SURVEY OF JNANADWEEP, VPM'S THANE COLLEGE CAMPUS FOR PROMINENT PLANTS USED IN TRADITIONAL UNANI SYSTEM OF MEDICINE- I

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Abstract: The popularity of alternative medicine is rising and traditional alternative systems of medicine are gaining in followership in current times.The Unani system of medicine is based on natural healing, involving balance and harmony of physical, mental and spiritual realms. Plants form an important component of the Unani pharmacopoeia. The area of study viz. *Jnanadweep*, popular as Vidya Prasarak Mandal's Thane college campus is an island campus situated in the Chendani area of Thane city in Maharashtra, India, alongside the Thane creek. The campus is laden with plants, many of which have importance as contributors in traditional systems of healing. The rich assemblage of flora on the campus coupled by the general lack of information and knowledge on their attributes and applications as plants used in the traditional systems of healing and the Unani system of medicine inspired the current investigation. This communication is part of an ongoing study for documenting plants of medicinal value found on the Jnanadweep educational campus.

Keywords: Unani, Jnanadweep, Medicinal plants,

INTRODUCTION:

Ayurveda, Unani, Siddha, Sowa-rigpa, Homoeopathy, Yoga and Naturopathy are well recognized major traditional alternative systems of medicine; each system having its own set of following. The popularity of alternative medicine is rising and traditional alternative systems of medicine are gaining in followership in current times. The Yunani or Unani system of medicine is one of the traditional systems of medicine under the Ministry of AYUSH. This system of healing is believed to have originated much later to Ayurveda; in the middle-east and made its way through Greece, Persia and Arabia into India, scholars from each area having contributed to the pool of knowledge. The system is based on natural healing, involving balance and harmony of physical, mental as well as spiritual realms and like all natural systems of healing, is considered as eco-friendly and less intrusive by its practitioners. There are training facilities for practitioners of the Unani system or Hakims in India and the Central Council for Research in Unani Medicine promotes research activities in this field. Plants form an important component of the Unani pharmacopoeia. The contribution and importance of plants in healing is largely not known to the young techno-savvy generation, so this effort is made to acquaint them with healing

properties of plants, made use of in traditional systems of medicine, and the Unani system in particular.

The area of study viz. *Jnanadweep*, popular as Vidya Prasarak Mandal's Thane college campus is a 13.5 acre island campus situated in the Chendani koliwada area of Thane city, alongside the Thane creek. The educational campus is very near to the Thane railway station (Central Railway) on the outskirts of Mumbai, the commercial capital of India, being approximately at a distance of 32 km from Mumbai. Apart from housing premier educational institutes in the region, the world class campus, partially surrounded by mangroves, supports a huge biodiversity of micro and macro flora and associated fauna, both natural as well as introduced and cultivated. Cultivated plants have been introduced after reclaiming the creek island from its original partly submerged form in late 1960s to 1990s with land-fill of around 7 feet of soil over and around the original marshy island. Despite widespread developmental activities and widespread urbanization in the past 5 decades, the campus is still partially surrounded by creek and mangroves; however effects of ever increasing load of human population and pollution are evident in the form of overall degradation of the original natural environment of the region. Today the avenues in the campus and the meticulously laid out *jnanapath*, the 'path of knowledge' viz. the continuous well laid out trail track along the perimeter of the campus are lined with trees, shrubs and climbers. The rich assemblage of flora on the campus coupled by the general lack of information and knowledge on their attributes and applications as plants used in the traditional Unani system of medicine inspired the current investigation.

MATERIALS AND METHODS:

The study was carried out over a period of almost two years from July 2020 to May 2022 and was spread over all the seasons. The plants were identified in the field and in the department of Botany, B. N. Bandodkar College of Science, Thane, using standard literature (Cooke, 1967; Kirtikar and Basu, 2006). Their Unani medicinal properties were retrieved from various sources cited in the references. pH of soil was determined with the help of Labindia PICO pH meter.

RESULTS AND DISCUSSION:

The landfill of around 7 feet height, done in 1960 to 1990, over the original partially submerged creek island; to create the present '*Jnanadweepa*' (island of knowledge) apparently resulted in favourable environment for various other groups of plants in

addition to the original mangrove vegetation which partly surrounds the island educational campus. The characteristics of soil encountered at the area of study are presented in Table 1. pH of soil in the campus was compared with that of the immediate natural mangrove surroundings. The pH of soil in the area of study ranged between 7.3-7.6 as compared with pH of the immediate surrounding creek soil which ranged from 8.5 upwards. Table 2 depicts the prominent plants with medicinal values according to the Unani system of medicine, which are present on the campus viz., Vidya Prasarak Mandal's Jnanadweep, College campus.

