in the mean of CD 4+ lymphocyte levels in HIV positive patients occurred after 10 mg/kg dose. Andrographolide has been proposed to inhibit HIV induced cell cycle dysregulation leading to a rise in CD 4+ lymphocyte levels in HIV infected patients. The usage of herbal remedies is measured significant against AIDS/HIV and several plant species and families possess anti-HIV phytoconstituent that could be established into novel drug to treat AIDS/HIV^[5].

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BOESENBERGI ROTUNDAAS HERBAL CURE FOR DENGUE**Shetty Shilpa Shankar**

Dengue fever was first referred as water poison which associate with flying insects in a Chinese medical encyclopedia in 992 from the Jin Dynasty (265-420 AD). Dengue is also known as break-bone fever or dandy fever, which is an infectious disease transmitted by mosquitoes. DENV is a single stranded RNA positive-strand virus of the family *Flaviviridae*, genus *Flavivirus*. Dengue infections are caused by four closely related viruses named DENV-1, DENV-2, DENV-3, and DENV-4. These four viruses are called serotypes because each has the different interactions with the antibodies in human blood serum. The genome codes ten proteins. Three of the proteins are structural proteins that form the coat of the virus and send the RNA to target cells and seven of them are non-structural proteins that manage the production of new viruses once the virus gets inside the cell ^[1]. Plants have been traditionally used to cure several human diseases. *Boesenbergia rotunda* commonly known as fingerroot belonging to *Zingiberaceae* family. It is also known as *Curcuma rotunda*, *Gastrochilus rotundus* and *Boesenbergiapandurata*. *B. rotunda* is a common edible component in many Asian countries such as Malaysia, Thailand, Indonesia, India, and China ^[2]. It is usually cultivated at small home ranches and used as a condiment in food such as curry and soup due to its aromatic flavour. Almost, a hundred of compounds were isolated and explained, ranging from the flavonoid derivatives, chalcone derivatives, esters, kawains, terpenes and terpenoids. In the form of paste from root, it is used ^[3]. The uses of *B. rotunda* from several literature reviews are anti-allergic, antibacterial, anti-*Helicobacter pylori*, anti-leptospirosis, anticancer, anti-inflammatory, antioxidant, antiulcer, and anti-dengue viral, and anti-herpes viral activities and wound healing. The activity of some compounds extracted from *B. rotunda* for the inhibition of dengue virus protease has been tested on DENV-2. The cyclohexenyl chalcone derivatives of *B. rotunda*, 4-hydroxy-panduratin A and panduratin A showed good inhibitory activities towards DENV-2 NS3 protease with K_i values of 21 μM and 25 μM , respectively. The small value of K_i shows the potential of 4-hydroxy-panduratin A to inhibit DENV-2 NS3 protease in *in vitro* ^[4]. Flavones like pinostrobin, pinocembrin and alpinetin and their chalcones such as pinostrobin chalcone, pinocembrin chalcone and cardamonin were analyzed to bind at the active site by the rigid and automated flexible docking methods by showing good correlation between the predicted and experimental binding affinity ^[5].

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MAGNIFICENCE OF THE MEDICINAL PLANT MURRAYAKOENIGII L.

Pujan Nainesh Pandya

Plants, since ages have proven to be an exemplary source of effective medicine. In Personal kitchen gardens the organically grown curry leaves/sweet-neem leaves are the most common and obligatory ones. Curry Leaves are a mandatory ingredient for Indian kitchen as a special herb with an exclusive aroma and special medicinal values. *Murrayakoenigii* L. is the scientific name for the plant commonly known as sweet neem. It belongs to the Rutaceae family and is a source of many bioactive molecules which makes it effective in treatment of various ailments. In Ancient medicinal systems including Siddha, Ayurveda and Unani, the plant *Murrayakoenigii*L., has a broad range of therapeutic applications. Leaves and the barks can be also used in its dry form which makes it convenient for storage.

Ethnobotanical studies reveals that the branches of *Murrayakoenigii* L. commonly known as datunis useful for stronger gums and teeth. Its leaves, roots and bark are important for the stomach related ailments and are found to be carminative as well. It is also found that the plant has anti-anemic, anti-helminthic properties and is also used as a cure for inflammation, itching, body aches, kidney pain, vomiting and blood related disorders. A fine paste made from the crushed leaves is applied externally to cure skin ailments, to relieve skin burns and to treat the poisonous animal bites. The cream formulation prepared from the essential oil of curry leaves was found to possess sun protection factor. This plant has been known to possess varied activities like cytotoxic, anti-oxidative, antimicrobial, antibacterial, anti-ulcer, anti-fungal and cholesterol reducing activities as well. It is also reported that a combination of anti-cholinesterase and the cholesterol lowering effect exhibited by the leaves extract might be the main factor responsible in aiding memory improvement. All the three carbazole alkaloids present in the plant namely murrayanol, mahanine and mahanimbine were also found to be mosquitocidal and also exhibited topoisomerase I and II inhibitory activities.

