*International Journal of Engineering Research and Development*
*e- ISSN: 2278-067X, p-ISSN: 2278-800X, www.ijerd.com*
*Volume 21, Issue 7 (July 2025), PP 83-88*

# A Review on Shami (*Prosopis cineraria*) Plant in A Desert Area of Rajasthan

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***ABSTRACT***
*Prosopis cineraria is a member of the Leguminosae own family, regularly referred to as Khejri, Khijdo, Shami, and Jandi. The tree is referred to as Kalptaru because all of its components are useful. it's also referred to as the "wonder tree," making it the "lord of the desert." domestically referred to as "Sangari," the pods are fresh green vegetables that Rajasthani humans revel in together with its dry fruits. In instances of shortage, make pickles with Karir (Capparis decidua) and use them with bajara chapati as an meal. it's also an excellent supply of nutrients for individuals who live in desert regions. The herb has also been hired as an folks treatment for diverse illnesses in indigenous folks medicinal drug structures, which includes leprosy, dysentery, bronchitis, allergies, leukoderma, piles, muscle spasms, and wandering thoughts. Plant components which includes leaves, pods, vegetation, stems, and seeds have unique metabolites. considerable phytochemical materials observed in flora have previously been recognized as which includes fatty acids, carbohydrates, protein, saponins, tannins, alkaloids, and glucoside. Analgesic hobby, antitumor hobby, anticonvulsant hobby, antihyperlipidemic hobby, antipyretic hobby, and antimicrobial hobby are some of the pharmacological residences of flora*
***Keywords:*** *Prosopis cineraria, Phytochemicals, Pharmacological activities.*

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Date of Submission: 08-07-2025 Date of acceptance: 20-07-2025

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## I. INTRODUCTION

Prosopis cineraria, a small to medium-sized plant (5 to ten meters tall), is observed in Jodhpur, Barmer, Bikaner, Nagaur, Sikar, and Churu in Rajasthan. The Khejri tree is the only one which prospers in a barren region regardless of all of the environmental demanding situations. since the tree's parts are all useful, it's far called Kalptaru. additionally called the "marvel tree," it is also called the "lord of the barren region".

1 Arid forest studies Institute, Jodhpur, carried out common surveys in 2010 that confirmed the percentage mortality of khejri trees ranged from 18.08 to 22.67% with a median mortality of 20.ninety three% in those surveys. Deep-rooted, nitrogen-solving Prosopis cineraria (L.) Druce is a plant this is precise to India's sizzling deserts.

2 Within the summer time, sparkling leaves emerge earlier than or on the same time as the antique ones. Little yellow flora bloom after the brand new flush of leaves appears in March through may additionally. quickly after, pods start to form and speedy growth in size. The pod's ripening duration is from June through August. The driest months, March to June, are whilst sparkling foliage grows flora, and end result are produced. The plant additionally has antibacterial, anticancer, antiviral, antifungal, and anthelmintic homes.

3 Whilst Prosopis cineraria is watered with 50% seawater, it may grow. additionally, this tree grows in open forests on soils with a pH of 9.eight or higher and will flourish on dry, stony, alkaline ground.

4 The Bishnoi network of Rajasthan adheres to the spiritual precept of defensive khejri trees. They founded the Chipko movement whilst 363 Bishnoi gave their lives in 1730 to prevent the reducing of the khejri tree. The gum from the tree, that's nourishing and delectable, is utilized by pregnant women all through childbirth.

5 A flower and twig paste also characteristic as a antidiabetic medication when taken internally. records associated with Shami (Prosopis cineraria L.) was accrued from classical Ayurvedic literatures textbooks and diverse clinical published journals. The available commentaries of the Ayurvedic Samhitas have also mentioned accumulate applicable matters. the prevailing review manuscript makes a speciality of the particular profile of treasured vitamins, pharmacological compounds, and medicinal fitness features. a attempt is made to study diverse research on Shami (Prosopis cineraria L.) to assess its dietary as well as significance as a ahar.

**Geographical sources**

Jodhpur, Nagaur, Bikaner, Barmer, Jaisalmer, Pali Churu, and Jhunjhunu are almost desert districts of Rajasthan, India.

**Plant description**
Name - Sami
Botanical name - *Prosopis cineraria*
Ras - Kashaya, Madhur Guna - Laghu, Ruksha Virya - Sheeta
Vipaka – Katu, Fruit - Ushna

**Chemical constituents**
It contains sugars, five flavones, fatty acids, tannins and alkaloids.

**Pods (seeds)**
Ash 4%, Ca 414, P 400, Zn 4, Fe 19 and Mn 4 mg per 100 gm, 2% fat, 26% crude fibre, and 56% total carbs. High concentration of vitamin C (523 mg/100 g), amino acids (0.99%), and fatty acids (3.5% of which are oleic and linoleic acids, which account for 80%), polyphenols without glycosides, Gallic acid, Pituitrin, Luteolin, Prosogerin-E (6, 7-dihydroxy-3, 4, 5, trimethoxy flavone), Glycosidic polyphenolics, and Rutin are examples of phenolic compounds

**Leaves**
The primary chemical additives consist of flavone glycoside, pituitrin three, 5, 6, three, four- pentamethoxy-7-hydroxy flavone, 11.9% crude protein, 2.9% ether extract, 17.5% crude fibre, forty three.5% nitrogen-unfastened extract, zero.four% phosphorus, 2.1% calcium, and eight.1% ash.