Multifarous pharmacological activities of Neem (*Azadirachta indica* A. Juss), namely, abortive action, analgesic,anti-aging, anti-arthritic, antibacterial, anti-catarrhal, anti-diabetic, anti-diarrheal, anti fertility, anti-flatulent, anti-fungal, anti-hydrotic, anti-inflammatory, antioxidant, antipyretic, antiseptic, antispasmodic, anti-tumour, antitussive, antiulcer, blood purifier, cicatrizant, concoctive, demulcent, digestive, emmanogogue, eye tonic, hypnotic, hypotensive, immuno-modulation, stimulant, thirst quencher, tonic, tonic for teeth and gums, uses in treatment of asthma, jaundice, burns, wounds and skin diseases are reported by Quraishi *et al*., 2018.

The medicinal properties of *Psidium guajava* L.,namely, ameliorative, analgesic/ antipyretic, anti-bacterial, anticancer, anti-epileptic, antihypertensive/ antidiarrheal, anticestodal,anti-diabetic, anti-inflammatory, antimicrobial, antimutagenic, antioxidant, antiplaque, anti-proliferative, antispasmodic, antitumour, anti-ulcer, cardioprotective, contraceptive, gastroprotective, hepatoprotective, hypocholesterolemic, hypoglycemic/ hypotensive, microbicidal, nephroprotective, spasmolytic, trypanocidal and wound-healinghave been well documented (Joseph and Priya, 2011; Kumar and Singh, 2020).

Ahmad *et al.,* 2019 reviewed the medicinal properties of *Syzygium cumini*,namely, analgesic, anthelmintic, anti-allergic, anti-bacterial, anti-bilious, antidiabetic, antidiarrheal, antidote, antiedemic, antiseptic, anti-fungal, anti-inflammatory, antipyretic, antispasmodic, aphrodisiac, appetizer, astringent, blood-purifier, cardioprotective, carminative, digestive, diuretic, hepatotonic, stomachic, application in palpitation and sterility and as strengthener of gums and teeth as utilized in the Unani system.

Akhtar *et al*., (2021) reviewed the therapeutic benefits of *Lawsonia inermis* L., namely, as analgesic, abortifacient, antiarthritic, anti-asthmatic, antibacterial, anticancer, anti-fungal, antiinflammatory, anti-psoriatic, antipyretic, anti-ulcer, antiviral, aphrodisiac, astringent,

blood purifier, brain tonic, desiccant, diuretic, emmenogogue, expectorant, hepatoprotective, resolvent, memory enhancing and wound-healing properties as prescribed in the traditional Unani system for treatment of various disorders and also suggested innovations.

Khan (2017) listed the therapeutic properties of *Carica papaya* L. as antibacterial, anti diarrheal, antidote, anti emetic, anti-fertility, anthelmintic, anti-inflammatory, anti-nauseant, anti-phlegmatic, calorific, carminative, digestive, diuretic, emmenogogue, gastric tonic, laxative, purgative, resolvent, sedative and vermifuge which are used in Unani system of medicine to treat various disorders.

The therapeutic uses of *Rosa damascena* Mill. in traditional Unani medicine, namely, as analgesic, anti-aging, antibacterial, anti-depressant, antioxidant, anticonvulsant, antidiabetic, antihypertensive, anti-HIV, anti-inflammatory, anti-lipase, antispasmodic, antitussive, appetizer, aperients, aromatic, astringent, cardiotonic, cardiac stimulant, carminative, coolant, expectorant, hypnotic, laxative and use in dementia and ophthalmic disorders are well studied (Ansari *et al*.,2017).

The benefits of *Adhatoda vasica* Nees as utilized in the traditional Unani system of medicine, namely, antibiotic, antioxidant, antipyretic, antispasmodic, antitubercular, antiviral, cardiovascular-protectant, expectorant, hepatoprotective and hypoglycemic are studied and documented (Khan *et al*., 2020). The plant is known to have a wide range of medicinal activity making it potent against a wide range of ailments.

The medicinal properties of *Ocimum sanctum* L., viz, analgesic, anti-anxiety, anti-arthritic, anti-asthmatic, antibacterial, anti-cataract, anti-convulsant, anti-coagulant, anti-depressant, anti-diabetic, anti-inflammatory, antioxidant, anti-hyperlipidaemia, anti-periodic, anti-pyretic, antiseptic, anti-stress, antitussive, anti-ulcer, aromatic, demulcent, diuretic, emmenogogue, exhilarant, expectorant, febrifuge, hepato-protective, immuno-modulator, memory enhancer, neuro-protective, stimulant and tonic, as are used to treat a wide variety of disordersare reported by Khan (2016).

