

Biological Spectrum of the Flora of Beawar Tehsil, Ajmer, Rajasthan

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ABSTRACT: Almost all types of plant habits i.e. Grasses, Herbs, shrubs and trees are present in this area and classified as the 'scrub jungle'. On the basis of age all three types i.e. annual, biennial and perennial plants are present in this district. As Indian botanists have emphasized their attention for intensive exploration and compilation of plants resources of the country, this work will be helpful for above purpose for state as well as National flora. We found important trees are *Anogeis suspendula*, *Boswellia serrata*, *Prosopis cineraria*, *Acacia Senegal*, *Ziziphus jujuba*, *Acacia leucophloea* and *Dichrostachys cinerea*, *Cenchrus ciliaris*, *Dichanthium annulatus*, *Chloris barbata*, *Sorghum halepense* etc. are the important grasses of the area. Fabaceae was the most dominant family of the area followed by Poaceae and Asteraceae

KEYWORDS: biological spectrum, flora, plants, Beawar, fabaceae, poaceae, asteraceae, scrub jungle

I.INTRODUCTION

The most prolific vegetation seen in Beawar tehsil is Kejri or *Prosopis cineraria*. This is found majorly in arid zone. Its shape is bean like and is known as sangria. It is not only used as fodder but also consumed as vegetable. It is considered as a delicacy in Rajasthan. Another popular desert vegetable is ker. Variety of shrubs and akra (scientific name- *Calotropis procera*) are also found in abundance. Since this is desert vegetation of Beawar, in Rajasthan, the shrubs have a lot of thorns. Some prominent species are peepal, Dhak, ber, banyan and khajur. Also, species like bamboo, salar, dhavand jamun are found. Rare species of wild roses, ferns and orchids can also be seen here. Dry teak, Salar, Bamboo, Dhokra, Palash, [1,2] Khair, Babul, etc are also seen.

Survey study in east Beawar shows Modad, khair, dhavado, saledi, kadaya, timru, khakhara, bor, desi bavalia, bili, dudhi, golar, karanj, arjun sadad, jamun, behda etc. are some local names for common species found here. The common & scientific names for species found here are - Aam (*Magnifera Indica*), Imlı (*Tamarindicus indica*), Babul (*Acacia nilotica*), Banyan (*Ficus benghalensis*), Ber (*Zizyphus mauritania*), Dhak or Chila (flame of the forest), Jamun (*Syzygium cumini*), Kadam (*Autocephalus cadamba*), Khajur (*Phoenix sylvestris*), Khair (*Acacia catechu*), Karel (*Capparis decidua*), Khejda (*Prosopis specigera*), Kakerā (*Flacourtia indica*), Mohua (*Madhuca indica*), Neem (*Azadirachta indica*), etc.[3,4]

II.DISCUSSION

Different medicinal plants are also found in Beawar tehsil in Rajasthan. These are:-

Balanites aegyptiaca

Balanites aegyptiaca belongs to Zygophyllaceae family, has anthelmintic, insecticidal, antidiabetic, antimicrobial, antibacterial, antifungal, hepatoprotective, anticancerous, antiparasitic, anti-inflammatory, molluscicidal and antioxidant properties.

It is traditionally used in treatment of various diseases i.e. jaundice, intestinal worm infection, wounds, malaria, syphilis, epilepsy, dysentery, constipation, diarrhea, hemorrhoid, stomach aches, skin boils, leucoderma, malaria, wounds, colds, syphilis, liver and spleen disorders, asthma, snake bite and fever. The bark of the plant is useful in curing mental

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diseases, yellow fever, jaundice and syphilis and can also act as a fumigant to heal circumcision wounds. Fruit kernel has been found as a mild laxative, an antidote to arrow poison, and also acts as a vermifuge. Kernel oil helps in curing skin disease. The seeds are useful as ointments, to cure cough, colic pain and also have magicoreligious properties.[5,6]