**Stem bark**
Vitamin okay, n-octastyle acetate, glucose, rhamnose, sucrose, starch, and long-chain aliphatic acid. moreover, studies have determined that this plant includes phytochemicals, which includes five- hydroxytryptamine, apigenin, isorhamnetin-three-diglucoside, l- l- arabinose, quercetin, tannin, and tryptamine.

**Alkaloids**

Previously discovered in *Prosopis cineraria* include substances like Spiceries [6], Dasycarpidan-1-methanol, acetate (ester), 3- Butylindolizidine, and Prosophylline [7].

**Flavonoids**

Resemble the naturally occurring phytohormones prosogerin A, B, C, D, and E. [8] Researchers have discovered steroids in this plant, including cholesterol [9], 7,24-tirucalladien-3-one, camp sterol, stigma sterol, -sitosterol, stigmasta-4, and 6-dien-3-one [10].

**Fatty acids and Derivatives of *Prosopis cineraria***

These include palmitic acid, stearic acid, oleic acid, and linoleic acid, as well as (Z)-13-Docosenamide, 9-Hexadecenoic acid, and others [11].

**Pharmacological Activities**

**Antitumor Activity**

Bark and leaf hydro-alcoholic extracts were tested for antitumor efficacy the use of the Ehrlich ascites carcinoma tumour model. The effectiveness of the activity turned into assessed the use of in vitro cytotoxicity, strong tumour mass, haematological investigations, peritoneal cells, lipid peroxidation, and survival time. each extracts exhibited significant anticancer activity 12. Male Wister rats were subjected to a preventive activity check the use of a methanolic extract of the leaves towards artificially produced liver cancers. It turned into found that the administration of extract (2 hundred and four hundred mg/kg) decreased the degrees of mitochondrial lipid peroxidation and liver weight in a dose-established way. additionally, the extract raised the concentrations of mitochondrial enzymatic antioxidants**.**

**Antibacterial Activity**

The agar nicely diffusion technique assessed the antibacterial interest of the distinct stem bark and extracts from Prosopis cineraria. compared to the conventional antibiotic ciprofloxacin, the methanolic and aqueous extracts of Prosopis cineraria's stem bark showed most effective mild antibacterial interest in opposition to all of the tested strains of microorganisms at a concentration of 250 g/ml. Flavonoids and tannins may have contributed to the reported activity.

**Analgesic and antipyretic activities**

Soxhlet equipment changed into used to create stem bark extracts in petroleum ether, ethyl acetate, and ethanol. In rats used inside the experiment, ethanol extract substantially reduced pain in Eddy's hot plate version 14. The acetic acid-precipitated writhing test version changed into used to assess the analgesic efficacy of the leaf aqueous extract. compared to the control, Swiss Albino mice showed substantially famine of 1868–1869. Cakes were made from the flour that was then pounded into powder.

Extra analgesic activity. using Brewer’s yeast-precipitated hyperpyrexia version, the extract also tested a stable antipyretic efficacy on the equal dose.

**Antidiabetic and Antioxidant Activities**

The Alloxan-induced hyperglycaemia model assessed the antihyperglycemic results of an 50% hydro-alcoholic stem bark extract. Hyperglycaemic mice received an oral dose of the extract at an rate of 300 mg/Kg B.W. once every day for 45 days. The rate of body weight loss in mice was appreciably slower than in the manipulate group. Fasting blood glucose stages dropped through 27.three%, nearly matching the 49.three% discount because of traditional glibness amide, even as liver glycogen textual content dramatically multiplied when as compared to the manipulate group. Drug therapy also stabilized the textual content of non-enzymatic antioxidants, which reduced the attention of oxidative damage in the tissue of diabetic rats.

**Antimicrobial activity**

In order to test the antimicrobial activity of *Prosopis cineraria* leaf extracts, Staphylococcus aureus (a Gram-positive pathogen), Escherichia coli (a Gram-negative pathogen), and Candida albicans (a Fungal pathogen) were utilized as pathogenic organisms.

**Anticonvulsant Activity**

For anticonvulsant effect against maximal electric surprise (MES) and pentylenetetrazol (PTZ) produced convulsions in mice, methyl Olić extract of stem barks was investigated. In each models, a huge anticonvulsant effect of stem bark methanolic extract was seen.