Amla (*Phyllanthus emblica* L syn. *Emblica officinalis* Gaertn) has been attbuted with several properties used in the traditional Unani system of medicine such as anti-inflammatory, antitussive, antiulcer, immunomodulatory and gastroprotective among several others (Annjum and Nafees, 2020). Its potent activity makes its applicability effective as a single drug as well as in combination with other drugs.

The pharmacological properties of *Riccinus communis* L (Bed anjeer) viz., abortificient, absorbant, analgesic, anthelmintic, aphrodisiac, appetizer, carminative, contraceptive, detergent, emetic, emmenogogue, expallent, lactogogue,laxative, purgative, resolvent andtonic; making the plant useful in an array of disorders,are reported by Shamim (2019).

Asparagus racemosus Willd. Is endowed with medicinal properties, namely, adaptogenic, antacid, anti-depressant, anti-diarrheal, antimicrobial, antioxidant, antiseptic, antispasmodic, anti-tumour, anti-ulcer, aphrodisiac, cardiac tonic, carminative, cooling, diuretic, demulcent, emollient, galactogogue, immuno-modulator, laxative, nervine tonic, nutritive, rejuvenative and stomachic and is useful in treating a variety of disorders inclusive of those related to the female reproductive system (Shameem and Majeedi, 2020).

Khan *et al*., (2018) studied the diuretic effect of *Cymbopogon jwarancusa*on animal model.The therapeutic effects of *C. citratus*, namely, analgesic, anticancer, antidiabetic, antifungal,anti-inflammatory, anti-malarial, antimicrobial, antioxidant, antipyretic, antiseptic, antispasmodic, anxiolytic, cardiovascular-protectant, carminative, cytoprotectant, depurative, digestive, diuretic, emetic, emmenogogue, expectorant, hypotensive, sedative, stomachic and wound healing properties are reported by Kassahun *et al*., (2020).

Several medicinally important plants are found on Jnanadweep, educational campus, twelve of which are featured in the current investigation. This communication is part of an ongoing study for documenting plants of medicinal value found on the Jnanadweep educational campus.

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REFERENCES:

Ahmad, N. Nawab, M. and Kazmi,.M.H. 2019.Medicinal Potential of Jamun (*Syzygium cumini* Linn):A Review.*Journal of Drug Delivery & Therapeutics,* **9**(5):175-180.

Akhtar, J., Bashir, F. and Bi, S. 2021.Scientific Basis for the Innovative Uses of Henna(*Lawsonia inermis*L.) mentioned byUnani Scholars in different ailments. *Journal of Complementary and Alternative Medical Research,* **14**(1): 1-21.

Anjum, A. and Nafees, H. 2020. A Comprehensive Review on a Unani Dynamic Drug: Amla (Emblica officinalis). *Asian Plant Research Journal*, **5**(4): 1-6.https://doi.org/10.9734/aprj/2020/v5i43011

Ansari, S., Zeenat, F., Ahmad, W. and Ahmad, I. 2017.Therapeutics and pharmacology of Gul-e-Surkh (*Rosa damascene* Mill): An important Unani drug.*International Journal of Advances in Pharmacy Medicine and Bioallied Sciences***5**(3):195-205.

Cooke, T. 1967. The Flora of the Presidency of Bombay, Vol. I-III (2nd Rep.). Botanical Survey of India, Calcutta.

Joseph, B. and Priya, M.R. 2011. Review on nutritional, medicinal and pharmacological properties of guava (*Psidium guajava* Linn.). *International Journal of Pharma and Bio Sciences,* **2**(1): 53-69.

Kassahun, T., Girma, B., Joshi, R.K., Sisay, B., Tesfaye, K., Taye, S., Tesema, S., Abera, T. and Teka, F.2020. Ethnobotany, traditional use, phytochemistry and pharmacology of Cymbopogon citrates: Review article.*International Journal of Herbal Medicine,* **8**(4): 80-87.