Calligonum polygonoides

Calligonum polygonoides is a member of family Polygonaceae. It is a small leafless shrub, which has a reputation in folklore medicine as a stimulant and astringent. Leaves and stems are chewed to wash teeth and to treat gummosis while young shoots infusion is used as tonic. Root's paste is applied on the affected areas for the treatment of prickly heat and scabies. Decoction is used for the treatment of sore gums, typhoid. Flowers buds are effective in sun stroke. Flowers paste are also used for the treatment of asthma, eczema, cough and cold. It is reported that juice of the plant is applied in eyes to remove poisonous effect of *Calotropis procera*. *Calligonum polygonoides* possesses hypoglycemic, cytotoxic, antioxidant, antimicrobial, anti-cancer, antiulcer, anti-inflammatory, antifungal, and mosquitocidal activities.[7,8]

Citrullus colocynthis

This plant belongs to family Cucurbitaceae, commonly known as Chitrapala or Bitter apple. *Citrullus colocynthis* shows mild stomachic, bitter tonic, anthelmintic, anti-cancer, antioxidant, antimicrobial, antidiabetic, analgesic, antipyretic, anti-inflammatory, carminative, diuretic and anthelmintic property.

Citrullus colocynthis is used generally in the cure of various diseases such as leprosy, gut disorders, diabetes, constipation, asthma, indigestion, colic, rheumatism, hypertension, gastroenteritis, dysentery, bronchitis, jaundice, joint pain, cancer and mastitis.[16,17]

Commiphora wightii

Guggulu consists of oleo-gum resin obtained as an exudate from the tapping of stem and branches of *Commiphora wightii* (Arnott) Bhandari; Family, Burseraceae. The plant is commonly known as guggal, gugar, and Indian bdellium tree. It is a small, bushy tree with thorny branches and produces a yellowish gum resin (guggulu) in small ducts located throughout its bark. Guggulu possesses hypolipidemic, anti-inflammatory, anti-arthritis, antifertility, Anti-atherosclerotic, astringent, anti-septic, anti-inflammatory, analgesic, wound healing, anti-obesity, anti-spasmodic activity.[9,10]

In Indian traditional system of medicine, guggulu has been used for thousands of years in the treatment of arthritis, inflammation, stimulates libido, nervous diseases, bronchial congestion, cardiac and circulatory problems, weak digestion, wounds, abscess, foetid ear, fractures, gout, skin rashes, irregular menstruation, diarrhea, headache, mild nausea, liver toxicity, rheumatism, obesity, and disorders of lipids metabolism.

Cordia myxa

Cordia myxa belongs to family Boraginaceae, is also known as clammy-cherry, glueberry, Indian-cherry in English and Gondi in Hindi. Pharmacological studies revealed that *Cordia myxa* possessed analgesic, anti-inflammatory, immunomodulatory, antimicrobial, antiparasitic, insecticidal, cardiovascular, respiratory, gastrointestinal and protective effects. *Cordia myxa* was eaten to suppress cough and for the treatment of respiratory infections and a sore throat, as it has demulcent properties. The pulp was also applied as an emollient to mature abscesses, to calm rheumatic pain and as an anthelmintic. Fruit pulp is applied on ringworm. Leaves' paste applied to wounds and ulcers.[11,12]

Gymnema sylvestre

Gymnema sylvestre belongs to family Asclepiadaceae, is also known as 'gurmar' or 'sugar destroyer' (If the leaves of the plant are chewed, the sense of taste for sweet and bitter substances is suppressed). The bioactive compounds of plant have antidiabetic, atherosclerotic, antimicrobial, antiarthritic, antibiotic, hypolipidaemic, immunostimulatory, hepatoprotective, anti-hyperglycemic, antipyretic, diuretic, anti-inflammatory, wound healing and anticancer properties.[18,19]

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Gymnema sylvestre is a traditional medicinal plant, with reported use as a remedy for diabetes mellitus, stomachic and diuretic problems. Its use has been indicated in adenopathy, cough, asthma, alexipharmic, anthelmintic, astringent, biliousness, bronchosis, cardiopathy, conjunctivosis, cornea, dysuria,[20,21] digestive, emetic, expectorant, fever, furunculosis, glycosuria, hemorrhoid, hepatosplenomegaly, inflammation, jaundice, leukoderma, rheumatismopacities, ophthalmia, and worm. The roots of *Gymnema sylvestre* has also been used in snake bite, boil, constipation, and water retention, epilepsy, pain, high cholesterol, IDDM, NIDDM and obesity.[13,14]