Studies also reveal the anti-diabetic effects of the *Murrayakoenigii*L. extracts. Its usefulness in Diabetes management along with other activities would further prove to be a boon for the huge mass of people on the globe.

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FUNGAL REMEDIES FOR VARIOUS DISEASES: AN OVERVIEW

Suhani Girish Parekh

Most of us have read the problems caused by fungi and their implication on human health. But these are amazing life forms that are useful in many ways. Many fungal species have long been used traditionally for medicinal purposes. Chemicals derived as a part of life process of one organism that can be used to kill or stop the growth of other organisms are called antibiotics. Fungal metabolites are excellent source of antibiotics. Here are some examples of fungal metabolites being used to cure various diseases. Penicillin is a metabolite of fungus *Penicillium notatum* which was discovered by Alexander Fleming. It is an antibiotic which kills various bacteria like *Staphylococcus sps.* that causes various human diseases. Statins are other economically important product derived from fungi *Aspergillus terreus* and *Aspergillus griseus* which has the effect of reducing blockages of arteries, reducing the chance of heart attack, strokes and Diabetes. Another fungal metabolite of medicinal significance is Cyclosporin A which is used widely during and after bone marrow and organ transplant in humans. It is derived from *Trichospermapolysporum* and *Cylindrocarpum lucidum*. It helps in the suppression of proliferation of T cells hence leading to invasion and activation of foreign bodies as a result of which transplant tissues that are foreign bodies does not get rejected. Cephalosporin is obtained from *Cephalosporium acremonium* which kills bacteria specifically gram positive that causes various diseases. It is an alternative to penicillin resistant strains. Fusidic acid is obtained from *Fusidium coccineum*. It helps in curing skin infections like impetigo, infected cuts and grazes and infected dermatitis. *Claviceps purpurea* causes a disease called ergot. It produces alkaloids like ergonovine which is used to hasten labor and prevent postpartum bleeding, ergotamine which is a vasoconstrictor i.e. it constricts the blood vessel and hence the blood flow. This aspect is widely used in Migraine. It is also a dopamine agonist which means it increases the effect of dopamine which is a neurotransmitter in the brain. Many mushrooms have also been studied for their medicinal uses. *Ganoderma lucidum* and *Ganoderma Tsugae* are well known for their medicinal properties. It contains steroids, lactones, alkaloids, polysaccharides and triterpenes. It is used for treatment of hepatopathy, Arthritis, nephritis, Hypertension, insomnia and gastric ulcers. It also has been reported to have anti cancer properties. *Lentinusedodes* named commonly as Shiitak mushroom is medicinally important. Polysaccharides like lentinan, eritadenine and lectins have been isolated from it. It is used medicinally for diseases involving depressed immune function (including AIDS), cancer, environmental allergies, fungal infection, frequent flu and colds, bronchial inflammation, heart disease, hyperlipidemia (including high blood cholesterol), hypertension, infectious disease, diabetes, hepatitis and regulating urinary inconsistencies. Antifungal griseofulvin is used against fungal infections of skin, nails and hair. It is a mycotoxin isolated from various species of *Penicillium* including *P. griseofulvum* and *P. patulum*. Thus it is concluded that there are vast many species of fungi having medicinal importance. And it should be noted that these are only few uses of fungi in drugs that have been mentioned. Still many fungal species are unexplored of their medicinal properties which opens the door of research in this field.

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LESSONS FROM NATURE

Dr. Archana Mankad



There comes a stage in our lives when we are ready to exchange all our wealth for all our health because if we are healthy, we would be happy and if we are happy, we can make the world around us happy. Happiness is a state of mind but many a times our happiness is eclipsed with pain and suffering.

We all get our share of pain and suffering, be it illness, separation from or death of a loved one. Those we love don't go away, they walk beside us every day. Unseen, unheard, but always near, still loved, still missed and very dear. Our lives change and sometimes these trying times tear us apart. But Healing comes from taking responsibility: to realise that it is we and no one else that creates our thoughts, our feelings and our actions.

Nature displays the magic of healing powers in diverse ways. Not only can the sun and the water heal but also plants have amazing healing properties. Plants get damaged not only by challenges of natural disasters but also by us, but they regenerate and not only heal themselves but many plants provide us the muchneeded therapeutic compounds and heal us.