Khan, M.A. 2016. Raihan/Tulsi. National Health Portal, India.https://www.nhp.gov.in/Raihan-Tulsi_mtl

Khan,M.A. 2017. Papita (*Carica papaya* Linn). National Health Portal, India.https://www.nhp.gov.in/papita-carica-papaya-linn_mtl

Khan, R., Shamsi, Y. and Nikhat, S. 2020. Medicinal benefits of *Adhatoda vasica* Nees.-in Unani and contemporary medicine. *Cellmed,* **10**(2) doi: http://dx.doi.org/10.5667/CellMed.2020.0013

Khan, S.J., Afroz, S. and Khan, R.A. 2018. Diuretic Effect of *Cymbopogon jwarancusa* after Single and Multiple Doses in Rats. *Pharmacology & Pharmacy*, **9**, 250-256. doi: 10.4236/pp.2018.97019.

Kirtikar, K.R. and Basu, B.D. 2006. Indian Medicinal Plants, Vol. I-IV. International Book Distributors, Dehradun, India.

Kumar, S. and Singh, B. 2020. Wonderful effect of Amrood (*Psidium guajava* Linn.) drug of Unani system of medicine.*International Journal of Science and Research,* **9**(5):1434-1442.

Quraishi, H.A., Islam, N., Iqbal, A., Bhat, S.A., Ahmed, J., Ashraf, S.S. and Khan, Q.A. 2018. Therapeutical and medicinal properties of Neem (*Azadirachta indica*) in context of Unani system of medicine: A review study.*Journal of Drug Delivery & Therapeutics,* **8**(6-s):394-399.

Shameem, I. and Majeedi, S.F. 2020. A review on potential properties and therapeutic application of Asparagus racemosus Wild. *World Journal of Pharmaceutical Research,* **9**(7): 2532-2540.

Shamim. 2019. Bed Anjeer (*Ricinus communis* Linn.) pharmacological actions, therapeutic uses and Phytochemistry: A review.*The Pharma Innovation Journal,* **8**(2): 10-15.

Table 1: Characteristics of soil in and around VPM's Jnanadweep Thane College Campus

Location	pH	Remarks
Soil in the campus	7.3 - 7.6	Garden soil, well drained, well aerated; yellow-brown to reddish in colour, red garden soil at places
Soil immediately around the campus	8.5 and above	Mangrove soil, soft, muddy, sticky, water logged, poorly aerated; dark grey to black in colour; degradation of mangroves due to urbanization apparent at places

Table 2: Prominent plants with medicinal value, used in Unani system, present on Jnanadweepa, Thane college campus

Botanical Family	Plant	Name featured in Unani literature (Other Vernacular Names)	Habit	Parts of plant used
Meliaceae	*Azadirachta indica* A. Juss.	Neem (Limba, Margosa)	Medium size tree	Leaves, Roots, Root Bark, ,Stem Bark, Fruits, Seeds, Whole plant
Myrtaceae	*Psidium guajava* L.	Amrood, (Peru, Guava)	Small tree	Leaves, Fruits
	Syzygium cumini (L.) Skeels	Jamun (Jambhul, Black plum)	Large evergreen tree	Roots, Stem bark, Leaves, Flowers, Fruits, Seeds, Seed kernel
Lythraceae	*Lawsonia inermis* L.	Heena (Henna, Mehendi)	Shrub/ Small tree	Whole plant, Leaves
Caricaceae	*Carica papaya* L.	Papita (Papaya, Pawpaw)	Soft wooded short-lived tree	Roots, Fruits, Seeds
Rosaceae	*Rosa* sp. *Rosa damascena* Mill.	Gul-e-surkh (Gulab, Rose)	Shrub	Leaves, Flowers
Acanthaceae	*Adhatoda vasica* Nees	Adoosa, Arusa (Adulsa, Vasaka, Malabar Nut)	Shrub	Roots, Leaves, Flowers
Lamiaceae	*Ocimum sanctum* L.	Raihan, Rehan, Zeemraan (Tulsi, Holy basil)	Aromatic herb	Leaves, Seeds
Euphorbiaceae	*Phyllanthus emblica* L.	Amla (Emblic Myrobalan, Avla, Amalaki, Indian gooseberry)	Small to medium tree	Leaves, Flowers, Fruits, Seeds; fruits are most commonly used
	Riccinus communis L	Bed Anjeer, Arand (Erand, Castor)	Shrub to small tree	Leaves, Seeds, Roots, Oil
Asparagaceae	*Asparagus racemosus* Willd.	Satavar (Shatavari)	Climbing shrub	Roots, Leaves
Poaceae	*Cymbopogon* sp. *Cymbopogon jwarancusa* Schult.	Izkhir (Gavti chaha, Lemon grass)	Perennial grass	Roots, Leaves