**Ethnomedicinal uses**

The importance of the healthful worth of the *Prosopis cineraria* tree has been highlighted in ancient *Ayurvedic* literature.

**Fruits**

The pods are referred to as "Sangari" regionally, and Rajasthani humans eat them as sparkling inexperienced greens. it's miles dried fruit in times of scarcity; make pickles with Karir (Capparis decidua) and use them with bajara chapati as an meal. it is also a great source of vitamins for folks that live in wilderness areas. in step with Maheshwari et al., Sangari pods are mixed with wheat flour to create bakery items, such as chapatti and bread. one of the fine meals to pop out of Rajasthani cooking.

**Bark**

Prosopis cineraria bark has cooling residences, is an anthelmintic and tonic, and treats a spread of ailments, together with dysentery, bronchitis, asthma, leukoderma, piles, and muscle spasms. Diarrhoea, worm infestations, rheumatoid arthritis, colds and flu, and skin conditions. in case you've been bitten by means of an snake or an scorpion, the plant's bark can offer quick comfort sixteen. Bark as an food source is stated to have stored many lives at some stage in the excessive Rajputanafamine of 1868–1869. Cakes were made from the flour that was then pounded into powder.

**Leaves**

Prosopis leaves are pretty nutritious and are known as "lengthy" leaves. Prosopis leaf extract reveals antibacterial, antihyperglycemic, and antioxidant homes . Leaf smoke appears to be beneficial for eye troubles. Animal mouth ulcers are dealt with with leaf paste on boils and blisters, while exposed pores and skin sores are dealt with with leaf infusion . medicines for treating neurological illnesses are crafted from leaves and end result.

**Flowers**

To prevent miscarriage, it is pounded, blended with sugar, and consumed at some stage in pregnancy. Flower and twig paste additionally feature as an antidiabetic medicine when taken internally**.**

**Gum**

The tree's nutritious and delicious gum is used by pregnant girls to set off labour and is idea to have pectoral, astringent, and demulcent residences.

## II. DISCUSSION

Ethnobotany, in totality, is certainly a brand new area of research, and if this area is investigated thoroughly and systematically, it's going to yield consequences of terrific value to ethnologists, archaeologists, anthropologists, plant geographers, pharmacologists, and so on. herbal medication also suits the social and cultural needs of the humans and influences the sufferers' physical, intellectual, and emotional states as well. The herbal pills prepared with the conventional methods via sluggish grinding and mixing processes conserve all of the herbal materials within it in the 'evidently balanced form' without losing any critical component and hold the hobby and purity of the drug. The presence of several essential components in the 'evidently balanced kingdom' is possibly the premise for the minimum side results of herbal pills. They had been examined for the reason that time immemorial and proved to have side blessings in area of damaging results commonly produced with the aid of synthetic and chemical-based totally dangerous products. several flowers may be processed in cosmetics, probable in terrific call for in India and overseas. possibly the amazing instance, at the least in modern times, of the usage of the literature is the large compilation of all anti-tumour flowers, stated in vintage texts and nearby people medication from everywhere in the world for screening functions at cancer Chemotherapy country wide carrier center (CCNSC). Our historical literature can also be tapped for records on medicinal flowers. it's miles estimated

that nearly one-third of about 15,000 higher plant species in India are used by tribals and negative humans. No proper record of any type except a few archaeological sculptures of Mohenjo-Daro is available from the preceding length on this united states. however Rigveda and Atharvaveda, from 2000 to 1000 B.C., are our oldest Vedic literature assets. They incorporate valuable records concerning medicinal flowers of that length. thus, from historical instances, Indian people existence has not most effective blanketed trees, flowers, and vegetation as contributors of their circle of relatives however has also found God's image in them. because of this, the songs, stories and other expressions are replete with deep affection for trees and flowers. Edaphic elements encouraged the Lawsone paragraph of Lawsonia inermis L. Adhatoda vasica Nees has been found as a Putative HIV-Protease inhibitor 19. thus, flowers have capability medicinal makes use of, however their contents may be encouraged with the aid of edaphic and climatic elements, which need further investigation.

## III. CONCLUSION

Prosopis cineraria has a selection of phytoconstituents and well-knownshows more than a few organic actions, along with analgesic, antitumor, anticonvulsant, antihyperlipidemic, antipyretic, and antimicrobial consequences. distinctive plant parts comprise quite a few phytochemicals that can be used to treatment a selection of illnesses. local healers rent plant parts to deal with gastrointestinal, breathing, and circulatory illnesses, among other maladies. The plant has been used medicinally for the reason that historical instances. Folkloric claims approximately the stem bark's anti inflammatory, antirheumatic, tonic, and vermifuge consequences have led to its use as an remedy for anxiety, asthma, bronchitis, dyspepsia, fever, dysentery, leprosy, piles, wandering mind, and tremors. additionally, it is said to have laxative and anti-abortive characteristics.

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