Like the plants, we can help our near and dear ones when they need us the most and provide a healing touch in their sufferings by just being with them in moments when they need us the most.

Because time heals everything and no pain is permanent.



GLIMPSES OF ACTIVITIES OF GUJARAT UNIVERSITY BOTANICAL SOCIETY (GUBS)

The Gujarat University Botanical Society celebrated its annual cultural festival “*JASHN-2K16*” and the new year in the form of purposeful theme days. Each day witnessed participation of the members in various competitions coordinated by different student groups. Blue and Pink Day -26th December, Group Cooking Day -27th December, Competition-2016, Mehndi competition, Best from Waste, Cricket. On 29th December celebrated talent day and Sports day on 30th December. Casual and ethnic wear day-31st December.



Rangoli



Best from waste



Sports day



Casual and ethnic wear day



Cricket

Creative race

On 6th January, 2017, the students of Gujarat University Botanical Society had visited **FLOWER SHOW-2017** At the river front, Ahmedabad.



Field visit at Jambughoda wild life sanctuary

Gujarat University Botanical Society (GUBS) had organized a Botanical Excursion to Jambughoda Wildlife Sanctuary on Thursday, 12th January 2017. About 75 students from Botany, Climate Change and Bioinformatics actively participated in the study tour. PG students, PG diploma students and research scholars of all three departments alongwith faculty members took part. The main aim of Study Tour is to aid students to acquire basic knowledge of functioning of forest. Study tour emphasizes field based learning and enables the students to explore the forest. Gujarat is unique and important in terms of its biological diversity. A total of 22 sanctuaries and 4 national parks have been established to protect various ecosystems. Jambughoda sanctuary is one of the much protected areas located in Halol and Jambughoda taluka of Panchmahals district and Sankheda taluka of Vadodara district. It is habitat of important wild animals involving carnivores and herbivores. The group left Ahmedabad by 6:00 am in morning and reached Jambughoda by 11:00 am. They were welcomed by the people of Bhat ecotourism in Jambughoda sanctuary. This was an opportunity for the students to understand forest and habitat. About 350 species of plants have been explained to the Student had enjoyed delicious lunch at Bhat tourism. Staff at tourism centre was very friendly and co-operative

After lunch program:

After lunch student had visited to Jhand hanuman for study of algae and study of riparian flora.

Evening is spent Jhand hanuman was a wonderful one and the students one hour free time to explore the nature. The purpose of the study tour is to expose our students to learn habitat, ecology, community structure and community composition in the forest. Students also got benefited in terms of learning about field taxonomy i.e. collection, noting down character in field, learning about different habitat in the field as well as different ecosystem.

The tour was very educative. Mr. Hardik guided the group. Prof. Nainesh Modi explained about environmental challenges in a densely populated urban context, efforts to implement reforms to better meet these challenges in the field. Mr. Alpesh Ahir (Research Scholar) was there to explain about birds and palatable plant species in sanctuary. Mr. Rupesh Maurya had explained about medicinal plants and their uses.

Photo plates



MinaxiLalit Exam 2017

It was indeed a great moment to witness the enthusiasm that filled the air during the Gujarat Science Congress at PDP, Gandhinagar. Gujarat Science Academy has received generous donations from Hiran Charitable trust to conduct the MinaxiLalit Science Award Test every year in all science subjects. This year onwards there was an addition of Bioinformatics, Forensic Science and Geology at both UG and PG levels so the total number of subjects for which the test was organized was thirteen. This year MinaxiLalit Award for the Best Essay was initiated. Ms. Swati Jayswal from Botany Sem IV won the second prize in Botany. Ms. Palak Sapra from Botany Sem IV won the second prize in INSA Nobel Prize Presentations for Physiology and medicine in the UG/PG category.

The staff and students of Department of Botany, Bioinformatics and Climate change impacts management participated and coordinated the celebration of **International Women's Day** on Wednesday, 8th March 2017 at the School of Languages, Gujarat University. The programme included a cultural programme, Quiz Competition, Audience participation and Prize distribution. The cultural programme coordinated by the Department of Botany, Bioinformatics and Climate change impacts management began with a prayer dance. Then the students presented a group song on the theme HAPPINESS- a musical portrayal of