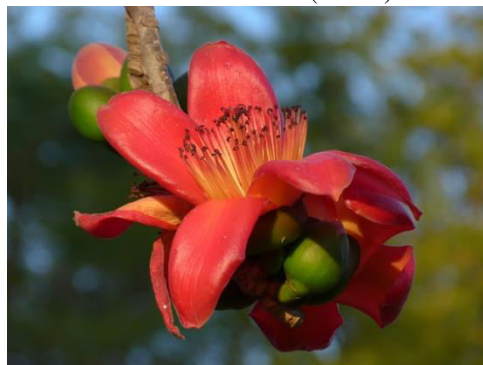
III.RESULTS

Flowering trees in Beawar, Rajasthan are in limited number due to desert region, however during spring the flowers bloom and beauty spreads around These are:-

A = *Butea monosperma* (Flame of the Forest)



B = *Bombax ceiba* (Semal)



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C = Erythrina variegata (Indian Coral Tree)



D = Tecomella undulata (Roheda)



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Edible fruiting trees in Beawar, Rajasthan also grow in a limited amount :



Balanites aegyptiaca

Ripe fruits are eaten raw/sun-dried and stored like dates, made into sweetmeats or fruit juice (mixed with water) and mixed with cereals, or fermented to alcoholic beverages. Young shoots and leaves are used as vegetable, [22,23] added to soups, melon seeds/peanut pastes and used as a relish. Nutritional value of the fruits is [5]: Protein (4.9%), carbohydrate (69.9%), sugar (34.9%), fat (0.1%), fibre (3.5%), vitamin B2 (0.07mg/100g), vitamin C (46mg/100g), phosphorous (58mg/100g), calcium (147mg/100g), iron (4mg/100g) and energy (300.1Kcal/100g).[15,16]



Cordia myxa

Fruits are harvested at tender green immature stage for vegetable and are also used in pickles. Ripe fruits are also consumed. The floral buds and flowers are cooked as vegetable. Nutritional value of fruits is [7,8]: Protein (2%), carbohydrates (92%), fat (2%), fibre (2%), phosphorous (275mg/100g), calcium (55mg/100g), iron (6mg/100g), zinc (2mg/100g), manganese (2mg/100g) and energy (394Kcal/100g).[24]

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Salvadora oleoides

Fruits are plucked or felled by shaking the trees vigorously. Ripe fruits are sweet and are eaten raw. Nutritional value of fruits is : Protein (6%), carbohydrate (76%), fat (2%), fibre (2%), zinc (2mg/100g), phosphorous (167mg/100g), calcium (630mg/100g), manganese (2mg/100g), iron (8mg/100g) and energy (346Kcal/100g).[17,18]



Leptadenia pyrotechnica

Its edible Part is Tender fruit. Flowering time is August-December and fruiting time is November- March. Fruit is collected and cooked as vegetable.[25]

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Commiphora wightii

Guggul gum is a mixture of 61% resins, 29.3% gum, 6.1% water, 0.6% volatile oil and 3.2% foreign matter [9]. The important biologically active principles of C21 or C27 steroids are: guggulsterol-I, guggulsterol-II guggulsterol-III, guggulsterol-IV guggulsterol-V, E-guggulsterone, Z-guggulsterone and related ketones. It has been used as an inactive pharmaceutical ingredient, binding agent,[26] anti-obesity agent, and cholesterol-reducing agent. Therapeutic uses include treatment of nervous diseases, leprosy, muscle spasms, ophthalmia, skin disorders, ulcerative pharyngitis, hypertension, ischaemia, and urinary disorders. It is also used in incense, lacquers, varnishes, and ointments, as a fixative and in perfumes.[19,20]

IV.CONCLUSIONS

The wild plants assume significance as alternative food sources, predominantly in the areas receiving frequent droughts and famine. In many Indian states, majority of forest dwellers depend on forests for their annual food requirements. *Cordia myxa*, *Zizyphus mauritiana*, *Salvadora oleoides* are some of the important fruit bearing plant species found in hot arid region in India that provide food supplement [27] and means of survival during time of hardships. Rural people in Rajasthan state of India have extensive knowledge about use of famine foods. The fruits of many plants are rich sources of protein and energy. For example, *Zizyphus mauritiana* is richer than apple in protein, phosphorous, calcium, carotene and vitamin C. However, they are often undervalued and underutilized. [28]

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