definition of happiness during childhood, youth and adulthood. This was followed by a skit on Swachata titled TAMARU SU JAI CHE a comic narrative of day to day happenings in most households with a powerful message of consequences of swachata. A fashion show based on the theme AME GUJARATI –evolving through times and yet retaining the vibrancy of colours and traditions, blending the ethnic and the trendy, the costumes that are our identity and pride were showcased in a very creative and stylish manner with music of Garvi Gujarat. A garba in its full gusto was presented with a visual delight of vibrant colours and exciting rhythms towards the end of the cultural programme. The Quiz competition coordinated by the staff and students of Department of Computer Science involved questions about identifying powerful women on the basis of clues. Anyone from the audience could answer and win a prize. The audience enjoyed it a lot. Then audience participated in the programme by voluntary poetry recital / singing songs etc. The Chief Guest Ms. Raksha Bharadiya, Vice Chancellor and President of the function, Dr. Himanshu Pandya were the dignitaries on the dais. Speaking on the occasion Ms. Bharadiya gave her unique perception and shared her opinion on the significance of celebrating women's day. Dr. Himanshu Pandya emphasized on the importance of respecting each and every one as a human. He highlighted the role of women in our lives and upheld their contribution in all walks of life. The Judges for various competitions during PRATIBHA 2017 were felicitated and the judges were requested to further give away the prizes of the respective categories. Dr. Archana Mankad, Member Secretary, WDC-ICC presented the formal vote of thanks wherein in addition to thanking the dignitaries and participants, she also thanked all the powerful women in our lives who helped us in taking care of our families and our homes while we attended to our duties her, *our mummy, sasuma, rasoianekaamkarvawalaben*. The fun filled day ended with all enjoying sumptuous lunch.



Prayer Dance



Skit



Fashion Show



Garba



Group Song



Lighting the lamp



Welcoming Dr. Himanshu Pandya



Welcoming Ms. Raksha Bharadiya



Dr .Rajshri Bhatt - Welcoming the dignitaries



Dr. Savita Gandhi – About WDC



Prize distribution



Prize distribution



Prize distribution



Prize distribution



Prize distribution



Ms. Raksha Bharadiya addressing the gathering



Dr. Himanshu Pandya : Presidential Address



Memorable Moment

The members of GUBS participated in the annual function of GUBS 2016-17 on April 7th, 2017. The programme included prize distribution to winners in various curricular, co-curricular and extracurricular activities during the academic year 2016-17. Prof. Himanshu Pandya, Honourable Vice Chancellor of Gujarat University was the distinguished chief guest for the function. Speaking on the occasion, Dr. Pandya recalled his student days and his own achievements in GUBS events. Nostalgia filled the air as a very creative video showcased the events during the year.



Dr. Archna Mankad addressing the audience



Chirag Patel welcoming to Dr. Himanshu Pandya





Dr. Archana Mankad announced the Prestigious Golden Petal Awards of excellence, achievement, outstanding achievement, student of the year, Researcher of the year and Pride of the department.

GOLDEN PETAL AWARDS 2017:**GOLDEN PETAL AWARD FOR ACADEMIC ACHIEVEMENT** to: VIBHA BHINGRADIYA, CHIRAG PATEL, ANIMA TIRKEY, MAULIK PATEL, NEHA JHA, DRUSHTI BHATT, HEMANGINI PATEL, SWETA TRIPATHI, ALPESH AHIR, SANJUKTA RAJHANS, MITI PANCHOLI, POOJA PRAJAPATI, KAJAL SHAH, VISHWAJA THAKER, PRERANA TIWARI; **GOLDEN PETAL AWARD FOR EXCELLENCE IN MANAGEMENT** to: VINAL PATEL, DHRUV PANDYA; **GOLDEN PETAL AWARD FOR EXCELLENCE IN MENTORING** to ANCY FERNANDES, RUPESH MAURYA; **GOLDEN PETAL AWARD FOR EXCELLENCE IN ENTERTAINMENT** to SANDIP VADODARIYA ; **GOLDEN PETAL AWARD FOR EXCELLENCE IN CREATIVITY** to IMANUEL FRANCIS COLACO; **GOLDEN PETAL AWARD FOR OUTSTANDING ACHIEVEMENT** to DRUSHTI BHATT, NEHA JHA, HARSHIDA GADHAVI, PALAK SAPRA, SWATI JAYSWAL; **GOLDEN PETAL AWARD FOR STUDENT OF THE YEAR** to DHRUV PANDYA; **GOLDEN PETAL AWARD FOR RESEARCHER**

OF THE YEAR to CHIRAG PATEL; GOLDEN PETAL AWARD FOR PRIDE OF THE DEPARTMENT to DR. HIMANSHU PANDYA. The members wished farewell to the outgoing sem iv students and enjoyed hot spicy lunch.





Dr. Himanshu Pandya giving the GOLDEN PETAL AWARDS to the students



GOLDEN PETAL AWARD FOR PRIDE OF THE DEPARTMENT to DR. HIMANSHU PANDYA.



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